Teach Yourself VISUALLY™

Microsoft® Office Access™ 2007



by Faithe Wempen



Wiley Publishing, Inc.

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Faithe Wempen is a Microsoft Office Master Instructor and an adjunct instructor of computer technology at IUPUI, where she teaches courses in computer hardware and software architecture. She is the author of over 90 books on PC hardware and software, including *The Microsoft Office PowerPoint 2007 Bible*.

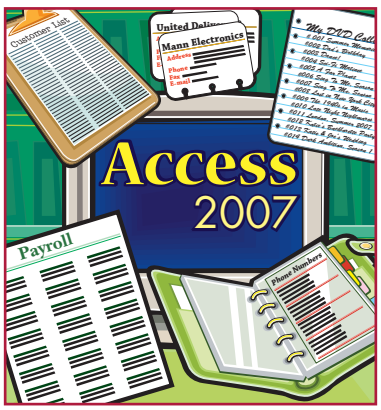
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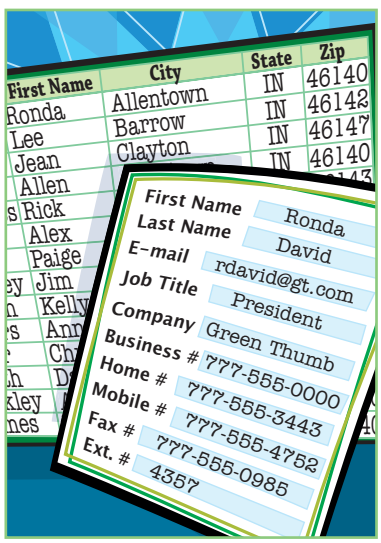
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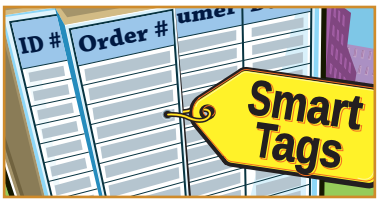
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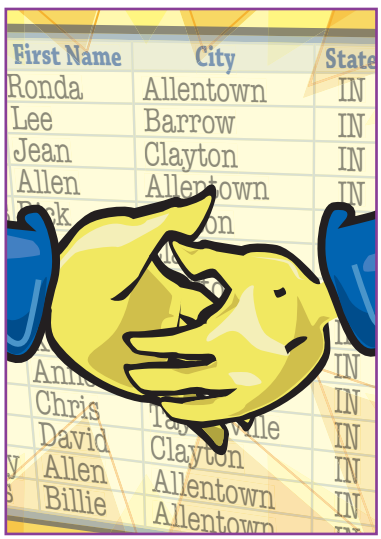
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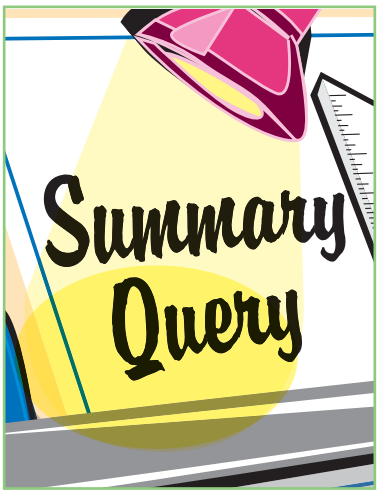
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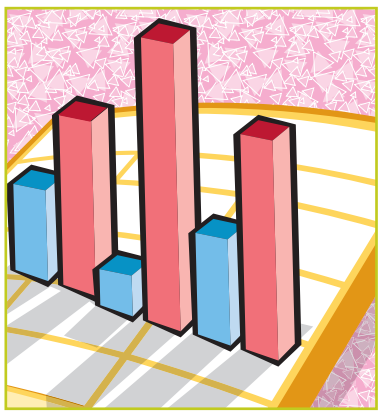
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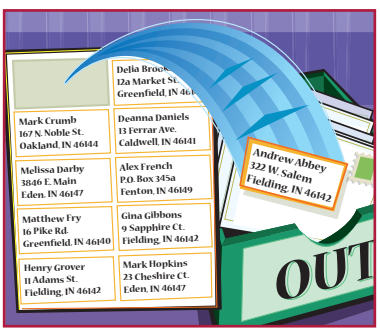
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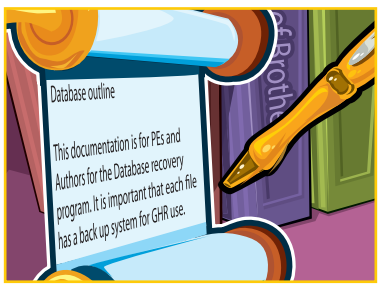
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How to Use This Book

How to Use This *Teach Yourself VISUALLY* Book

Do you look at the pictures in a book or newspaper before anything else on a page? Would you rather see an image instead of read about how to do something? Search no further. This book is for you. Opening *Teach Yourself VISUALLY Microsoft Office Access 2007* enables you to read less and learn more about Microsoft Office Access 2007.

Who Needs This Book

This book is for a reader who has never used this particular application. It is also for more computer-literate individuals who want to expand their knowledge of the different features that Access has to offer. I assume that you are already familiar with Windows XP or Windows Vista, whichever one you have on your PC, with basic skills such as clicking, double-clicking, dragging, and opening/closing windows.

Book Organization

Teach Yourself VISUALLY Microsoft Office Access 2007 has 15 chapters:

Chapter 1, "**Getting Started with Access 2007**," covers starting and exiting the program, opening files and objects, and creating a new database file.

Chapter 2, "**Entering and Editing Data**," discusses adding records to a database table, editing and deleting records, and viewing datasheets.

In Chapter 3, "**Working with Tables**," you will learn how to create new tables and SharePoint lists, set primary keys and composite keys, and rename and delete tables.

Chapter 4, "**Working with Fields**," covers setting up fields within tables, including inserting and deleting them, changing their data types, setting field properties, and constructing input masks and validation rules.

Chapter 5, "**Working with Relationships and Lookups**," covers creating relationships between tables, viewing object dependencies, and creating lookups from one table to another.

Chapter 6, "**Finding and Filtering Data**," discusses Find and Replace, filters by selection and by form, and saving filters as queries.

Chapter 7, "**Creating Simple Queries**," explains how to create queries with the Simple Query Wizard and in Query Design view, how to add sorting and aliases to queries, and how to define basic criteria.

Chapter 8, "**Creating More Complex Queries**," covers defining a calculated field, running action queries, and creating queries that prompt the user for parameters.

Chapter 9, "**Creating Forms**," covers building basic forms with the Form Wizard and in Form Design view.

In Chapter 10, "**Modifying and Formatting Forms**," you will find out how to create forms with multiple sections, apply AutoFormat styles, and create conditional formatting and tabbed sections.

Chapter 11, "**Creating and Formatting Reports**," covers creating and printing reports and changing a report's layout.

Chapter 12, "**Grouping and Summarizing Data**," explains creating summary reports, reports with aggregate functions, and PivotTables.

Chapter 13, "**Creating Mailing Labels and Charts**," describes creating and formatting labels and working with PivotChart views.

Chapter 14, "**Working with External Data**," covers linking, importing, and exporting data in popular formats, including Excel, Access, HTML, and plain text.

Chapter 15, "**Maintaining a Database**," covers setting up a trusted location, saving and opening files between different versions of Access, backing up a database, and compacting and repairing a database.

Chapter Organization

Each chapter of this book consists of sections, all listed in the book's table of contents. A *section* is a set of steps that shows you how to complete a specific computer task.

Each section, usually contained on two facing pages, has an introduction to the task at hand, a set of full-color screen shots and steps that walk you through the task, and a set of tips. This format enables you to quickly look at a topic of interest and learn it instantly.

Chapters group together seven or more sections with a common theme. A chapter may also contain pages that give you the background information needed to understand the sections in a chapter.

Using the Mouse

This book uses the following conventions to describe the actions that you perform when using the mouse:

Click

Press your left mouse button once. You generally click your mouse on something to select something on the screen.

Double-Click

Press your left mouse button twice. Double-clicking something on the computer screen generally opens whatever item you have double-clicked.

Right-Click

Press your right mouse button. When you right-click anything on the computer screen, the program displays a shortcut menu containing commands specific to the selected item.

Click and Drag and Release the Mouse

Move your mouse pointer and hover it over an item on the screen. Press and hold down the left mouse button. Now, move the mouse to where you want to place the item and then release the button. You use this method to move an item from one area of the computer screen to another.

The Conventions in This Book

A number of typographic and layout styles have been used throughout *Teach Yourself VISUALLY Microsoft Office Access 2007* to distinguish different types of information.

Bold

Bold type represents the names of commands and options that you interact with. Bold type also indicates text and numbers that you must type into a dialog box or window.

Italics

Italic words introduce a new term and are followed by a definition.

Numbered Steps

You must perform the instructions in numbered steps in order to successfully complete a section and achieve the final results.

Bulleted Steps

These steps point out various optional features. You do not have to perform these steps; they simply give additional information about a feature.

Indented Text

Indented text tells you what the program does in response to you following a numbered step. For example, if you click a certain menu command, a dialog box may appear, or a window may open. Indented text may also tell you what the final result is when you follow a set of numbered steps.

Notes

Notes give additional information. They may describe special conditions that may occur during an operation. They may warn you of a situation that you want to avoid, for example the loss of data. A note may also cross-reference a related area of the book. A cross-reference may guide you to another chapter or another section with the current chapter.

Icons and Buttons

Icons and buttons are graphical representations within the text. They show you exactly what you need to click to perform a step.



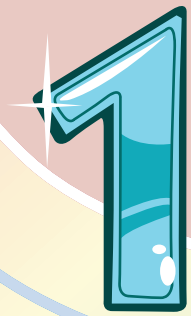
You can easily identify the tips in any section by looking for the TIPS icon. Tips offer additional information, including tips, hints, and tricks. You can use the TIPS information to go beyond what you have learned in the steps.

Operating System Differences

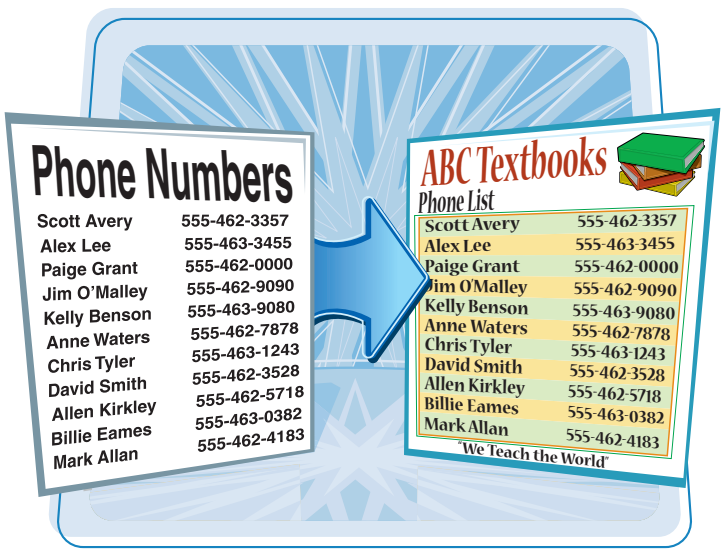
This book depicts Microsoft Office Access 2007 running under Windows Vista. If you are using Windows XP, you will notice minor differences in dialog boxes in which you are saving or opening files.

In order to get this information to you in a timely manner, this book was based on a prerelease version of Microsoft Vista/Microsoft Office 2007. There may be some minor changes between the screen shots in this book and what you see on your desktop. As always, Microsoft has the final word on how programs look and function; if you have any questions or see any discrepancies, consult the online help for further information about the software.

CHAPTER



Getting Started with Access 2007

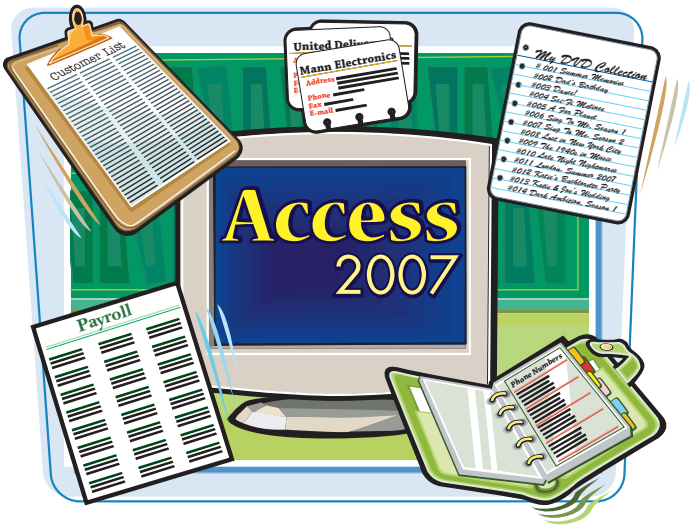


Are you new to Access or upgrading to the latest version? This chapter explains how to start a database and navigate through the new-and-improved Microsoft Office Access 2007 interface.

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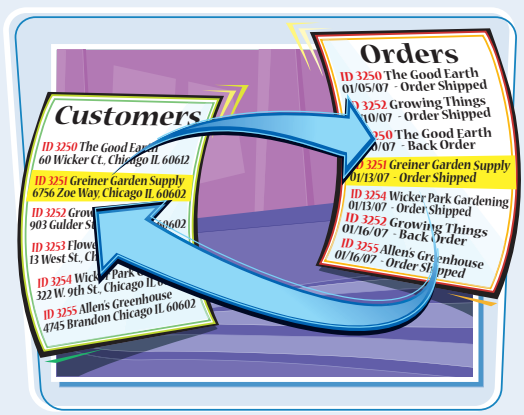
An Introduction to Access

Microsoft Access 2007 is a program for creating databases to store business or personal information. You can use Access to create, retrieve, and manage large or small collections of information.



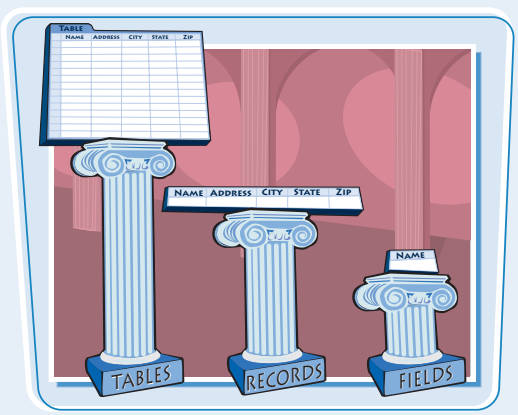
Relational Databases

Microsoft Access creates *relational databases* — that is, databases that can contain multiple tables with links between them. For example, a business may have a Customers table for storing customer contact information and an Orders table for storing information about orders placed. Each customer in the Customers table has a unique ID, and each order in the Orders table references a specific customer ID.



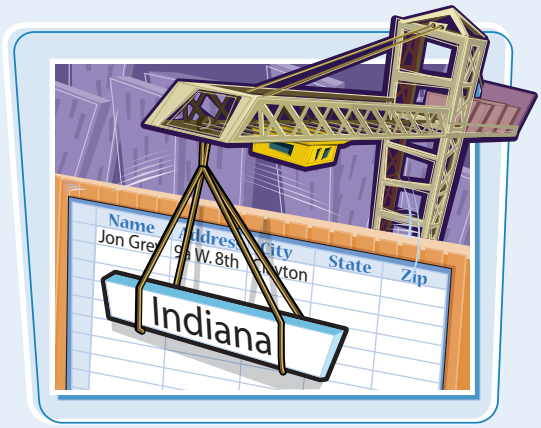
Tables, Records, and Fields

In Access, data is stored in *tables,* and each individual entry in the table is called a *record.* For example, in a Customers table, the information about each customer is a separate record. Each record is composed of one or more *fields* that contain individual pieces of data. For example, customer fields may include Name, Address, City, State, and Zip.



Datasheets and Forms

By default, each table appears as a spreadsheet grid called a *datasheet.* You can type directly into a datasheet. To make data entry more convenient, some people choose to create onscreen *forms,* which are like dialog boxes that prompt for field entries. An attractively formatted form is easier and more pleasant to use to enter new records than a plain datasheet.



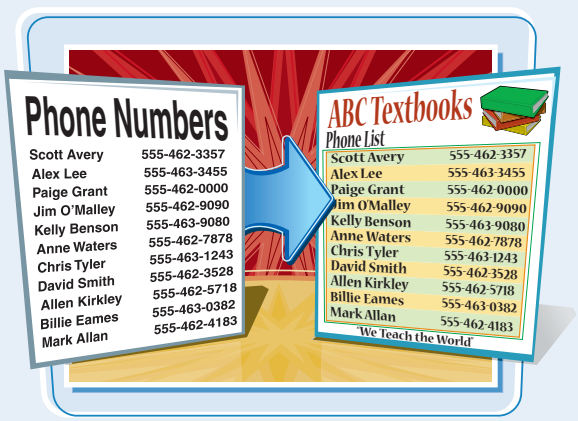


Filters and Queries

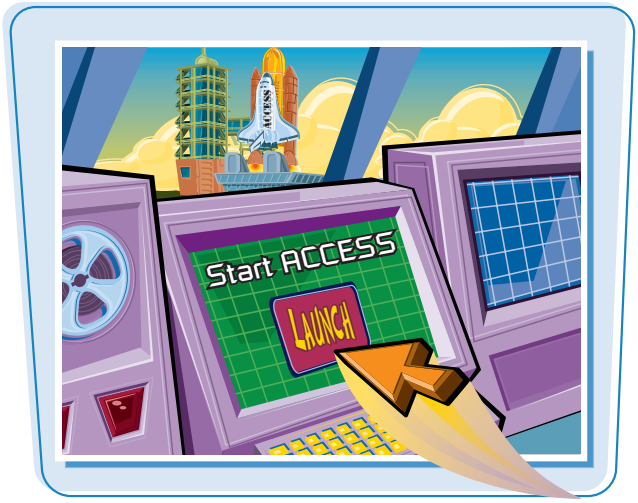
It is often useful to display a filtered view of a table. You can filter a table to show only certain records, only certain fields, or both. You can run a one-time filter, or you can create a *query,* which is like a saved filter. Queries also enable you to combine data from multiple related tables into a single datasheet of results.

Reports

Tables and query results appear in plain datasheets, which are not very attractive when printed. Reports present data from tables and queries in an attractive, customizable format — complete with titles, headers and footers, and even logos and graphics.



Start and Exit Access



Before you can create or open a database file, you must first start Access. When you are finished working with Access, you should close the program.

Start and Exit Access

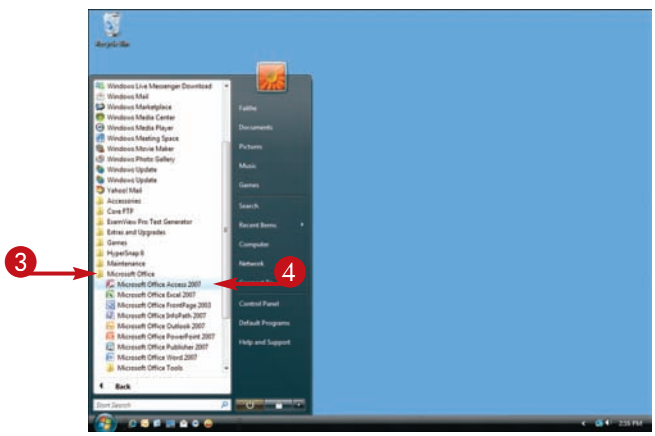
START ACCESS

1. Click **Start**.
2. Click **All Programs**.



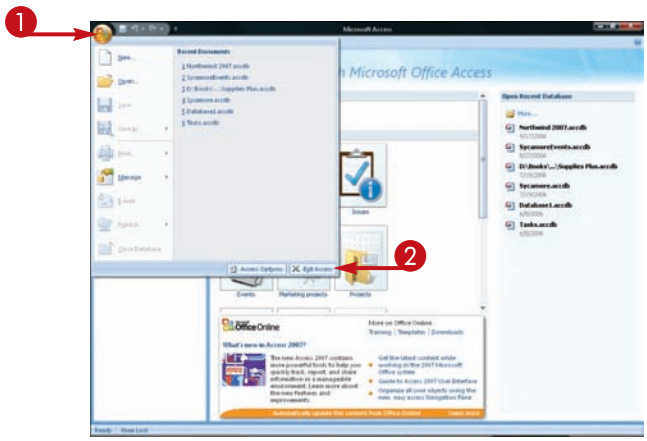
3. Click **Microsoft Office**.
4. Click **Microsoft Office Access 2007**.

   The Access program window opens, and the Getting Started with Microsoft Office Access screen appears.



EXIT ACCESS USING THE OFFICE BUTTON

1. Click the Office button ( ).
2. Click **Exit Access**.



EXIT ACCESS USING THE CLOSE BUTTON

1. Click the Close button ( ).



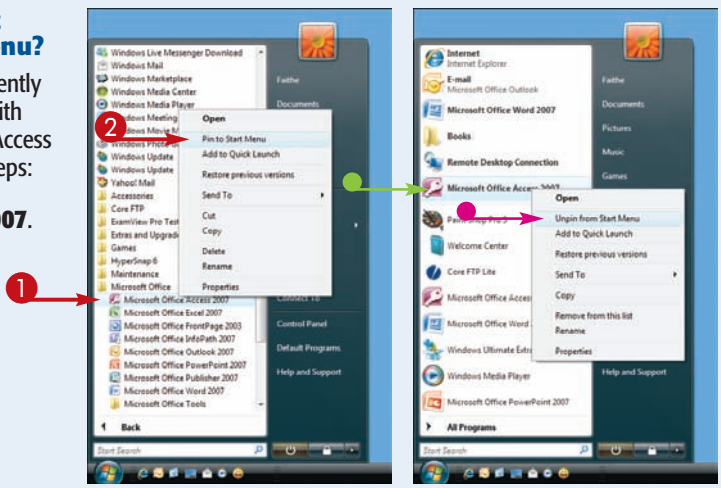
TIP

Can I start Access from the shortcut above All Programs on the Start menu?

Yes, if Access appears there. That is a list of recently used programs, and it is constantly changing with your Windows usage. To permanently pin the Access shortcut to that top-level menu, follow these steps:

1. Right-click **Microsoft Office Access 2007**.
2. Click **Pin to Start Menu**.

- The shortcut appears at the top of the Start menu.
- To unpin it from there, right-click it and choose **Unpin from Start Menu**.



Create a Blank Database

A blank database contains no database objects: no tables, no data, and no helper items such as queries or forms. It provides the freedom to create exactly the objects that you want for your project.

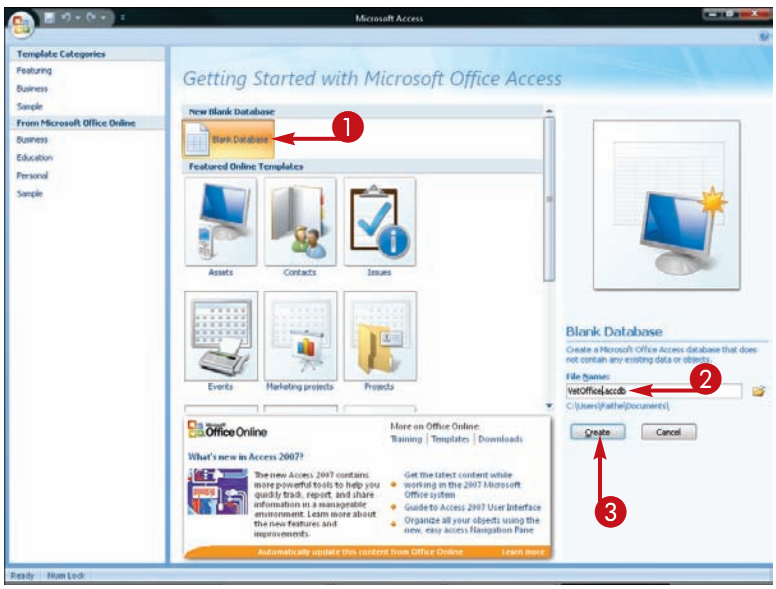


Create a Blank Database

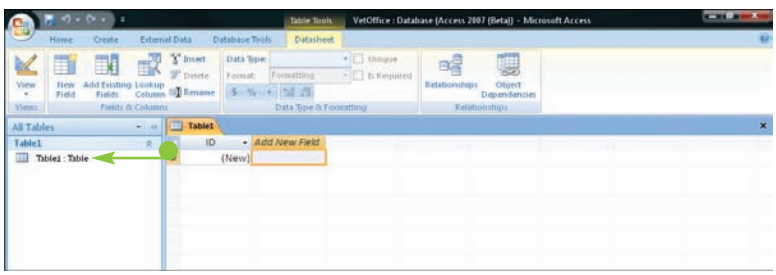
1. From the Getting Started with Microsoft Office Access window, click **Blank Database**.

   The Blank Database options appear.

2. Type a name for the database file.
3. Click **Create**.

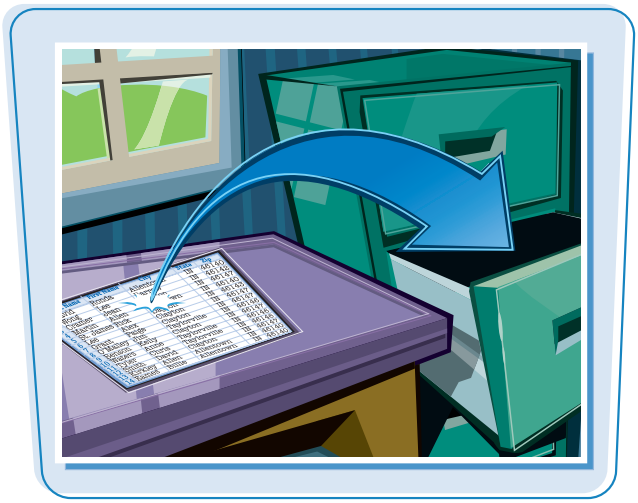


- A new database opens, with a new blank table started.



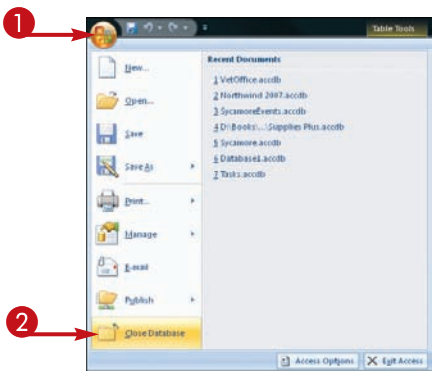
Close a Database

You can close a database without closing Access 2007 itself. Multiple databases can be open at once, but closing a database when you are finished with it frees up your PC's memory.



Close a Database

1. Click .
2. Click **Close Database**.



The Getting Started with Microsoft Office Access screen reappears.



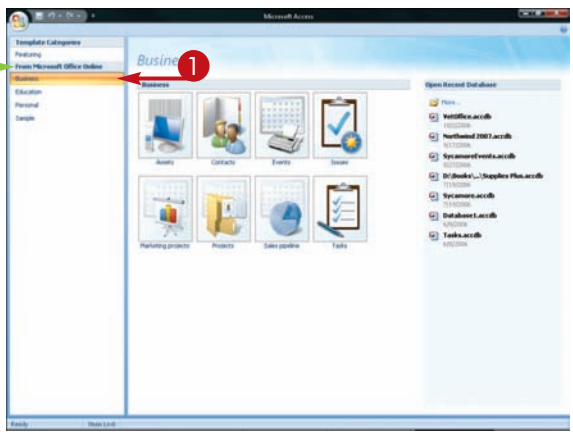
Create a Database Using a Template

You can create a new database based on a template. Templates provide a jumpstart in creating a database by supplying tables, forms, and queries that you are likely to need.



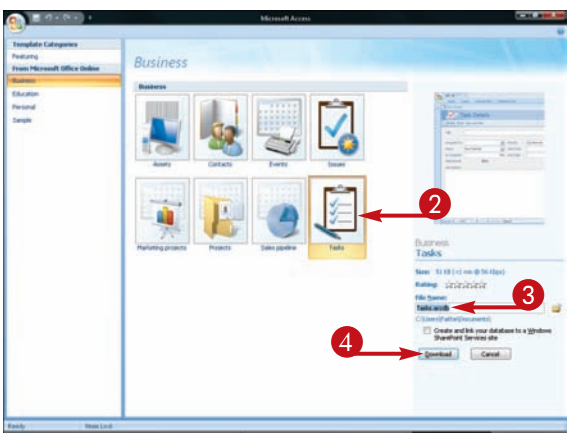
Create a Database Using a Template

1. From the Getting Started with Microsoft Office Access screen, click the template category that you want.
   - The templates you see may be different than shown here.



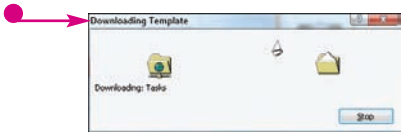
   The screen for the template that you chose appears.

2. Click the template that best matches your needs.
3. Type a name for the database file.
4. Click **Download**.



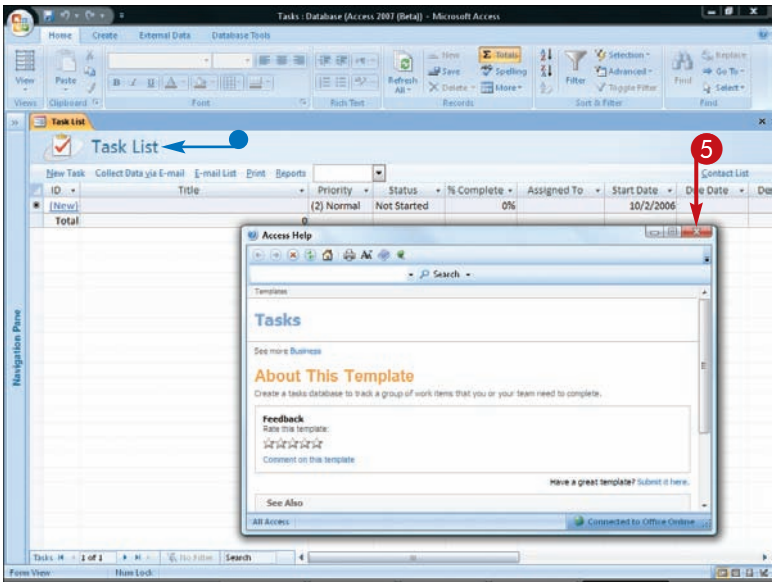
Note: *If you chose a template stored on your local hard drive, the button name in step* ***4*** *is* ***Create****.*

- For an online template, the template is downloaded from the Internet.



- A form appears. The form and its appearance depend on the template that you used.

5. Click to close the Access Help box.



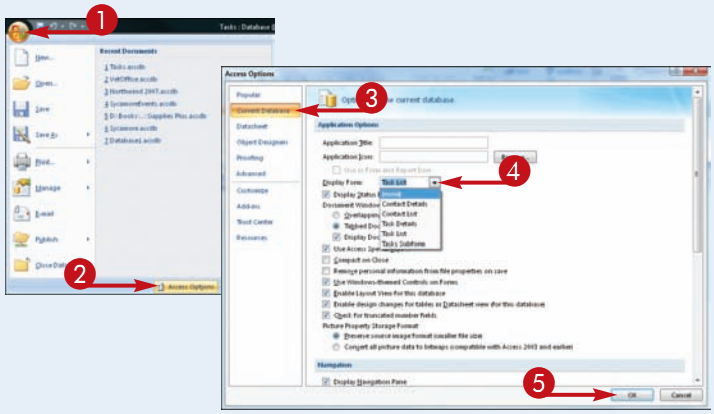
TIP

How can I prevent the startup form from opening when a database opens?

Databases based on Microsoft-supplied templates commonly load a startup form as a navigational aid. To prevent the form from opening automatically, follow these steps:

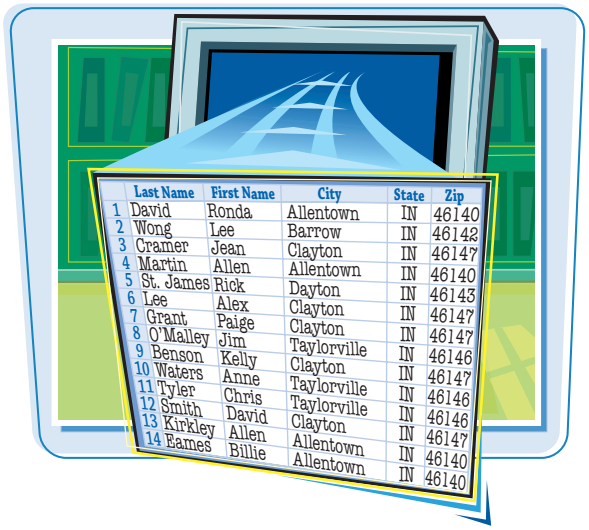
1. Click .
2. Click **Access Options**.

   The Access Options dialog box appears.
3. Click **Current Database**.
4. Click here and then select **None**.
5. Click **OK**.



Open a Database File

You can open a database that you previously created to continue creating its structure, entering data into it, or analyzing its data. Database files can be stored on a local hard drive or on a network or SharePoint server.



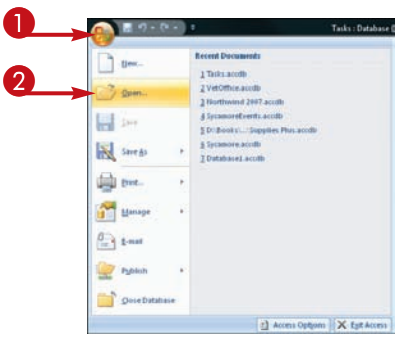
	Last Name	First Name	City	State	Zip
1	David	Ronda	Allentown	IN	46140
2	Wong	Lee	Barrow	IN	46142
3	Cramer	Jean	Clayton	IN	46147
4	Martin	Allen	Allentown	IN	46140
5	St. James	Rick	Dayton	IN	46143
6	Lee	Alex	Clayton	IN	46147
7	Grant	Paige	Clayton	IN	46147
8	O'Malley	Jim	Taylorville	IN	46146
9	Benson	Kelly	Clayton	IN	46147
10	Waters	Anne	Taylorville	IN	46146
11	Tyler	Chris	Taylorville	IN	46146
12	Smith	David	Clayton	IN	46147
13	Kirkley	Allen	Allentown	IN	46140
14	Eames	Billie	Allentown	IN	46140

Open a Database File

BROWSE FOR AND OPEN A DATABASE FILE

1. Click .
2. Click **Open**.

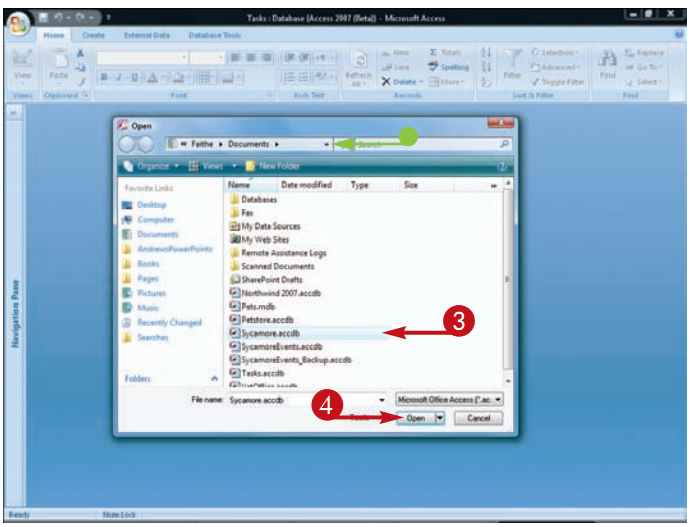
Note: *Alternatively, you can press* Ctrl + O *instead of performing steps* **1** *to* **2**.



The Open dialog box appears.

- If needed, you can click here and navigate to a different location.

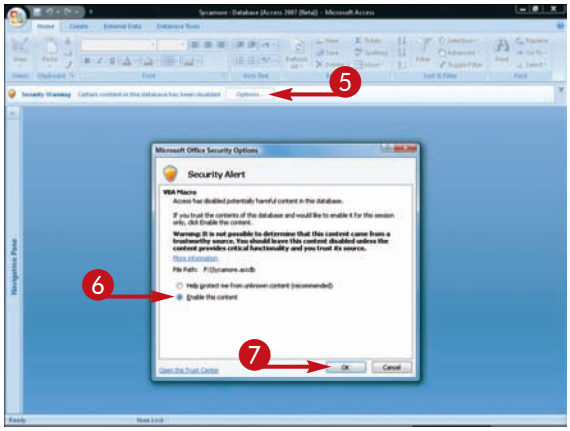
3. Click the name of the file that you want to open.
4. Click **Open**.



IF A SECURITY ALERT BAR APPEARS

5. Click **Options**.
6. Click **Enable this content**.
7. Click **OK**.

The database file opens.

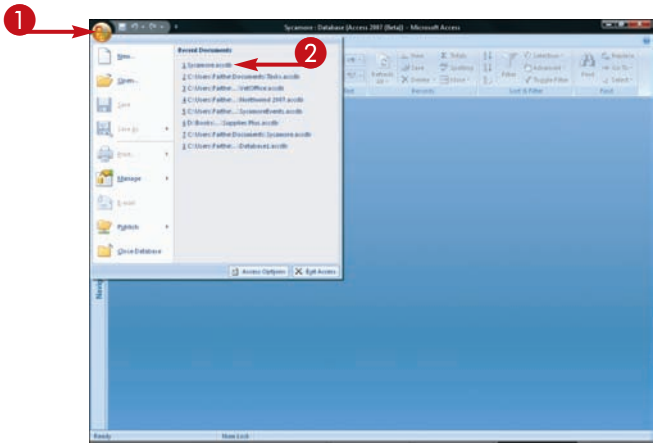


OPEN A RECENTLY USED FILE

1. Click .
2. Click the recently used database file that you want to open.

Note: *This list of recently used databases also appears on the Getting Started with Microsoft Office Access screen when Access starts, so you can click the file from there.*

The database file opens.



TIPS

Why does the Security Alert bar appear?

A security alert appears when you are opening a database that is stored in a location that is not trusted. The message implies that the file contains dangerous content, but that is not necessarily so; even a blank database can trigger the warning.



How can I prevent the security alert from appearing?

Add the location to your Trusted Locations list to prevent the Security Alert bar from appearing. To do so, see Chapter 15.



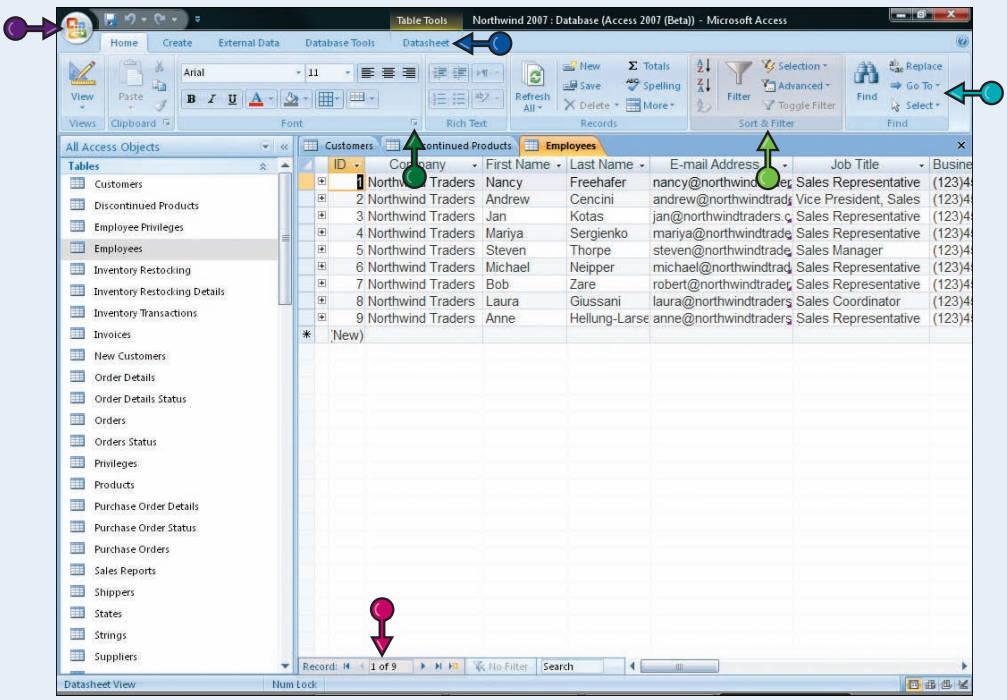
Understanding the Access 2007 Interface

Access 2007 has a consistent user interface with that of other Office 2007 applications, including Word and Excel. It contains an Office button, a multiple-tabbed Ribbon, and a status bar.

Office button
Displays a menu of database commands.

Tabs
Contain buttons and other controls for working with data.

Ribbon
Displays and organizes tabs.



Groups
Organize controls into sections within tabs.

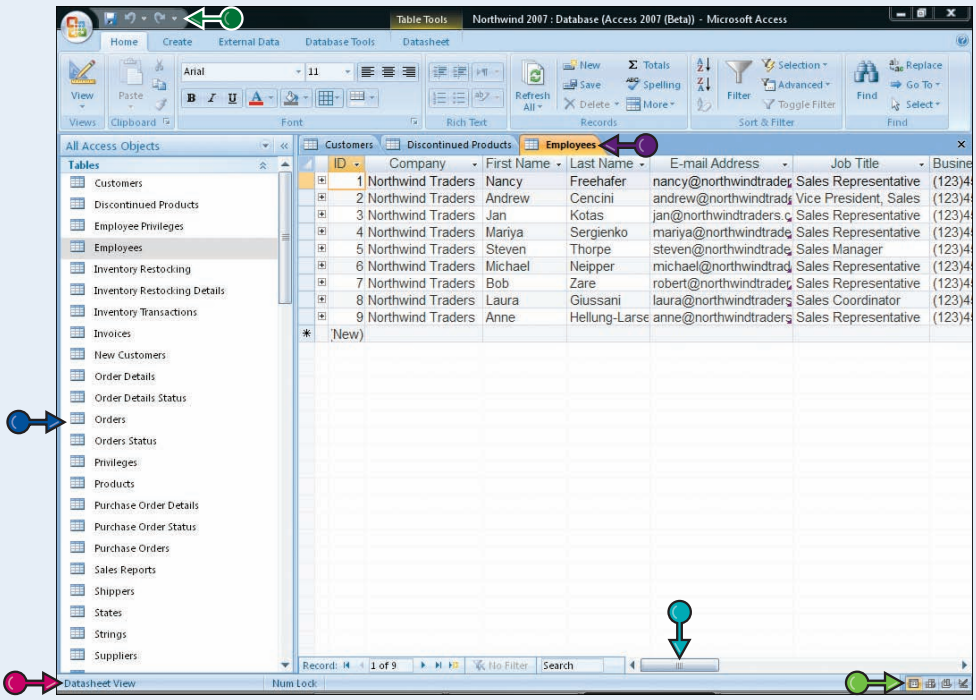
Dialog box launcher
Opens a dialog box related to the group.

Record selector
Displays the current record number and navigates to other records.

Object tabs
Provide access to all open database objects, such as tables, reports, and forms.

Navigation pane
Lists all available database objects.

Scroll bar
Scrolls horizontally through a datasheet.



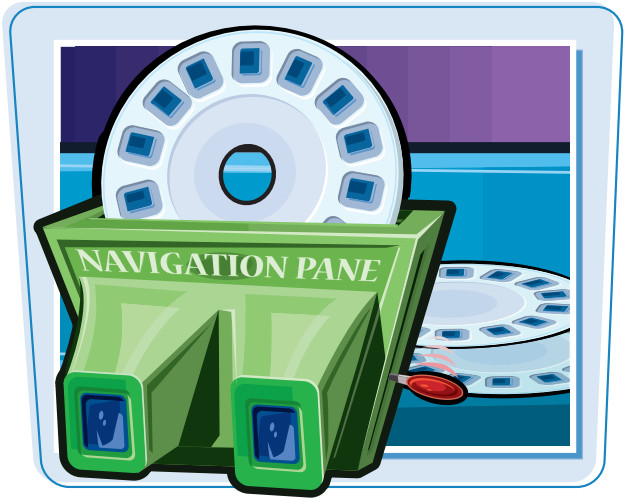
View buttons
Switch between various views of the selected object.

Quick Access toolbar
Provides shortcuts to commonly used features. This toolbar is customizable.

Status bar
Displays information about the current object or view.

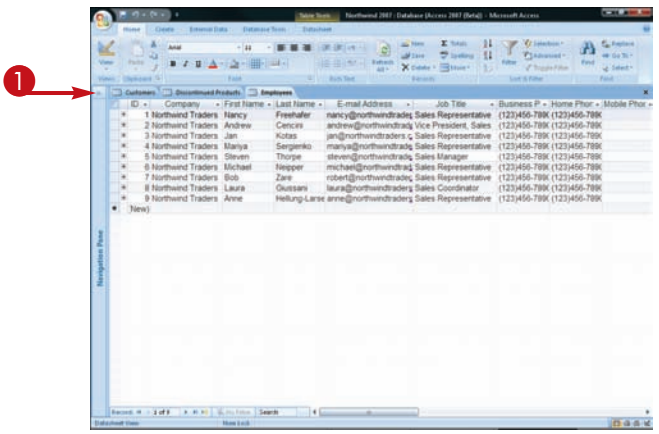
Change the Navigation Pane View

The Navigation pane enables you to view and manage database objects such as tables, queries, reports, and forms. You can display or hide the Navigation pane and change the way it sorts and lists objects.



Change the Navigation Pane View

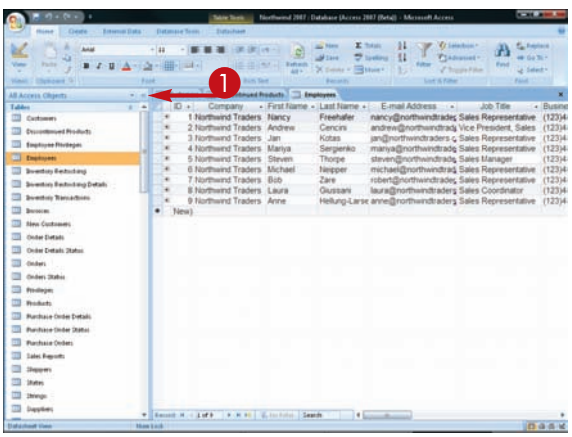
DISPLAY THE NAVIGATION PANE



1. If the Navigation pane is hidden, click the **>>** button.

   The Navigation pane appears.

HIDE THE NAVIGATION PANE



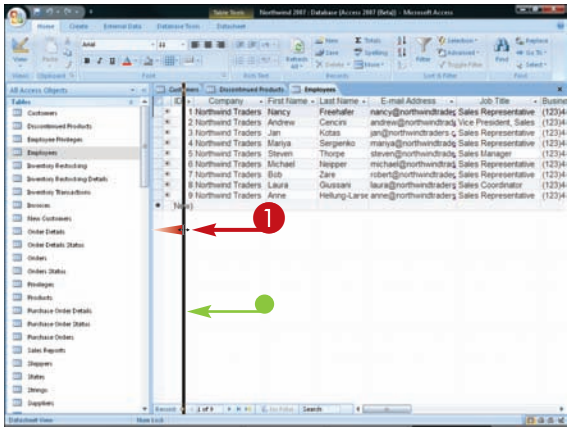
1. If the navigation pane is displayed, click the **<<** button.

   The Navigation pane disappears.

ADJUST THE SIZE OF THE NAVIGATION PANE

1. Drag the border to the left or right.

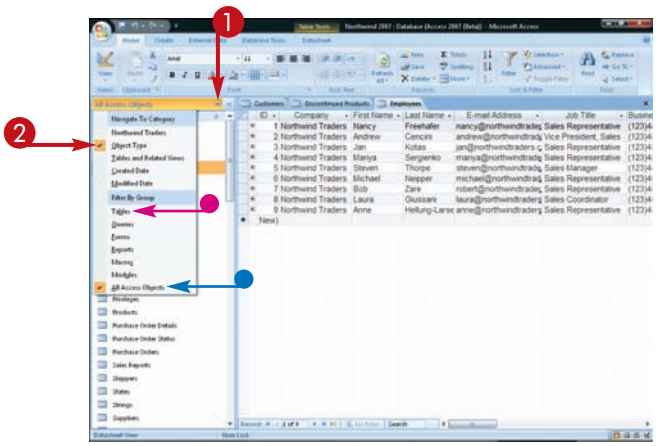
- A black line shows where the mouse pointer is dragging.



CHANGE THE WAY OBJECTS ARE DISPLAYED

1. Click here.
2. Click the way that you want to view the object list.

- You can also filter the list to show only a certain type of object.
- You can choose **All Access Objects** to return to the full list after filtering.



TIPS

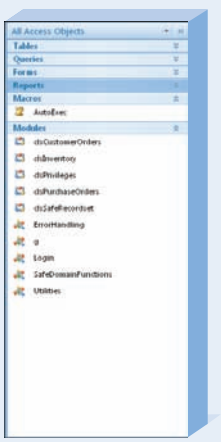
What are other ways to open and close the Navigation pane?

Pressing F11 toggles the Navigation pane on and off. You can also click **Navigation Pane** along the left edge of the screen when it is hidden to display it. Another way to hide it is to double-click the divider line between the Navigation pane and the main window when it is displayed.



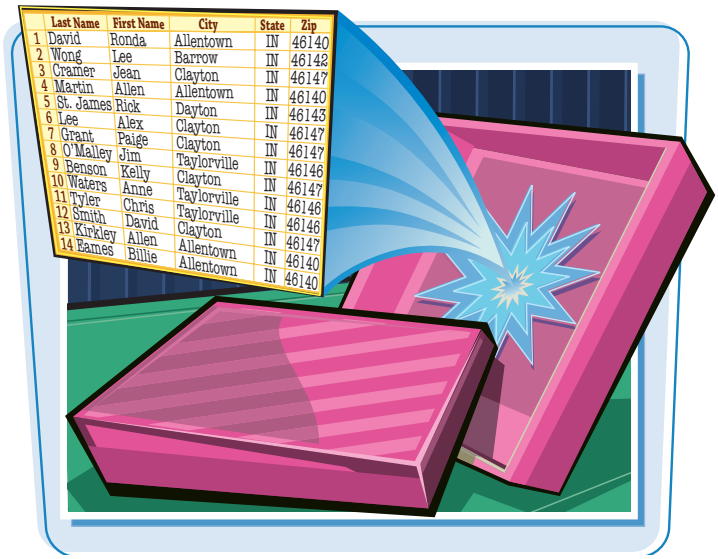
What are those colored bars in the Navigation pane?

Those are category headings. You can expand or collapse a category by clicking its bar.



Open and Close an Object

You can open any available database object from the Navigation pane. The object appears in the main window to the right of the Navigation pane, and from there you can work with its content.

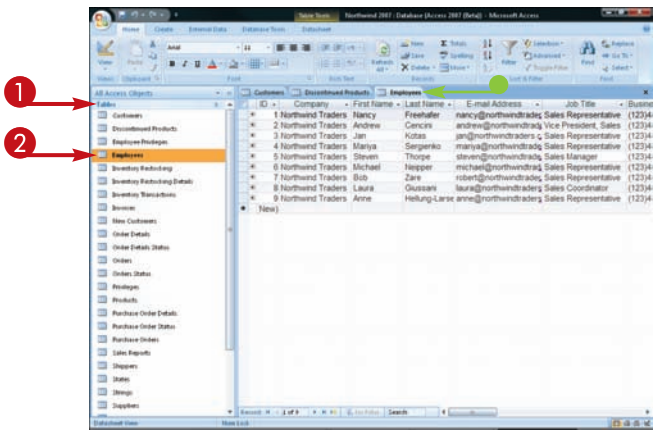


Open and Close an Object

OPEN AN OBJECT

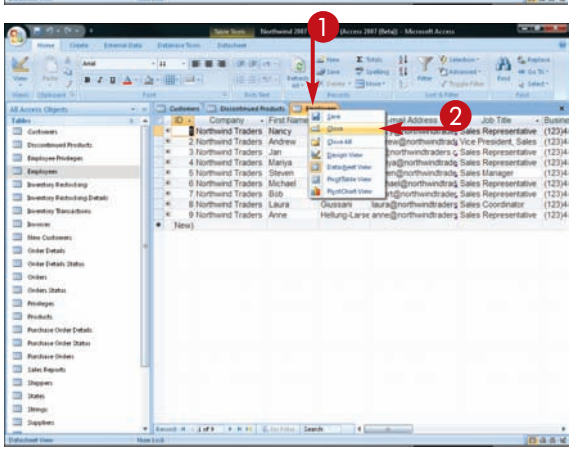
1. If needed, click a category to expand it.
2. Double-click the object.

- To switch among open objects, click the tab of the object that you want.



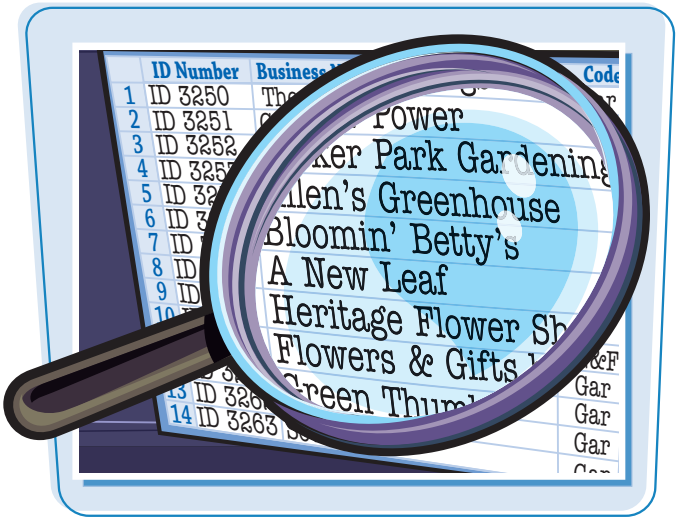
CLOSE AN OBJECT

1. Right-click the object's tab.
2. Click **Close**.



View an Object

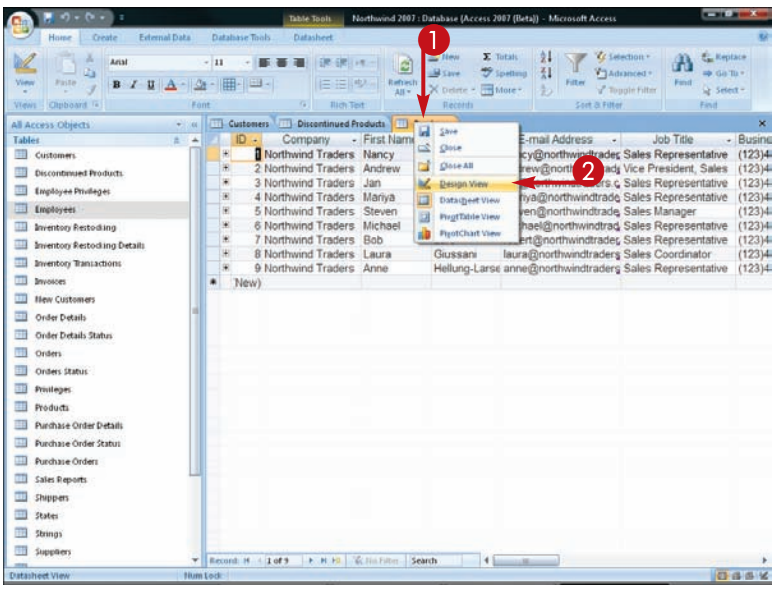
You can display objects in different views. The available views depend on the object type but usually include a view for using the object, such as the Datasheet view, and a view for modifying the object, such as the Design view.



View an Object

SELECT A VIEW FROM A MENU

1. Right-click the object's tab.
2. Click the view that you want.



SELECT A VIEW USING THE VIEW BUTTONS

1. Click the button for the view that you want.

Note: *The buttons available change depending on the object type.*

To determine which view a button represents, you can point to it to see a ScreenTip.



CHAPTER

2

Entering and Editing Data

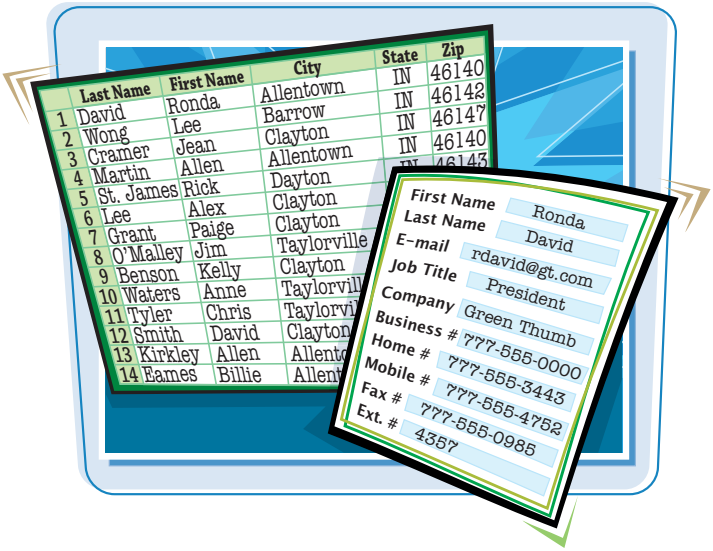


Entering data into a database is one of the most common activities that Access users perform. This chapter explains how to enter and edit data into existing database tables and how to sort and view the data that you have entered.

Enter New Records 22
Navigate between Records 24
Edit Records 25
Attach Files to Records 26
Open, Save, and Remove File Attachments 28
Insert an OLE Object.....30
Open, Edit, and Remove OLE Objects 32
Enter Data in a Multivalued Field 33
Delete Records 34
Resize Datasheet Columns and Rows 35
Sort Records 36
Display Summary Statistics.....38
Print a Datasheet or Form.....39

Enter New Records

You can enter records either into a datasheet (in a row-and-column spreadsheet format) or into a form. A datasheet enables you to see records that have already been entered, whereas a form enables you to concentrate on one record at a time.



Enter New Records

ENTER A RECORD INTO A DATASHEET

1. In the Navigation pane, double-click the datasheet.

   The datasheet opens.

2. If there is already data in the table, click the New Record button ( ).

   The insertion point moves to the first field in the first empty row.

3. If the first field contains (New), press Tab to move past it.

Note: *A field that contains (New) is an AutoNumber field, and Access will fill it in.*

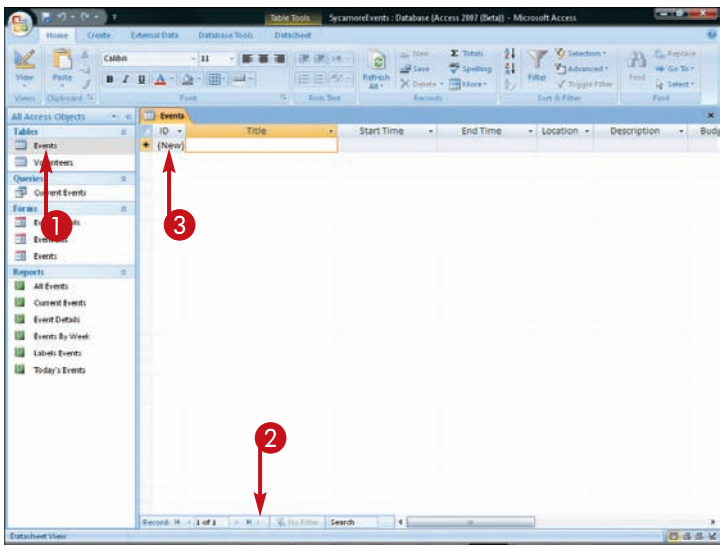
4. Type an entry in the selected field.

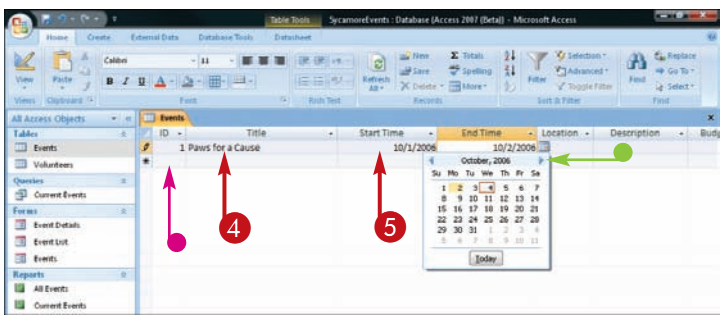
5. Press Tab to move to the next field.

   - Some fields have special selectors that you can use to make an entry, such as a calendar.

6. Repeat steps **4** to **5** until all fields have been filled in for that record.

   - The next row in the datasheet becomes active when you press Tab at the last (rightmost) field in a row.





ENTER A RECORD INTO A FORM

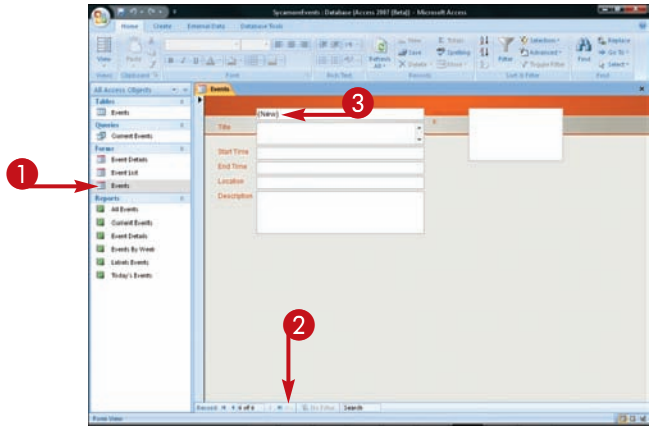
1. In the Navigation pane, double-click the form.

   The form opens.

2. If an existing record appears in the form, click .

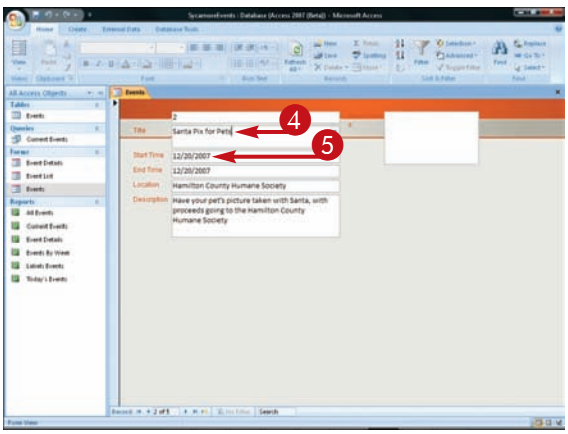
   The form clears, ready for a new record.

3. If the first field contains (New), press Tab to move past it.



4. Type an entry in the selected field.
5. Press Tab to move to the next field.
6. Repeat steps **4** to **5** until all fields have been filled in for that record.

   The form clears and a new record begins when you press Tab at the last field on the form.



TIPS

Can I skip certain fields?

Yes. Just press Tab to move past a field without entering anything into it. If the field is set up to require an entry, however, Access will not let you continue past it without typing something. In Chapter 4, you will learn how to make a field required or not.



Do I have to complete the fields in the given order?

No, you can click to move the insertion point to any field. You may want to do that to skip several fields. You can also start a new record early, without moving through all the fields, by clicking . In a datasheet, you can also press the down-arrow key to move down to the next row and start a new record.



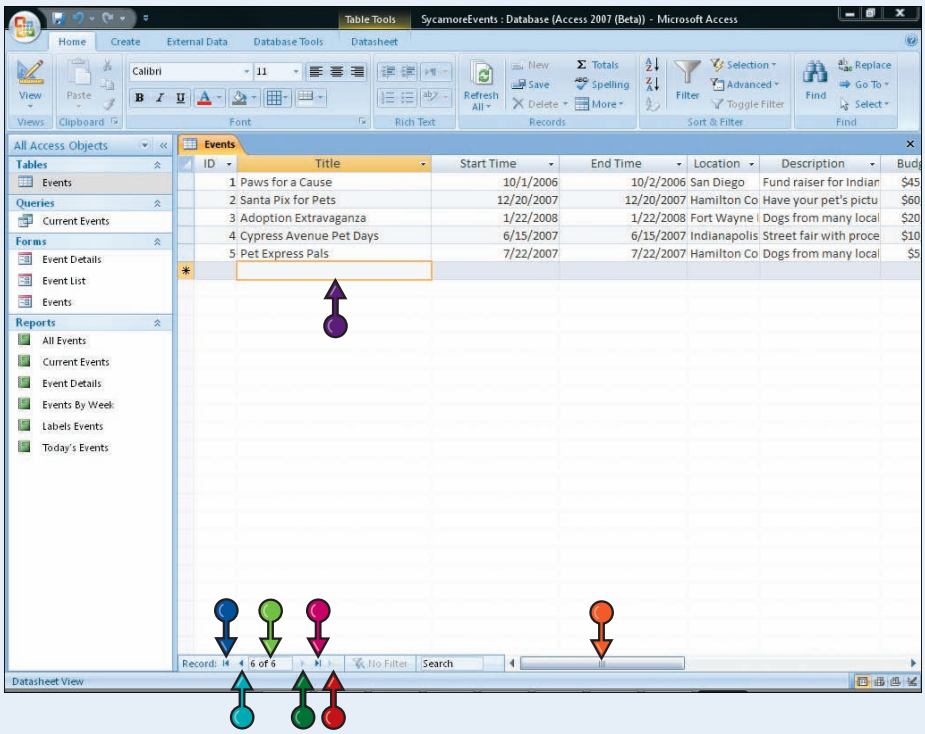
Navigate between Records

After entering several records into a table, you may want to revisit one of them, either to make changes or to simply review the data that you have entered. The same controls for navigation appear on both datasheets and forms.

Move the insertion point
Move the insertion point to any field in any record by clicking there.

First record
Click here to jump to the first record.

Previous record
Click here to go to the previous record, or press the up-arrow key once.



Record number
Type a record number here to jump to that record.

Next record
Click here to go to the next record, or press the down-arrow key once.

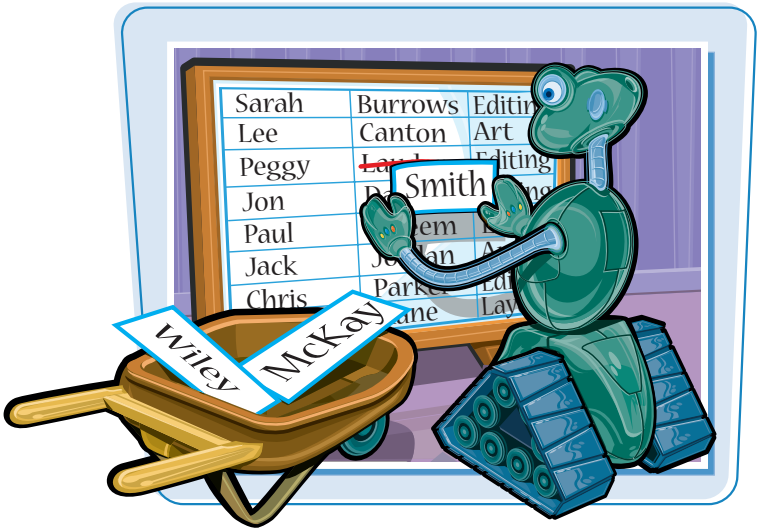
Scroll
Use the scroll bars to see other fields or records.

New record
Click here to start a new record.

Last record
Click here to go to the last record.

Edit Records

You can edit database records from either a datasheet or a form. After redisplaying the record that you want, you can move the insertion point to the field to be edited and make a change or delete the field entry entirely.



Edit Records

EDIT A FIELD

1. Click in the field, where you want the insertion point to be placed.
   - You can press Delete to remove a single character to the right of the insertion point.
   - You can press Backspace to remove a single character to the left of the insertion point.
2. Type any needed new text.

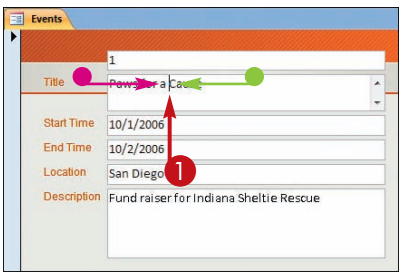
DELETE THE EXISTING ENTRY IN A FIELD

1. Drag across an entry to select it.

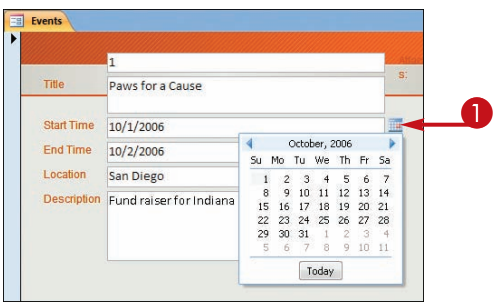
   Alternatively, you can press Tab to move to the next field and select its content.
2. Press the Delete key.

USE SPECIAL ENTRY AIDS

1. If a field has special field entry aids, such as a calendar selector, use it to change the field's entry.

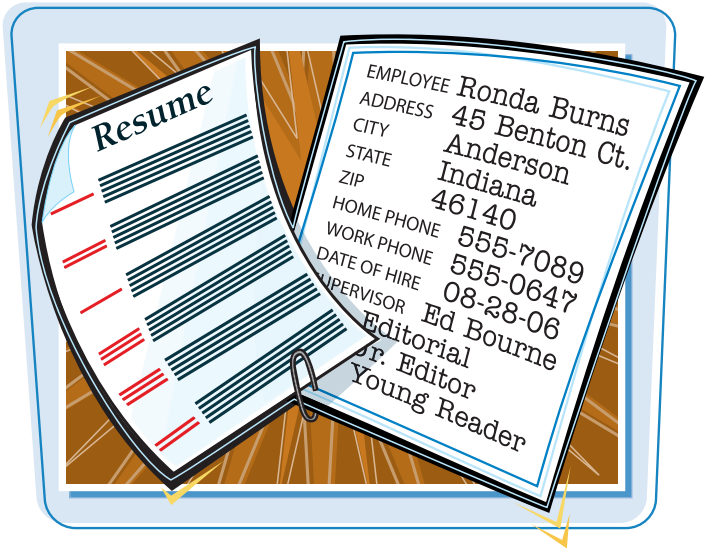






Attach Files to Records

In Access 2007, you can use attachment fields to attach files from other programs to individual records. For example, you may store an employee's résumé along with his or her personnel record. A single record can have multiple attached files.



Attach Files to Records

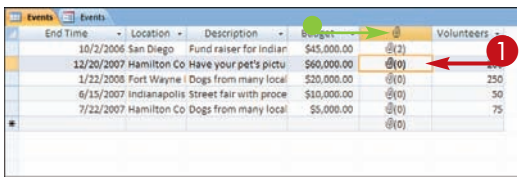
1. Double-click an attachment field.

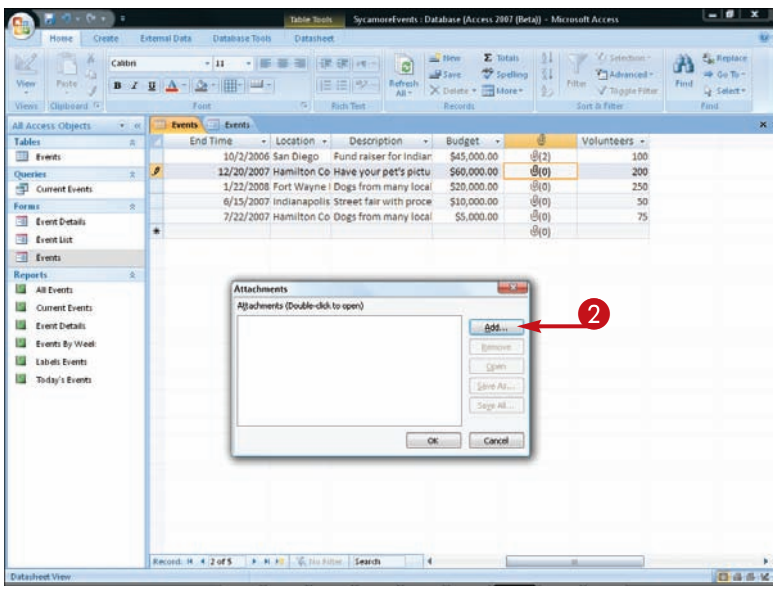
Note: *Attachments can be placed only in attachment fields. To set a field's type to Attachment, see Chapter 4.*

- In a datasheet, an attachment field is indicated by a paper clip. The number in parentheses is the current number of attachments that the field holds.

The Attachments dialog box opens.

2. Click **Add**.





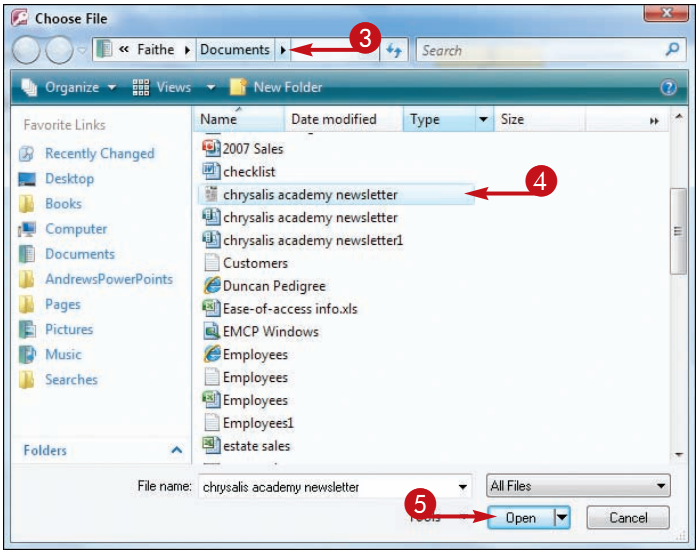
The Choose File dialog box opens.

3. Navigate to the folder or drive where the file is stored.

Note: *If you have Windows XP, the dialog box uses Windows XP–style navigation controls instead of the type shown here.*

4. Click the name of the file that you want to attach.

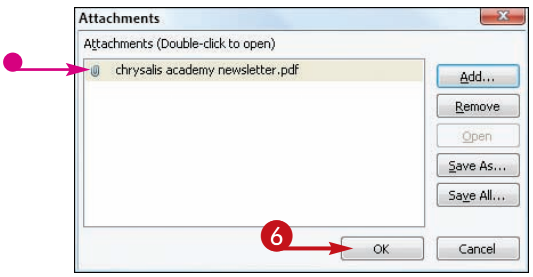
5. Click **Open**.



- The file is added to the list of files in the Attachments dialog box.

  You can repeat steps **2** to **5** to attach more files if necessary.

6. Click **OK**.

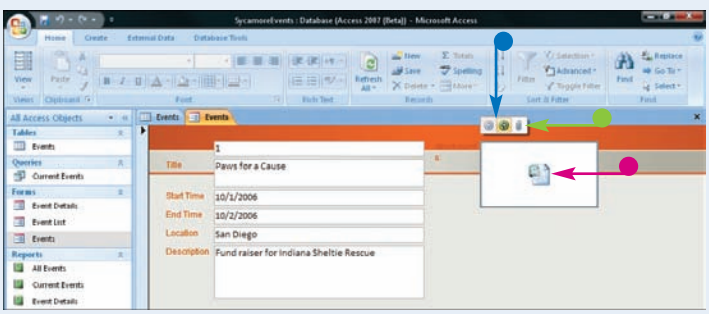


TIP

Can I attach files from a form instead of a datasheet?

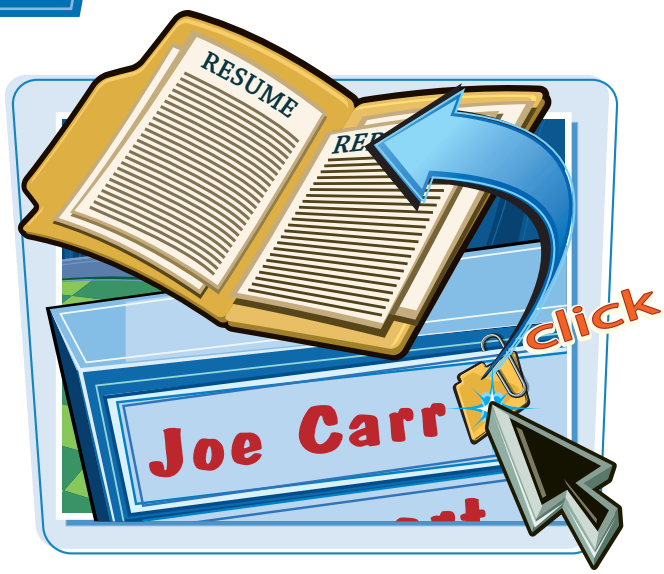
Yes. In a form, an attachment field appears as a box. When selected, it has selection handles and some buttons above it.

- The Attachments button opens the Attachments dialog box, as an alternative to double-clicking the field.
- When the field contains an attachment, an icon for it appears here. You can double-click the icon to open the file.
- When there are multiple attachments, you can move between them with the Previous and Next buttons.



Open, Save, and Remove File Attachments

After you have attached files to a record, you can open those files and review them at any time. You can also save them as separate files outside of Access or remove them from Access.



Open, Save, and Remove File Attachments

OPEN AN ATTACHED FILE IN ITS NATIVE PROGRAM

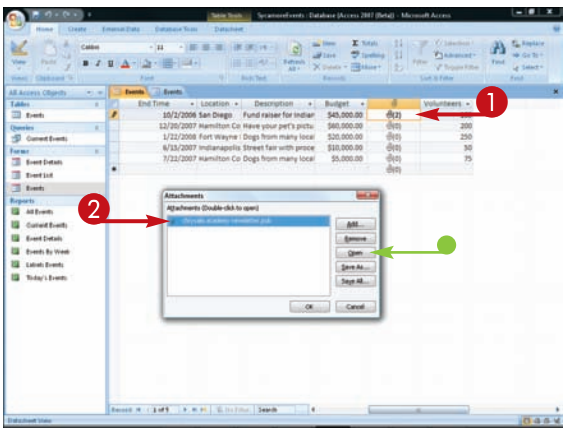
1. Double-click the attachment field that contains the attachment.

   The Attachments dialog box opens.

2. Double-click the attachment.

   It opens in its native program.

- Alternatively, you can click the attachment and click **Open**.

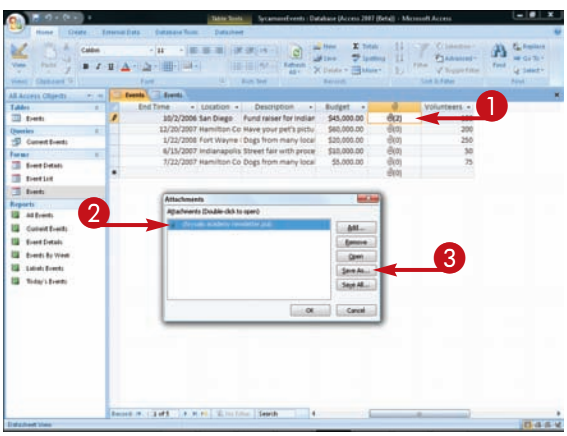


SAVE AN ATTACHMENT OUTSIDE OF ACCESS

1. Double-click the attachment field that contains the attachment.

   The Attachments dialog box opens.

2. Click the attachment.
3. Click **Save As**.



The Save Attachment dialog box opens.

4. Navigate to the folder or drive in which to store the file.

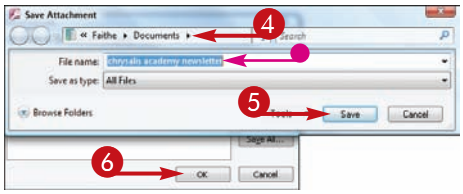
Note: *If you have Windows XP, the dialog box uses Windows XP–style navigation controls instead of the type shown here.*

- You can change the name in the File Name box.

5. Click **Save**.

6. Click **OK** in the Attachments dialog box.

The Attachments dialog box closes.



REMOVE AN ATTACHMENT

1. Double-click the attachment field that contains the attachment.

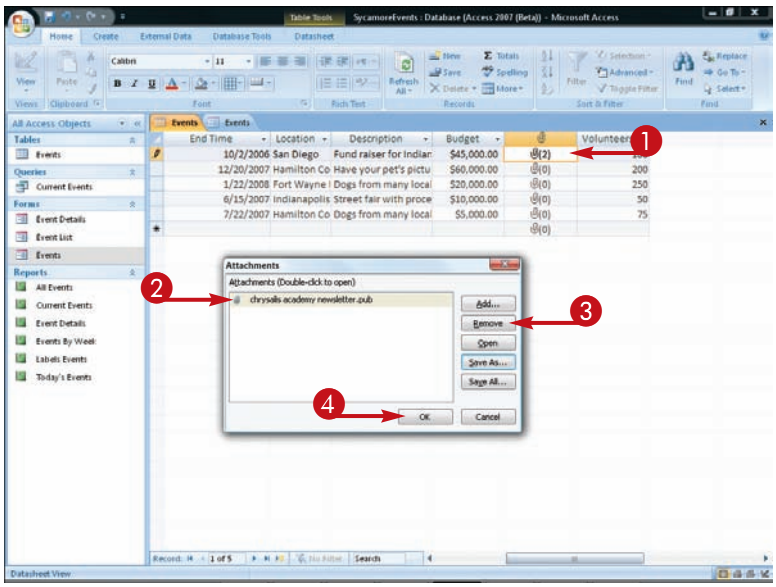
The Attachments dialog box opens.

2. Click the attachment.

3. Click **Remove**.

The attachment is removed from the list.

4. Click **OK**.



TIPS

Are there any disadvantages to using attachments?

Yes, each attachment is embedded in the Access database, so each one increases the size of the Access file. Access compresses attachment files when possible, but they still greatly add to the file size.



What are my options if I do not want to use attachments?

Instead of attaching related documents, you can hyperlink to them. Set up a field's type as Hyperlink (see Chapter 4) and then create a link to the original file rather than embed the whole file into the database. The only disadvantage of this method is that if the original file is moved, you must update the link in Access.



Insert an OLE Object

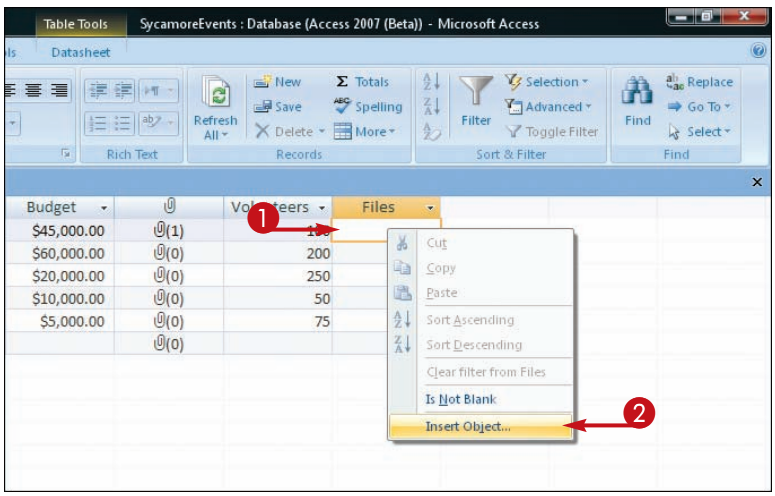
You can use the object linking and embedding (OLE) field type to store data files of various types. An OLE field has one advantage over an attachment field: It can maintain a dynamic link to the original copy so that the version in Access updates automatically.

To insert objects, you must set the field up as an OLE data type; you will learn how to do this in Chapter 4.



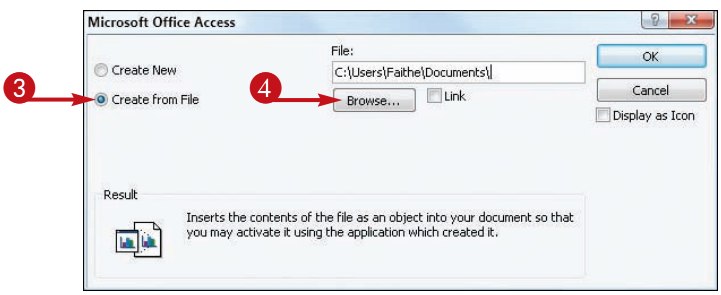
Insert an OLE Object

1. Right-click a field that has the OLE data type.
2. Click **Insert Object.**



The Microsoft Office Access dialog box opens.

3. Click **Create from File**.
4. Click **Browse**.



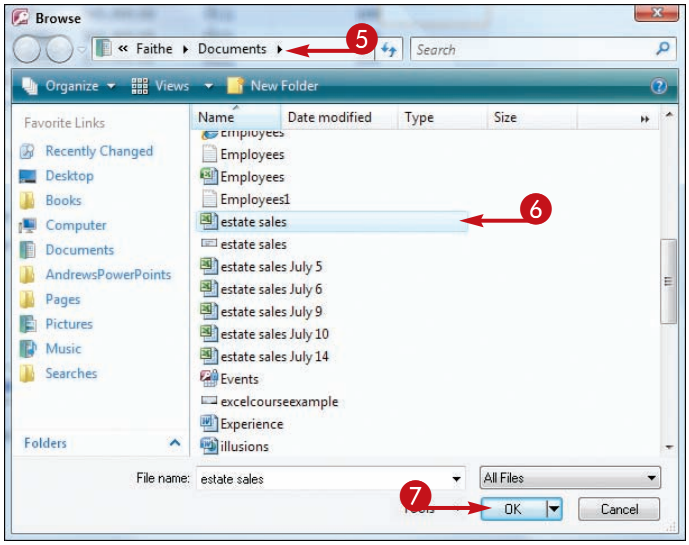
The Browse dialog box opens.

5 Navigate to the folder or drive containing the file to embed.

6 Click the file.

7 Click **OK**.

The Browse dialog box closes.

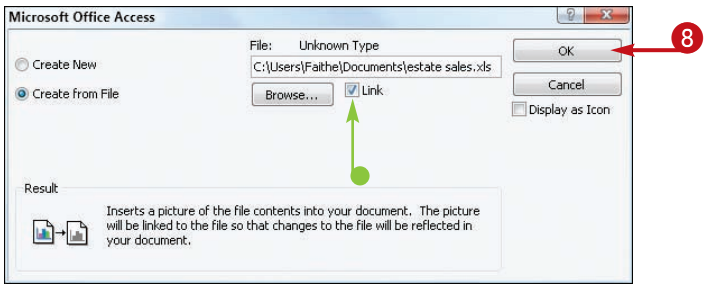


- If you want to create a link, click the **Link** check box (changes to).

Note: *If you create a link, the copy in Access will be updated when the original updates; otherwise, no link is maintained between the copies.*

8 Click **OK**.

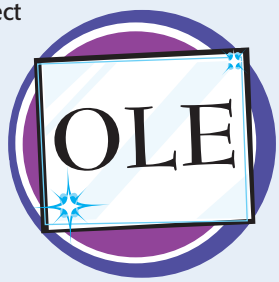
The field shows the type of file that you chose.



TIPS

What does the Create New option do?

Create New lets you create a new embedded object using virtually any program on your PC. After clicking **Create New**, a list of object types appears. Click the type that you want and click **OK**.



Why would I want to use Display as Icon?

That option is primarily for use in other programs, not Access. In Access in Datasheet view, the OLE content appears with the text name of the file type, regardless of whether this check box is marked.



Open, Edit, and Remove OLE Objects

After inserting a file into an OLE field, you can open it for editing. If it is linked, the original opens; otherwise, the copy embedded in Access opens. You can then edit the file. You can also remove an OLE object from the field. This deletes the embedded copy in Access but not the original.

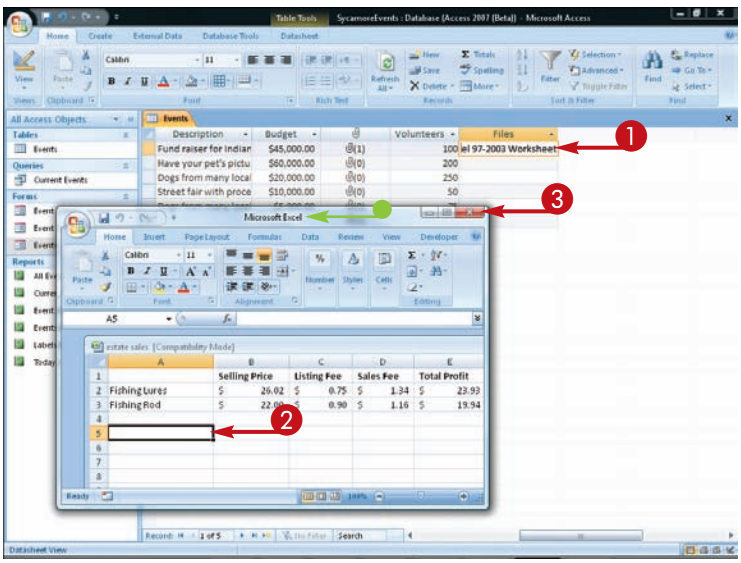


Open, Edit, and Remove OLE Objects

OPEN AND EDIT A FILE IN AN OLE FIELD

1. Double-click a field containing an OLE object.
   - The object opens in the application that is associated with its type.
2. Make any changes needed to the file.
3. Click the close button in the OLE object's application window to close it.

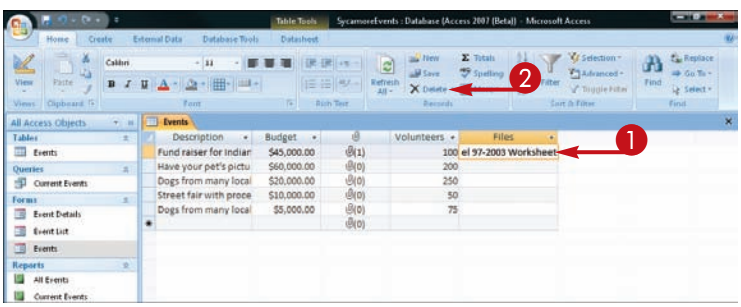
   Your changes are saved automatically; you do not have to save in the OLE object's application.



REMOVE AN OLE OBJECT FROM A FIELD

1. Click the field containing the object.
2. On the Home tab, click **Delete**.

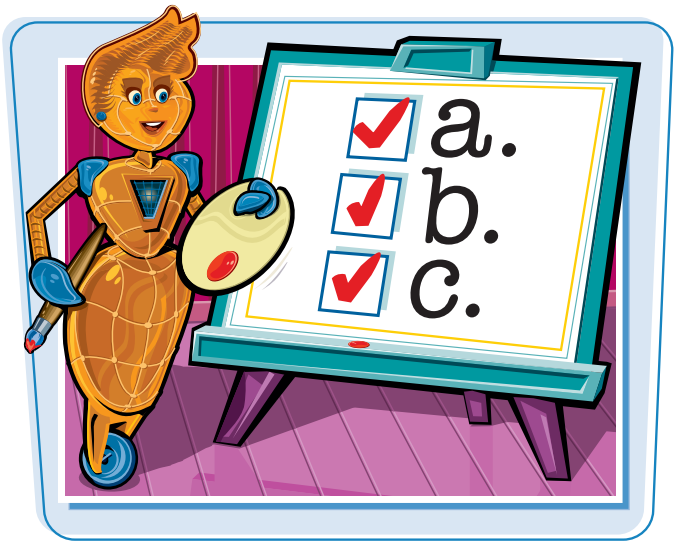
   You can also press the Delete key on the keyboard.



Enter Data in a Multivalued Field

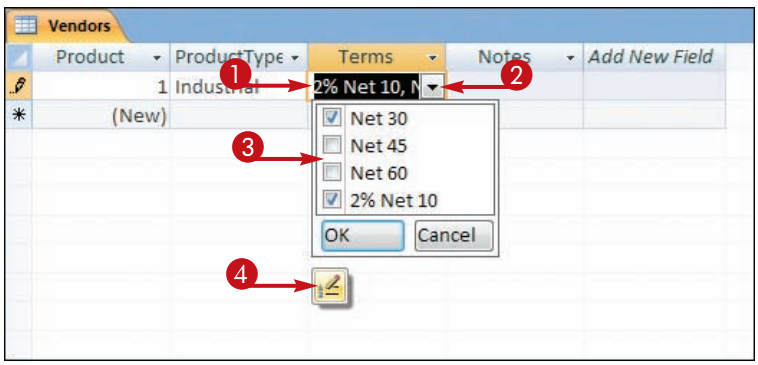
A new feature in Access 2007 is the ability to store multiple values in a single field. Instead of typing in the field, you open a list and place a check mark next to each value to select.

To enter multiple values, the field must be set up with the Lookup Wizard to accept multiple values; you will learn how to do this in Chapter 5.



Enter Data in a Multivalued Field

1. Click in a field that supports multiple values.
2. Click here to open the menu.
3. Click next to each value to select (☐ changes to ☑).
4. To enter a new value, click here.



The Edit List Items dialog box opens.

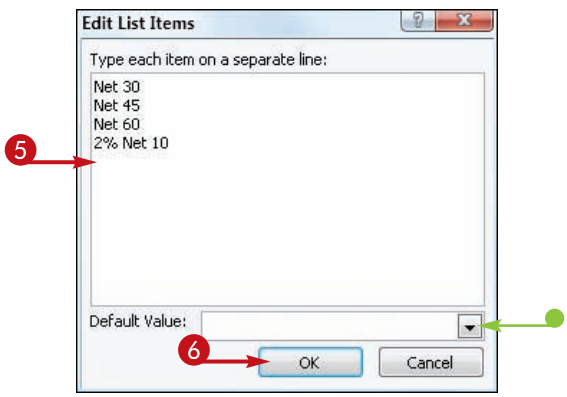
5. Click in the list box and type a new value.

Note: *Place each new value on a separate line.*

- You can click here and select a default value.

6. Click **OK**.

The new value will appear the next time that you click to open the menu.



Delete Records

You can delete records either individually or in groups. Deleted records are gone permanently; there is no retrieving them, so delete with care.



Delete Records

1. Click to the left of the record to select it.

   To select multiple contiguous records, click the first one and then hold down Shift as you click the last one.

   To select multiple noncontiguous records, hold down Ctrl as you click each one.

2. Click **Delete** on the Home tab.

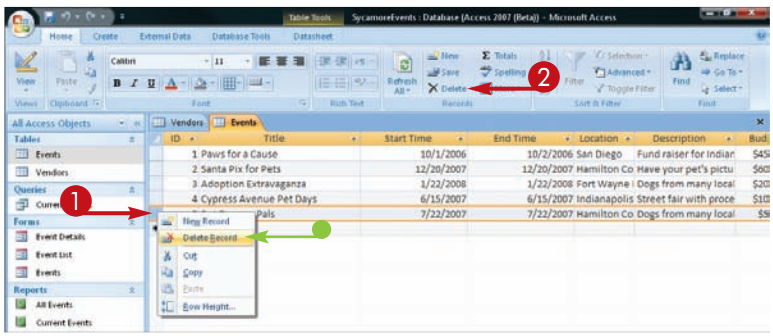
   - You can also right-click the record and click **Delete Record**.

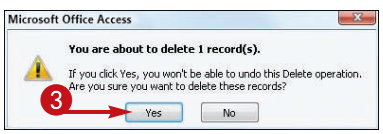
     You can also press the Delete key on the keyboard.

     A delete confirmation box appears.

3. Click **Yes**.

   The record(s) is deleted.

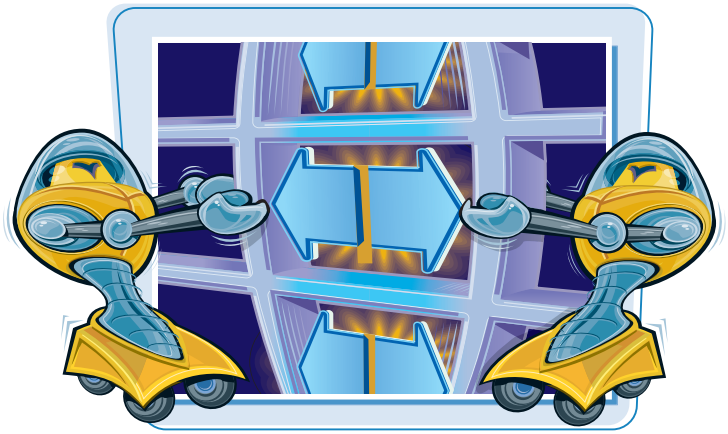




Note: *You can also delete records from a form. To select a record in a form, click the thin vertical bar to the left of the form. To select multiple contiguous records, hold down* Shift *and click the Next Record or Previous Record button to extend the selection.*

Resize Datasheet Columns and Rows

You can adjust the sizes of the columns in a datasheet to better display the data. For example, you may want to widen a column that contains long field entries so that the entire entries are visible. You can also adjust the row height to create more space between records.



Resize Datasheet Columns and Rows

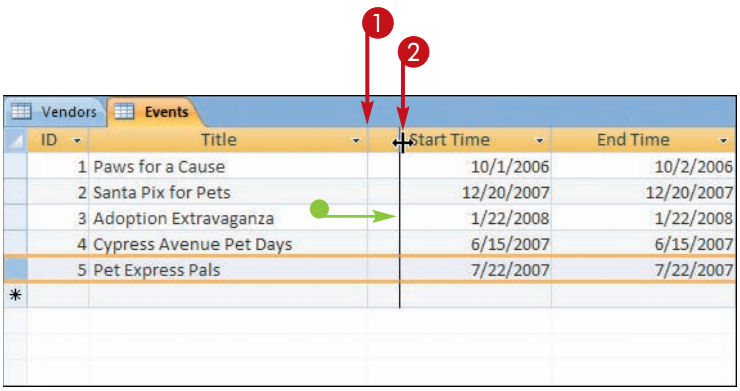
CHANGE A COLUMN'S WIDTH

1. Position the mouse pointer in the heading area, to the right of the column to adjust.

   The mouse pointer changes to a double-headed arrow.

2. Drag to the left or right to adjust the width of the column.

- A vertical line appears, showing where the new width will be.



CHANGE THE HEIGHT FOR ALL ROWS

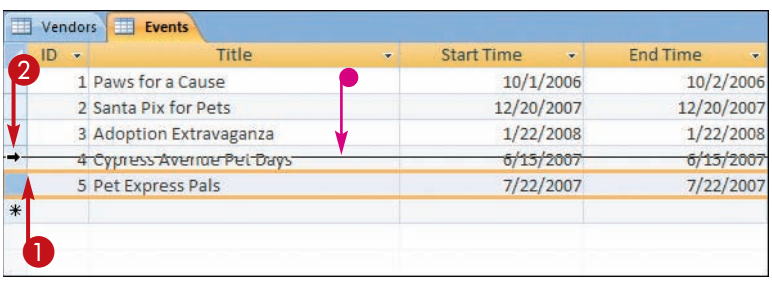
1. Position the mouse pointer to the left of the records, on the divider between any two rows.

   The mouse pointer changes to a double-headed arrow.

Note: *All rows will be changed equally; you cannot adjust one row separately from the others.*

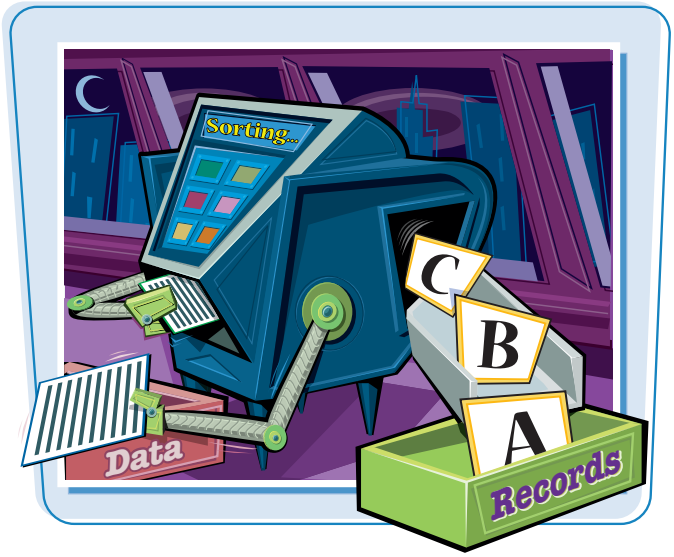
2. Drag up or down to adjust the row height.

- A horizontal line appears, showing where the new height will be.



Sort Records

One way to quickly find a particular record is to reorder, or *sort*, the records by a particular field. You can sort by any field in either ascending (A to Z) or descending (Z to A) order. You can also do a multifield sort that specifies what field to use in the event of a "tie" in the primary sort field.



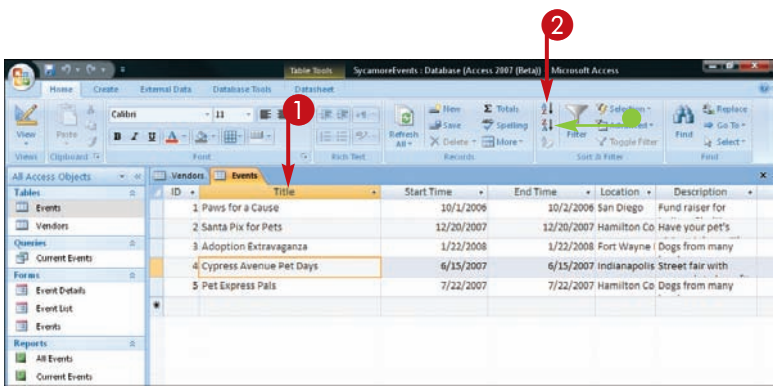
Sort Records

SORT RECORDS BY A SINGLE FIELD (THE RIBBON METHOD)

1. Click anywhere in the field by which you want to sort.
2. Click the Ascending button ( ) on the Home tab to sort in ascending order.

- Alternatively, you can sort in descending order by clicking the Descending button ( ).

The data is sorted.

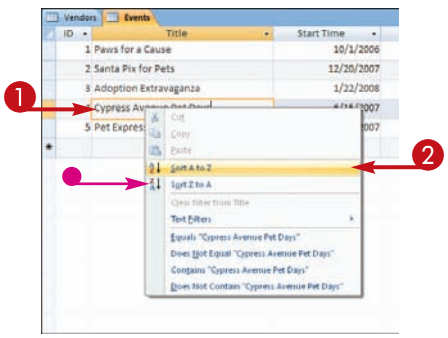


SORT RECORDS BY A SINGLE FIELD (THE RIGHT-CLICK METHOD)

1. Right-click anywhere in the column by which you want to sort.
2. Click **Sort A to Z** to sort in ascending order.

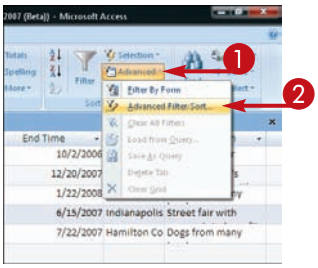
- Alternatively, you can sort in descending order by clicking **Sort Z to A**.

The data is sorted.



SORT RECORDS BY MULTIPLE FIELDS

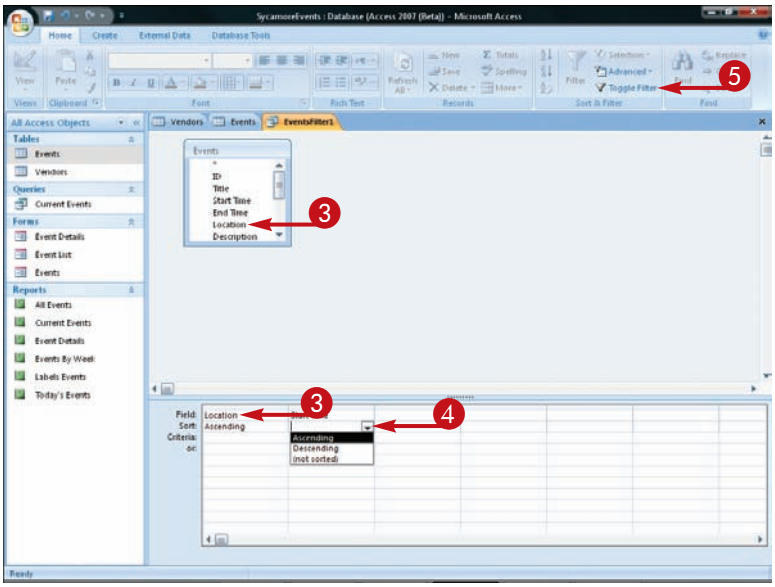
1. Click **Advanced** on the Home tab.
2. Click **Advanced Filter/Sort.**



A query grid appears.

3. Drag the fields to sort by into the grid, in the order by which you want to apply them.
4. For each field in the grid, click here and then select **Ascending** or **Descending**.
5. Click **Toggle Filter**.

The datasheet is sorted using the fields that you specified.



TIPS

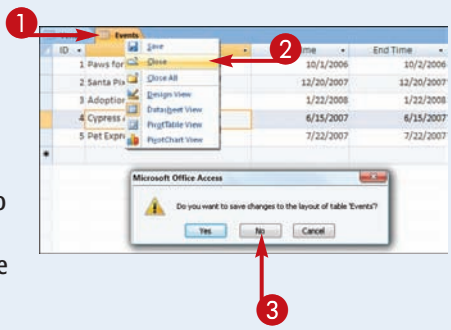
How do I sort records in a form?

All the same techniques for sorting a datasheet also work in a form, even though most forms show only one record at a time. The sort affects the order in which records appear when you move among them with the Next Record and Previous Record buttons. The record number for each record stays the same.

How do I remove a sort?

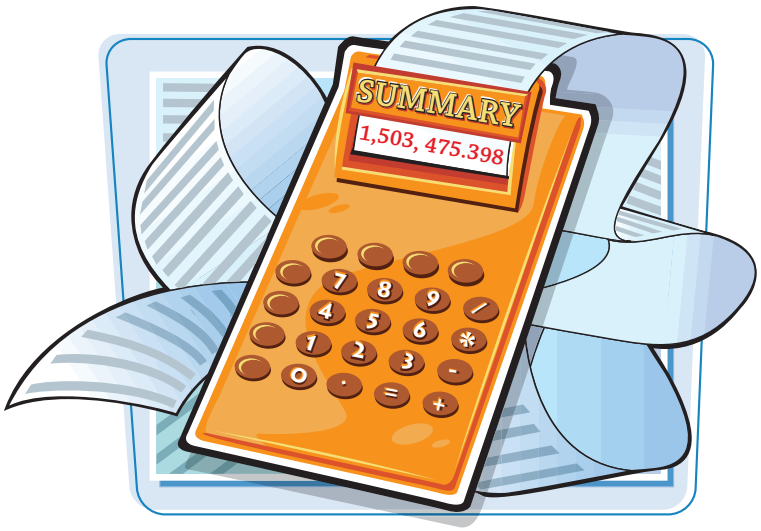
Press Ctrl + Z to undo the last action (the sort). If you have performed other actions since the sort, close the datasheet without saving your changes:

1. Right-click the datasheet tab.
2. Click **Close**.
3. At the prompt to save changes to the design of the table, click **No**.



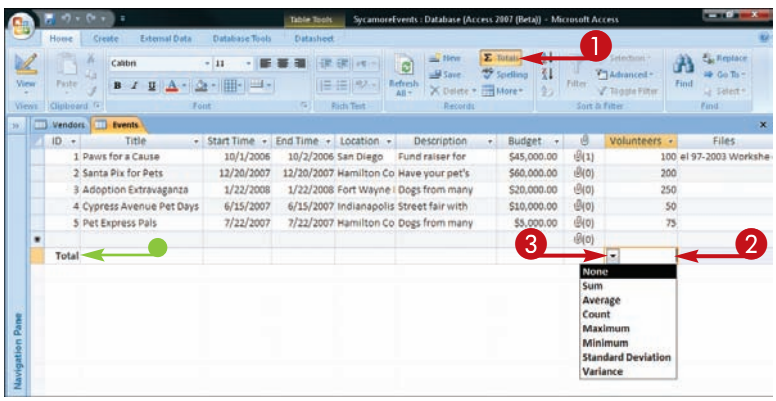
Display Summary Statistics

One reason that people create reports and queries is to extract summary statistics about data, such as the sum or average of the values in certain fields. A new feature in Access 2007 is the ability to display such information directly on the datasheet, without having to create a query or report.

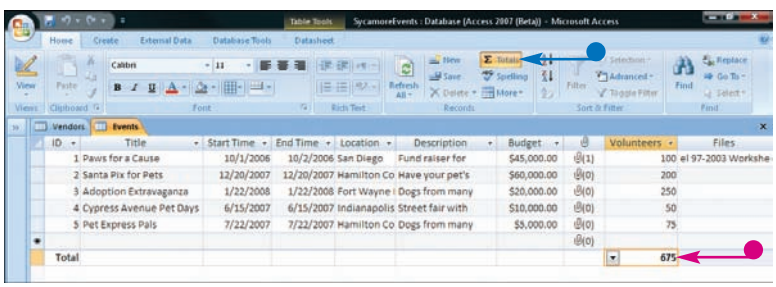


Display Summary Statistics

1. Click **Totals** on the Home tab.
   - The Total row appears below the records.
2. Click in the Total row for the field that you want.
3. Click here and select the statistic that you want.

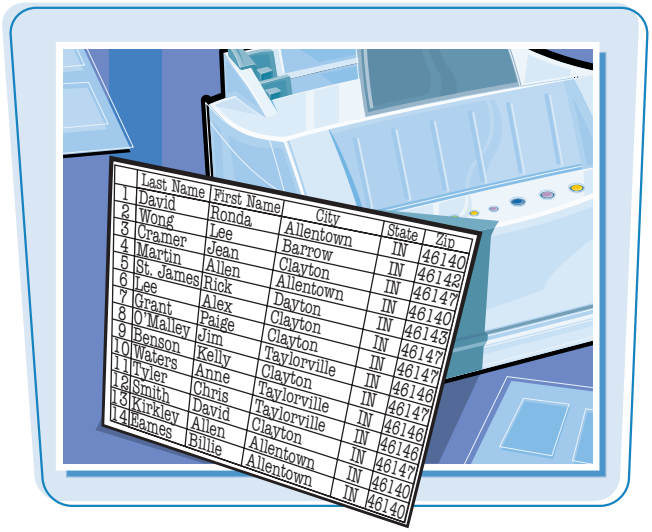


   - The information appears in the Total row.
4. Repeat steps **2** to **3** for each additional field for which you want to display a statistic.
   - To hide the Total row again, you can click **Totals**.



Print a Datasheet or Form

You can print a quick copy of a datasheet or form any time.

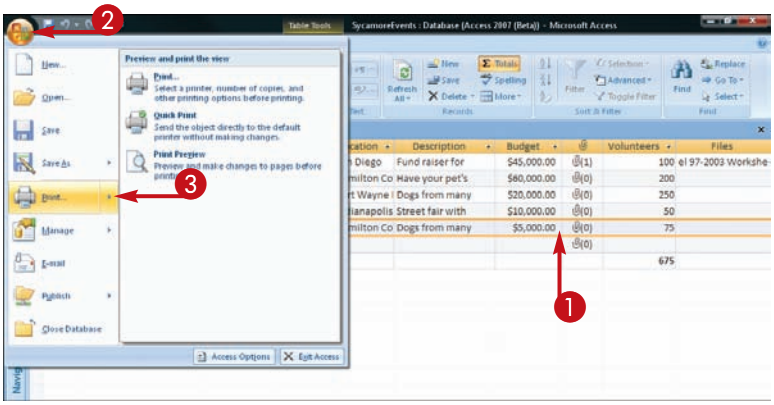


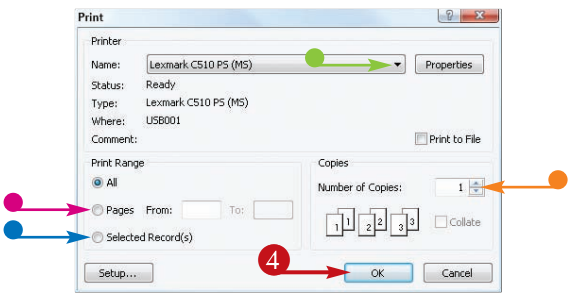
Printed datasheets and forms are not formatted for printing. They are useful for examining data, but you will probably want to create reports for more attractive printouts to distribute to others.

Print a Datasheet or Form

1. To print only certain records, select them.
2. Click .
3. Click **Print**.

   The Print dialog box opens.





- You can click here and select a different printer.
- You can click here and enter a page range to print only certain pages.
- You can click here to print only the selected record(s).
- You can type a number here to print multiple copies.

4. Click **OK**.

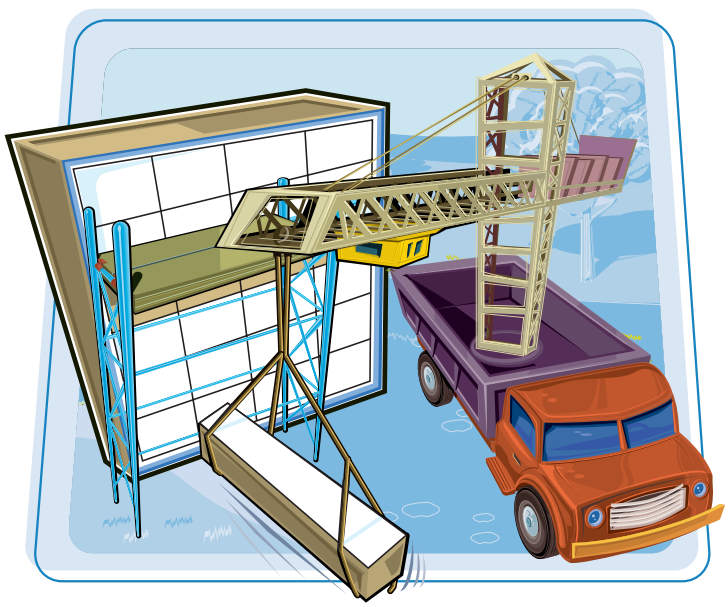
   The datasheet or form is printed.

***Note:** For a single copy of the entire datasheet or form, you can click the Print button ( ) on the Quick Access toolbar.*

CHAPTER

3

Working with Tables

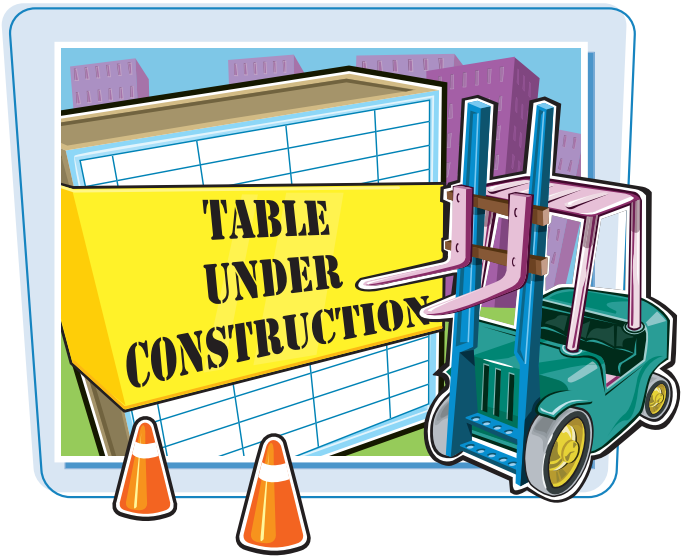


Tables form the basis of any database. A table's structure defines the fields and their properties and specifies how data should be entered. In this chapter, you will learn to create and manage tables.

Plan Effective Tables 42
Create a Table from a Template 44
Save a Table 45
Create a Table in Datasheet View 46
Create a Table by Copying Another Table's Structure 47
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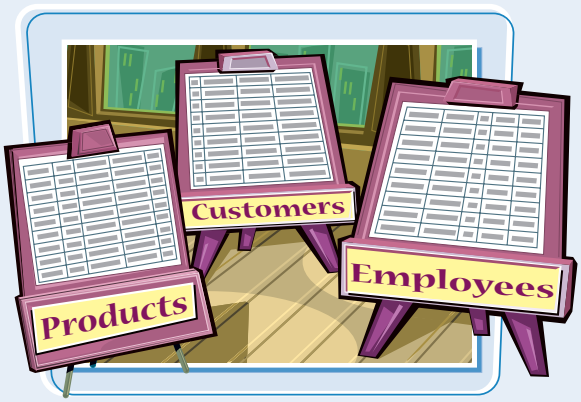
Plan Effective Tables

As a database designer, you have the opportunity to create tables in your database that match your storage needs. You can create tables based on templates that Access provides or create new tables from scratch. Before creating the tables, however, you should spend some time thinking about what type of data each table should contain.



Choose One Purpose per Table

Each table should have a single, well-defined purpose. For example, a table may store customer contact information, a product inventory, or personnel records. Do not worry that the information you need to work with together is stored in different tables because you can easily create queries and reports that summarize and combine data from any number of tables.



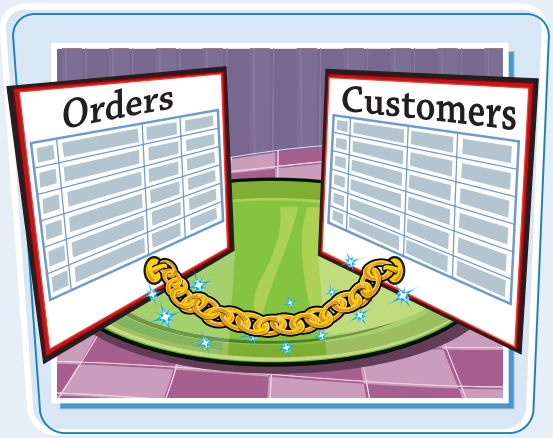
Avoid Redundant Data Entry

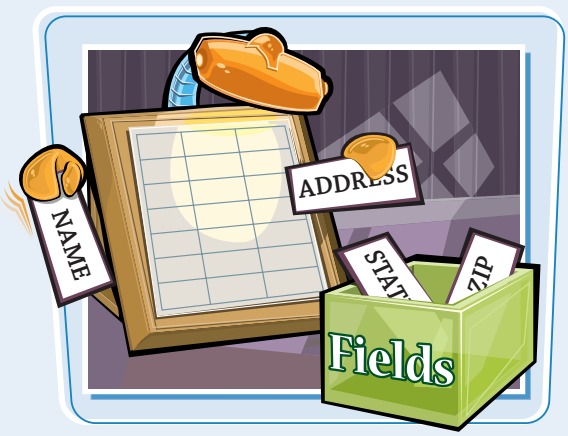
Combining multiple purposes in a single table results in needless duplication and increases the chance of data-entry error. For example, suppose that your Orders table also contained fields for the customer's shipping address. Every time a repeat customer placed an order, you would need to reenter the shipping address. By placing customer shipping information in a separate Customers table, you eliminate the duplication.



Plan for Relationships

Think about how tables will be related. For example, the Orders and Customers tables may be related to display a list of all the orders placed by a certain customer. You could also relate the Employees and Orders tables to display a list of orders taken by certain employees. It may be helpful to draw a diagram to envision the relationships needed.



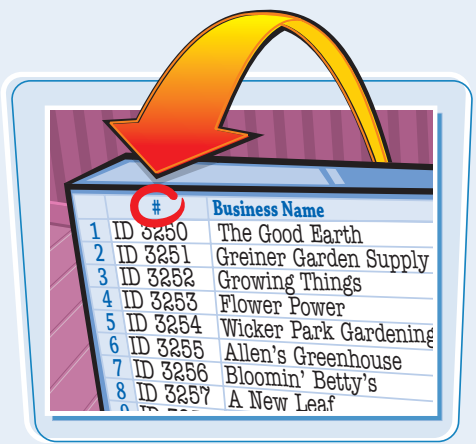


Decide on the Fields to Use

If you may need to sort or filter by a certain type of information, make it a separate field. For example, to sort a Customers table by last name, you need separate fields for First Name and Last Name. And if you ever plan on addressing your customers with Mr., Ms., or Miss, you need a field that contains that prefix.

Plan to Differentiate between Records

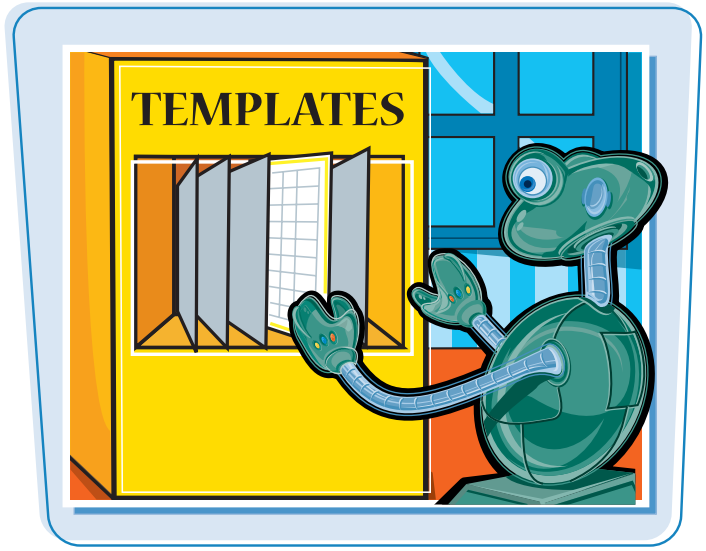
In most tables, at least one field should be unique to each record to differentiate between them. For example, the Customers table may have a unique Customer ID field. You could then use the number to refer to that customer in relationships to other tables. For example, each order could be positively matched up with a particular customer by customer ID.



#	Business Name
1	The Good Earth
2	Greiner Garden Supply
3	Growing Things
4	Flower Power
5	Wicker Park Gardening
6	Allen's Greenhouse
7	Bloomin' Betty's
8	A New Leaf

Create a Table from a Template

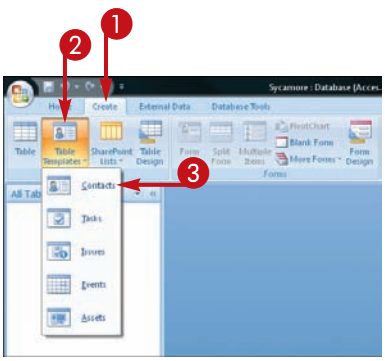
You can create a table using one of the table templates in Access. Each template contains a pre-created set of fields, so you do not have to create fields manually. Templates work well when you need a fairly standard table with common fields.



Create a Table from a Template

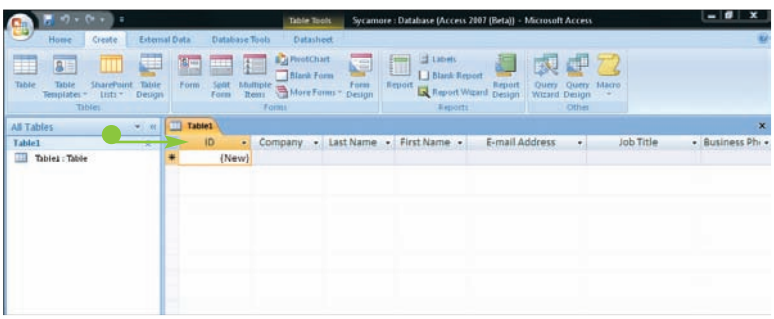
1. Click the **Create** tab.
2. Click **Table Templates**.

   A drop-down list appears of template types available.
3. Click the template type that you want.



A new table appears in Datasheet view.

- The new table contains fields that are typically needed for that type of table.



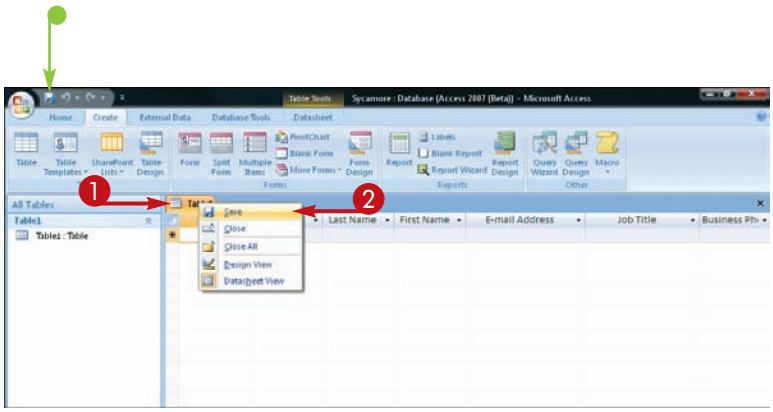
Save a Table

After creating a new table, you must save the table to make it a permanent part of the database. When you save a table, you give it a name that will help you remember its purpose.



Save a Table

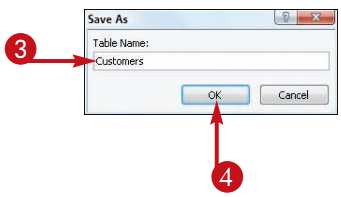
1. Right-click the table's tab.
2. Click **Save**.
   - You can also click the Save button ( ) on the Quick Access toolbar.



The Save As dialog box opens.

3. Type a name for the table.

Note: *Access allows table names to include spaces, but you should avoid using spaces to make the names easier to refer to in some types of queries. Use an underscore symbol instead.*



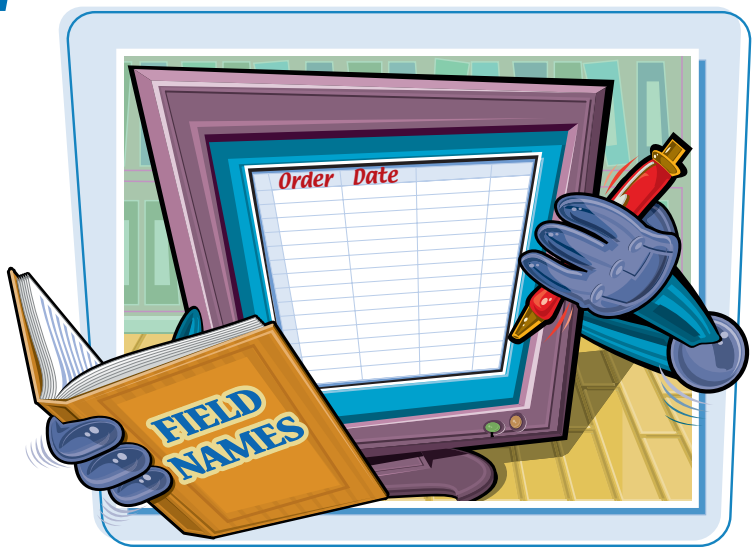
4. Click **OK**.

The table remains open, and its new name appears on its tab and on the navigation bar.

You can either leave the table open to work with it, or you can close it.

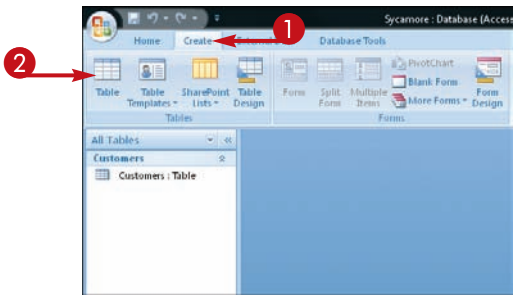
Create a Table in Datasheet View

You can create a table from Datasheet view, adding new fields by simply typing the field names into the column heading placeholders. This method works well when you need a quick table consisting of just a few fields.



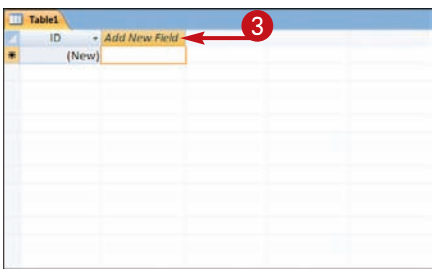
Create a Table in Datasheet View

1. Click the **Create** tab.
2. Click **Table**.



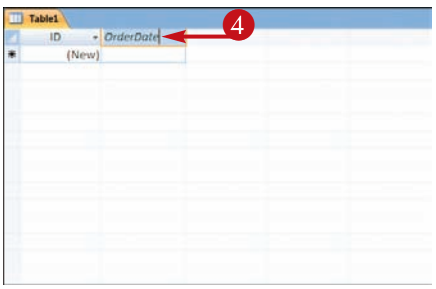
A new datasheet opens with an ID field and an Add New Field placeholder.

3. Double-click the **Add New Field** placeholder.



The box becomes blank, ready to accept your new entry.

4. Type the name for the new field.
5. Press Enter to accept the field name.



The insertion point moves to the next field name box to the right.

6. Repeat steps **4** to **5** as needed to finish entering field names.

You can either leave the table open to work with it, or you can close it.

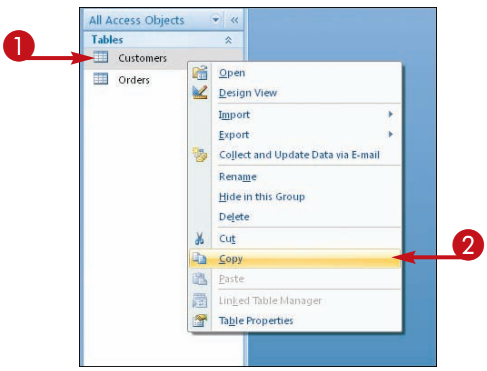
Create a Table by Copying Another Table's Structure

When you need to have two or more tables with the same or very similar fields, you can save some time by creating one and then copying it to create the other. After creating the copy, you can make any minor changes needed to it to differentiate it from the original.



Create a Table by Copying Another Table's Structure

1. In the Navigation pane, right-click the original table.
2. Click **Copy**.



3. Right-click an empty area of the Navigation pane.
4. Click **Paste**.

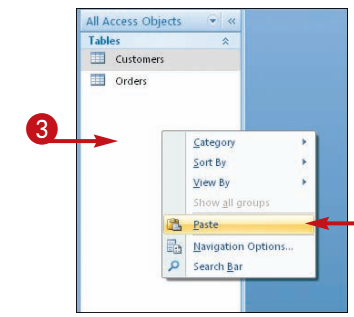
   The Paste Table As dialog box opens.
5. Type a name for the copy, replacing the default name.

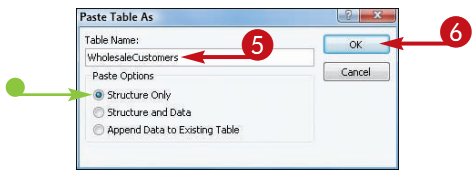
   - Optionally, you can copy only the structure by clicking **Structure Only** (◉ changes to ◉).

Note: *Otherwise the copy will contain all the data too.*

6. Click **OK**.

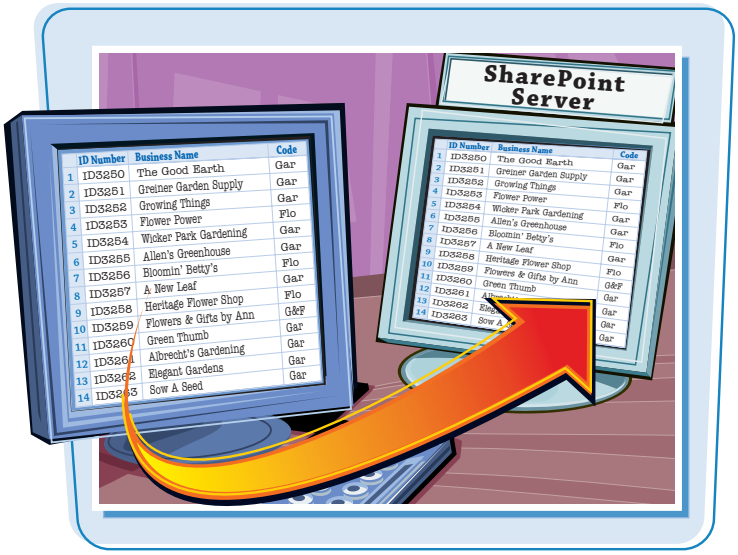
   The copy of the table appears in the Navigation pane.





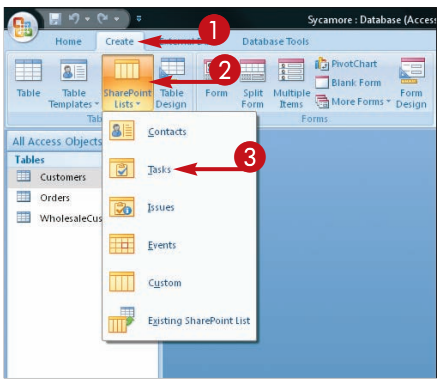
Create a SharePoint List

A *SharePoint server* is a type of data-sharing server that many companies use to enable employees and clients to share data. If your company has one of these, you can create tables directly on that server so that other people can access the data in the table.



Create a SharePoint List

1. Click the **Create** tab.
2. Click **SharePoint Lists**.
3. Click the template that you want.



The Create New List dialog box opens.

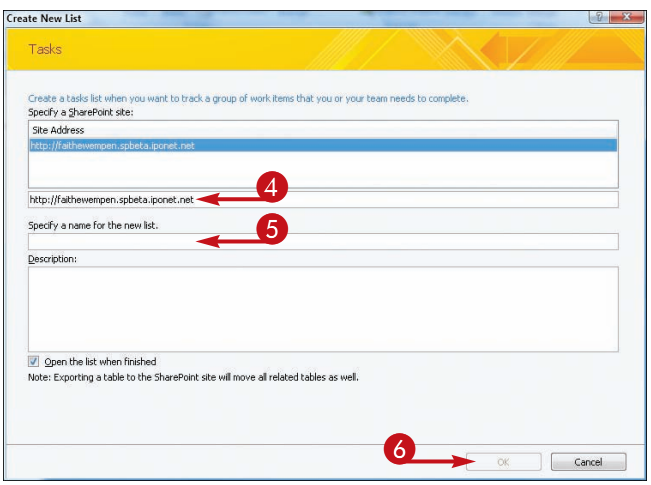
4. Type the address of a SharePoint site.

Note: *If you have previously saved to a SharePoint site on your PC, you can select from a list of previous sites instead of typing the address.*

5. Type a name for the new list.

   The default name is the same as the SharePoint site.

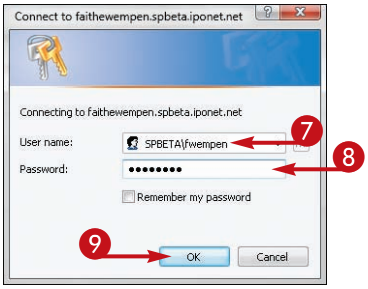
6. Click **OK**.



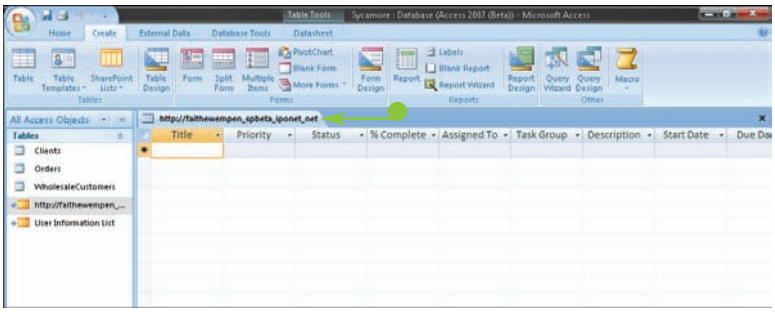
A login dialog box opens.

If prompted:

7. Type your username in the User Name box.
8. Type your password in the Password box.
9. Click **OK**.



- The new list appears in a datasheet.



Note: *You can work with it just like a regular table, except it is stored on the SharePoint site, not on your local PC.*

TIPS

Why do other SharePoint lists appear on my Tables list?

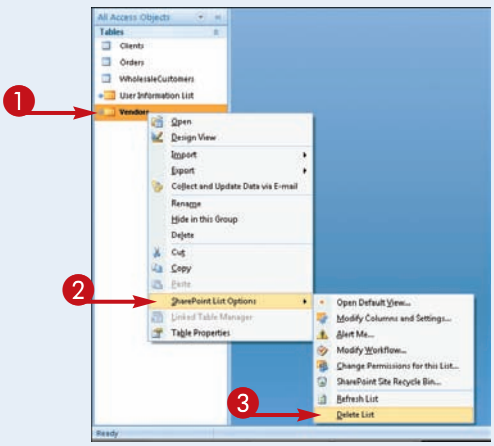
When connected to a SharePoint site, any other available lists from that server will appear in Access automatically. You may also see a User Information List, which is a database containing information about the user accounts that are authorized to access the SharePoint site.



How can I delete a SharePoint list?

First, close the SharePoint list if it is open in Access.

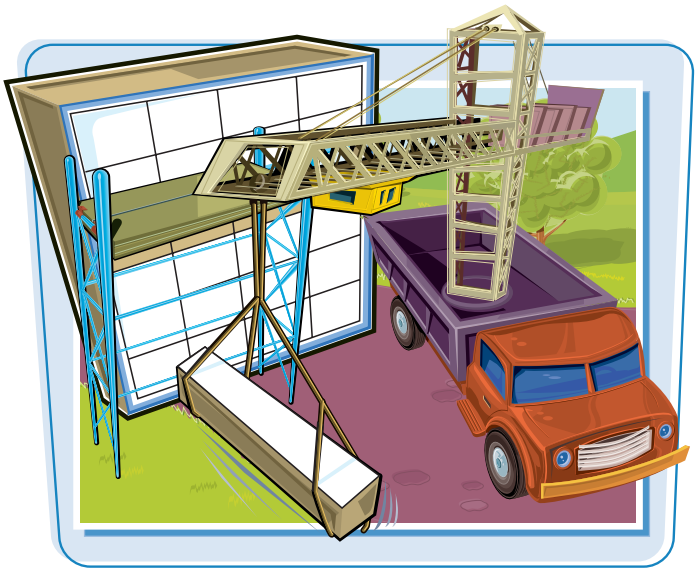
1. Right-click the list.
2. Click **SharePoint List Options**.
3. Click **Delete List**.
4. In the confirmation box, click **Yes**.



Create a Table in Design View

You can construct a table in Design view to get the exact fields that you want. In Design view, you can create and arrange fields, specify field types and properties, and enter field descriptions.

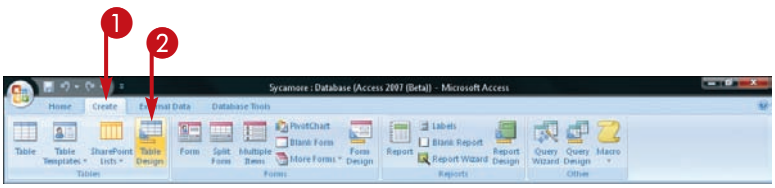
Chapter 4 covers modifying a table in Design view in more detail.



Create a Table in Design View

1. Click the **Create** tab.
2. Click **Table Design.**

   Table Design view opens with a new table started.



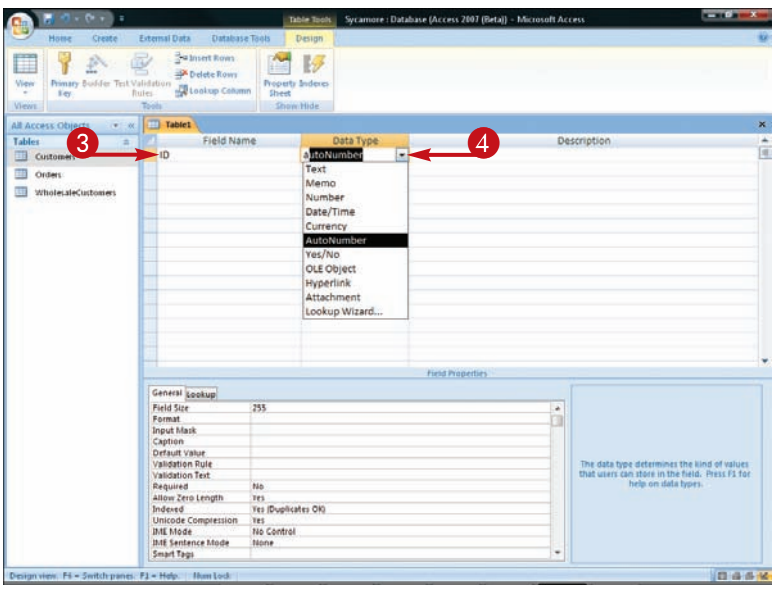
3. Click in the first empty cell beneath Field Name and type a field name.

Note: *It is good design practice to begin with an ID field that will contain a unique value for each record.*

4. Click here and select a data type.

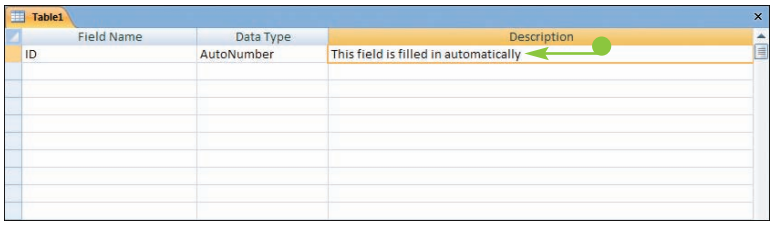
   For a detailed explanation of the data types, see Chapter 4.

   You can also press Tab to move from one column to the next.



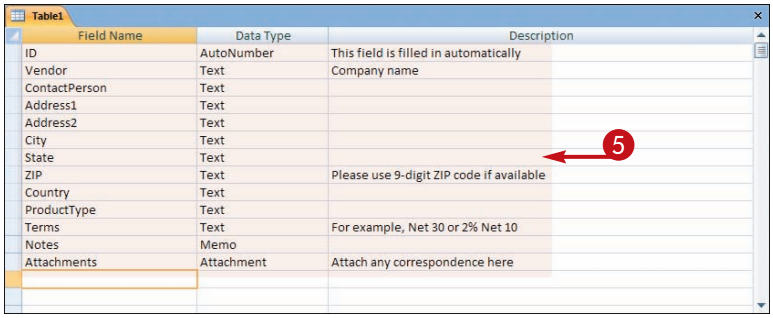
- You can click in the Description column and type a description of the field.

Note: *Descriptions are not usually necessary unless the purpose of the field is not obvious from its name.*



5 Repeat steps **3** to **4** to create additional fields as needed.

See the section "Set the Primary or Composite Key" to set up the primary key for the table.



TIPS

Is it always necessary to start with an ID field?

You should have one field containing unique data for each record, but it does not have to be named ID. If you have your own numbering scheme for this unique field, set the data type to accommodate it. But if you do not already have a scheme, use AutoNumber to save you some time.



Why can I not use spaces in the field names?

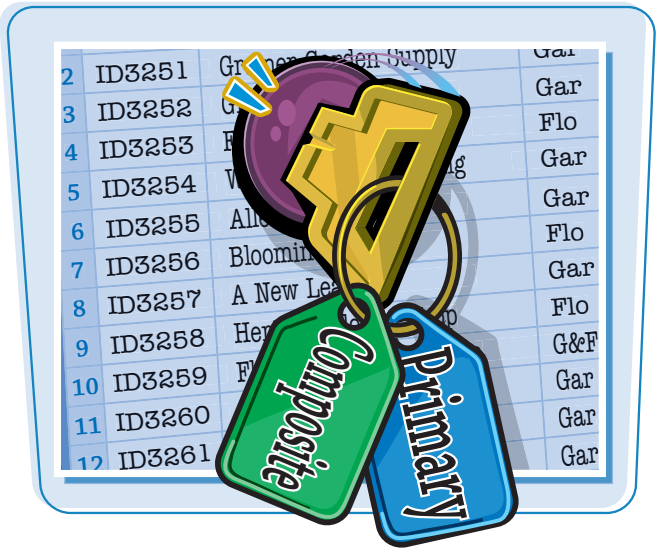
You can use spaces if you want, but it makes it harder to refer to the fields when you create functions and write complex query specifications. It is better to get into the habit of not using spaces.

You can simulate spaces using the underscore character. You can also specify a caption for the field, as explained in Chapter 4.



Understanding Primary and Composite Keys

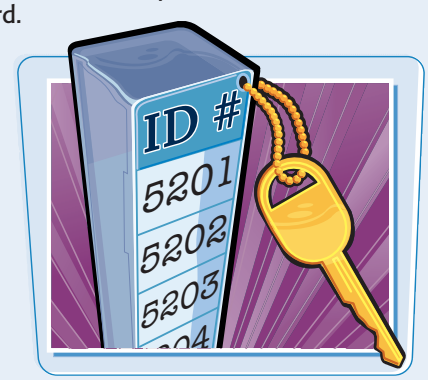
The *primary key* is the field by which each record will be uniquely identified, and by which relationships between tables can be created. When there is more than one field designated as the primary key, it is called a *composite key*.



Which Field?

Traditionally, the first field in the table is the primary key. Sticking with this convention makes it easy to browse and sort records by their primary key field. You may use any field you like for it, however. You can use an AutoNumber field to allow Access to assign numbering for you, or you can use a Number or Text field.

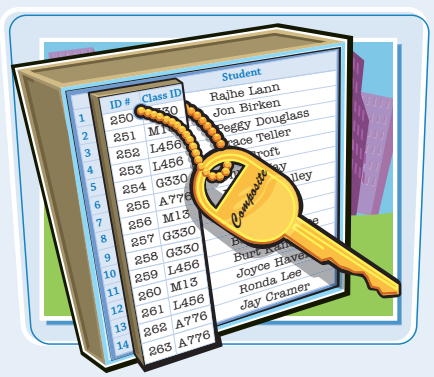
The only hard-and-fast rule is that the field contain a unique value for each record. The primary key field cannot be left blank, nor duplicate the value of another record.



Composite Keys

In rare cases, a single field may not uniquely identify each record. For example, suppose you have a table that records which students have taken which classes. It has two fields in it: StudentID and ClassID. Neither of those fields is unique for each record, but the combination of the two is unique for each record.

In those situations, you may need to set a multifield primary key (also called a *composite key)*, in which each record must have a unique combination of entries in those fields.



Set the Primary or Composite Key

It is fairly simple to set a primary or composite key. A primary or composite key is not required for every table, but it is highly recommended.



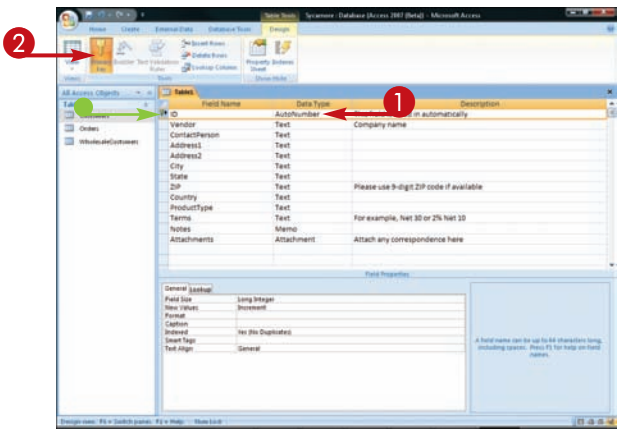
If you try to save or close a table without a primary or composite key, Access displays a warning box.

Set the Primary or Composite Key

SET A SINGLE PRIMARY KEY

1. In Table Design view, click in the row for the field that you want to set as the primary key.
2. Click **Primary Key**.
   - A key symbol appears to the left of the field.

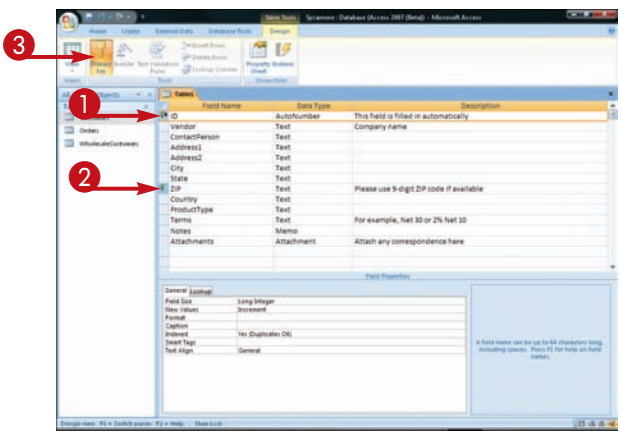
Note: *The Primary Key symbol is an on/off toggle; click it to remove it.*



SET A MULTIFIELD (COMPOSITE) KEY

1. In Table Design view, click to the left of first field that you want to include.
2. Hold down Ctrl and click to the left of additional fields that you want to include.
3. Click **Primary Key**.

   A key symbol appears to the left of each of the chosen fields.



Rename a Table

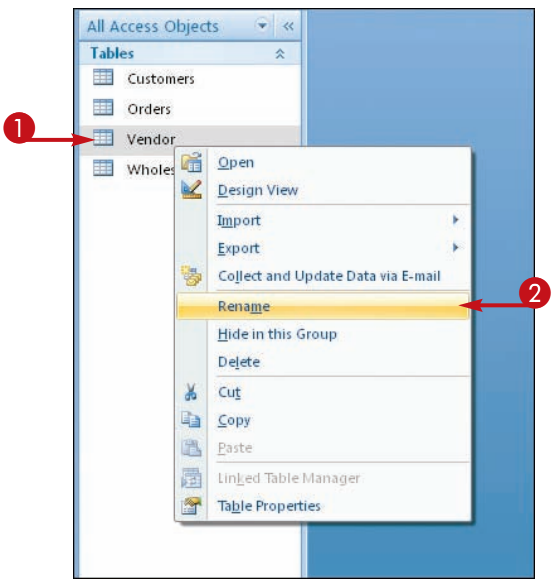
You can rename a table at any time. Access automatically updates all references to the table throughout the database, so any forms, reports, or queries based on that table continue to work.



Rename a Table

1. In the Navigation pane, right-click the table.
2. Click **Rename**.

   The insertion point moves into the existing name.



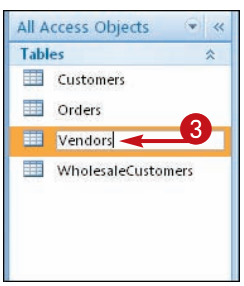
3. Edit the name as needed.

   You can use the Backspace and Delete keys to delete one character to the left or right of the insertion point, respectively.

4. Press Enter.

   You can also click away from the name instead.

   The new name appears on the table.



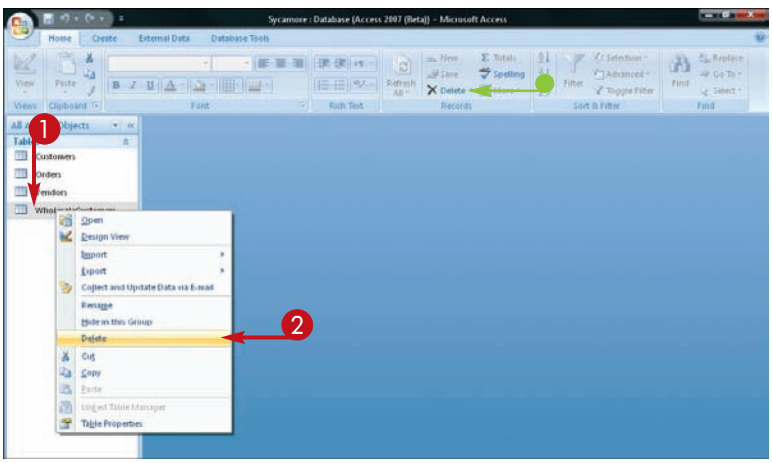
Delete a Table

You can delete any table from your database, even tables that contain records. Be careful not to delete anything that you need to keep because it is not possible to undo a table deletion.



Delete a Table

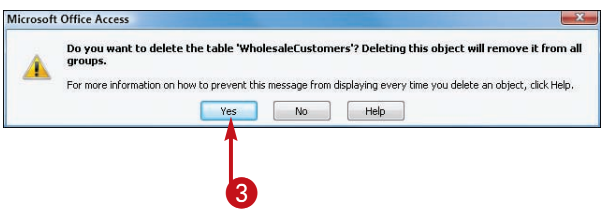
1. Right-click the table name.
2. Click **Delete**.
   - You can also click **Delete** on the Home tab.



A confirmation dialog box opens.

3. Click **Yes**.

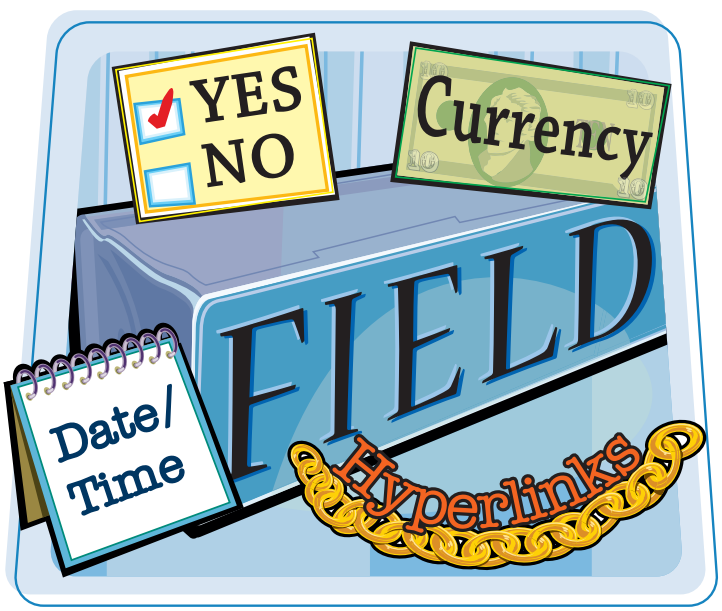
The table is deleted.



CHAPTER



Working with Fields

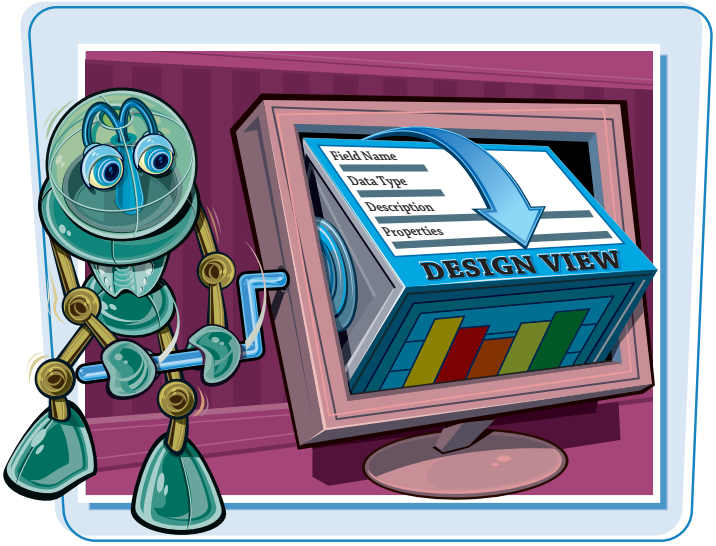


Each table consists of one or more fields. In this chapter, you will learn how to set field properties and field types, and you will create input masks and validation rules to cut down on data-entry errors.

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Open a Table in Design View

To modify a table, you work in Design view. You can go directly into Design view from the Navigation pane, or you can switch between Design view and some other view if the table is already open.



Open a Table in Design View

WHEN THE TABLE IS CLOSED

1. In the Navigation pane, right-click the table.
2. Click **Design View**.

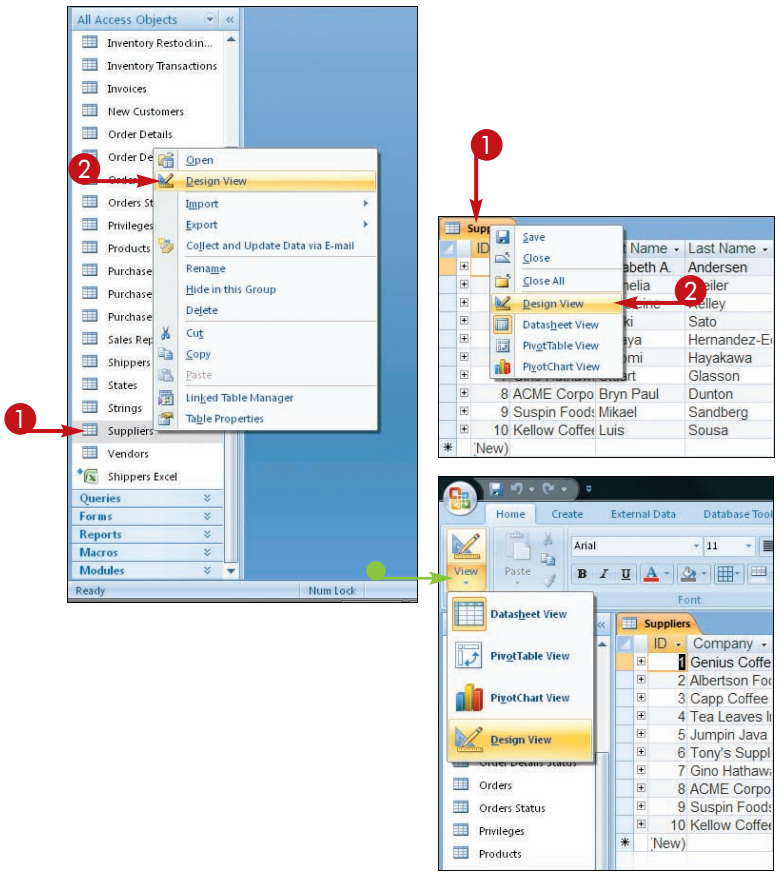
   The table opens in Design view.

WHEN THE TABLE IS OPEN IN ANOTHER VIEW

1. Right-click the open table's tab.
2. Click **Design View**.

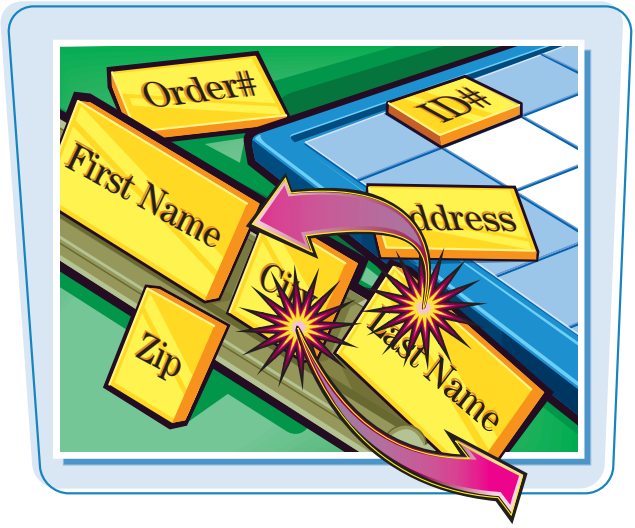
   The table opens in Design View.

- You can also click here and click **Design View**.



Rearrange Fields

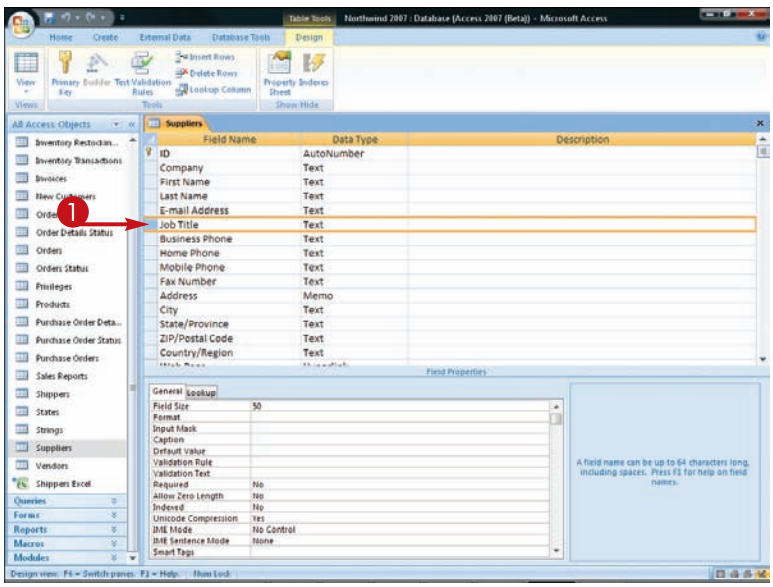
You can change the order in which fields appear in a table. The field order in Design view from top to bottom corresponds to the order in a datasheet from left to right. Field order also determines the default positioning of fields on forms and reports.



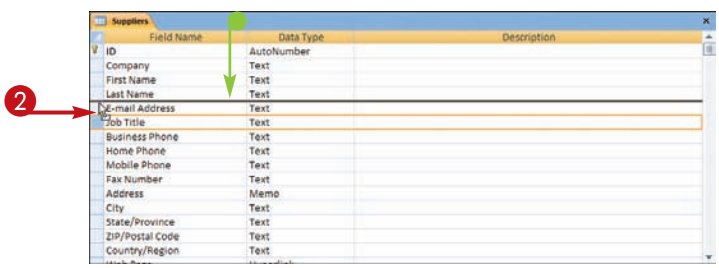
Rearrange Fields

1. Click the selector to the left of the field name.

Note: *To move multiple contiguous fields, click the first one, hold down* Shift *, and click the last one.*

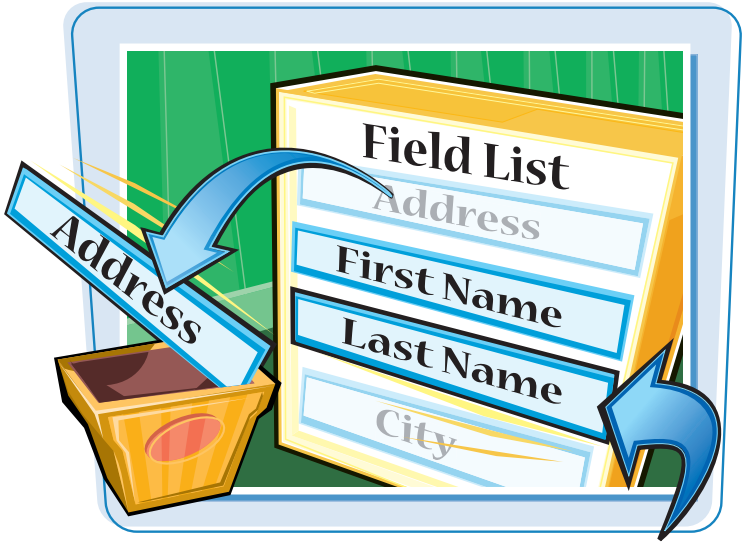


2. Drag up or down to move the field.
   - A horizontal line shows where the field is going.
3. Repeat steps **1** to **2** to move other fields as needed.



Insert and Delete Fields

You can insert new fields into a field list, and you can remove existing fields from that list.



Using skills that you have already learned, you could add a field at the bottom of the field list and then move it to the position that you want. However, it is easier to insert a new blank row in the field list and type the new field where you want it.

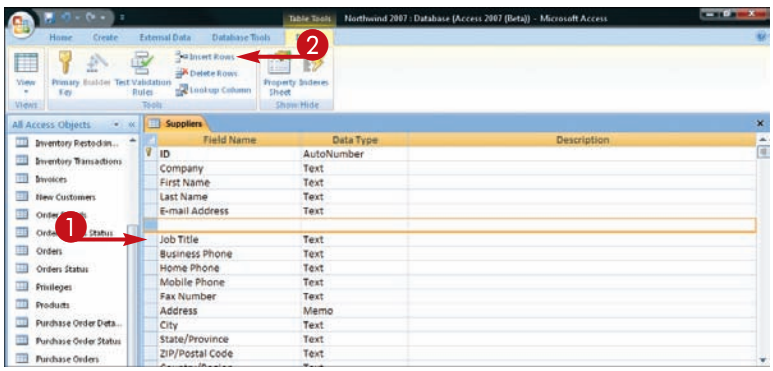
Insert and Delete Fields

INSERT A FIELD

1. Click the field that the new field should appear above.
2. Click **Insert Row.**

   A new row appears in the grid, above the one you selected.
3. Create the new field as you would normally.

Note: *See Chapter 3 for more information.*



DELETE A FIELD

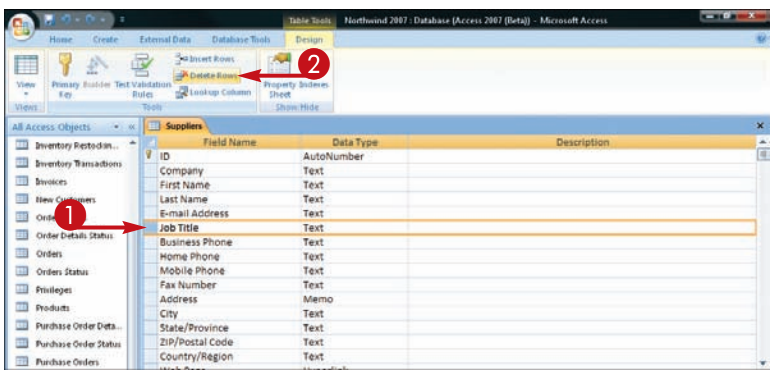
1. Click the field that you want to delete.

Note: *To delete multiple contiguous fields, click the first one, hold down* Shift *, and click the last one.*

2. Click **Delete Rows**.

   The row is deleted, along with any data that field contained.

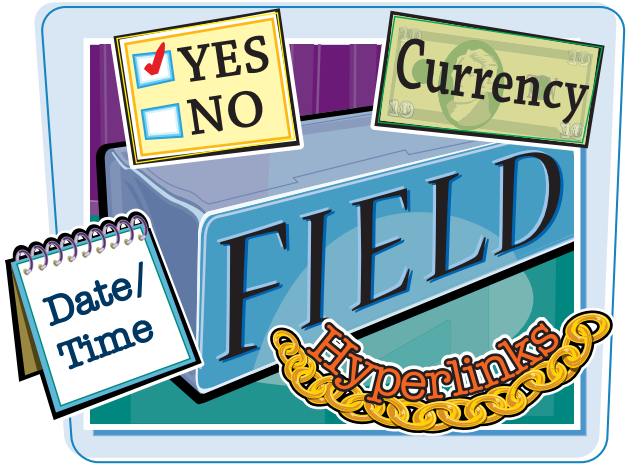
Note: *If you make a mistake, press* Ctrl + Z *to undo the deletion.*



Understanding Data Types

Each field has a data type that defines what you can store in it. Data entry is restricted to valid entries for the type you choose, helping prevent data-entry errors. For example, you cannot enter letters in a field set to Number, and you must enter valid dates or times in a Date/Time field.

The choice of data type also affects the other properties available for the field, as you will see later in this chapter.

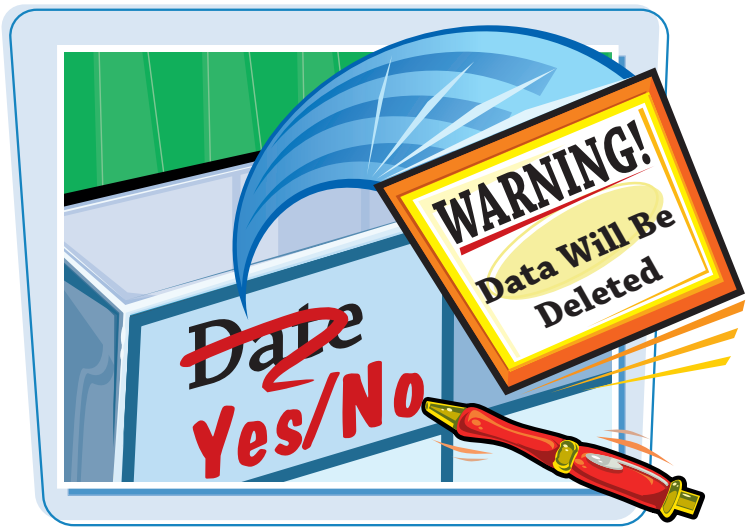


Data Types

The following table lists the available data types in Access 2007 and explains possible uses for each.

Data Type	*Used For*	*Notes*
Text	Text and numbers	General-purpose field containing any data. Limit of 255 characters. Cannot be used for numeric calculation. Use this type for numeric entries that will not have calculations performed on them, such as telephone numbers and ZIP codes.
Memo	Text and numbers	Limit of 65,535 characters. In Access 2007 file format, can hold rich text with formatting. Some limitations on usage in formulas and functions.
Number	Numbers only	Flexible field size of 1, 2, 4, 8, or 16 bytes. Can also hold symbols used as helpers for numbers, such as decimal points and commas.
Date/Time	Numbers representing dates and times	Stores dates and times as 8-byte numbers. Only numbers representing valid dates or times are accepted.
Currency	Numbers representing currency values	Stores currency values as 8-byte numbers. Even though the field might only show two decimal places, depending on formatting, it keeps track of up to four, to prevent rounding off.
AutoNumber	Automatically generated numbering for each record	Stores Access-generated values as 4-byte numbers.
Yes/No	Boolean data	-1 represents Yes and 0 represents No, but the field can be formatted to display values as True/False, On/Off, or Yes/No.
OLE Object	Embedded OLE objects	Use when you need to attach external documents in a backward-compatible database or when you need OLE linkage.
Hyperlink	A text address representing an external source	You can link to Web sites, email addresses, files on your PC, files on a LAN, or virtually any other location.
Attachment	Any supported file type	Works only in Access 2007 databases. You can attach data files from word-processing programs, spreadsheets, graphics editing programs, and so on.
Lookup Wizard	Varies	Depending on usage, either creates a lookup list from data that you specify or creates a lookup list from the values in another table. Can also be used to set up multivalued lists.

Change a Field's Data Type



You can change a field's data type to better represent what you plan to store there.

It is easiest to set field types *before* you enter data into the table, but you can change the field type at any time. Any existing data that violates the rules of the new data type is deleted, but Access warns you before deleting it.

Change a Field's Data Type

1. In Design view, click here to open the Data Type list for the field.
2. Click the new type.

   The type changes in the Data Type column.
3. Click on the Quick Access toolbar to save the change to the table.

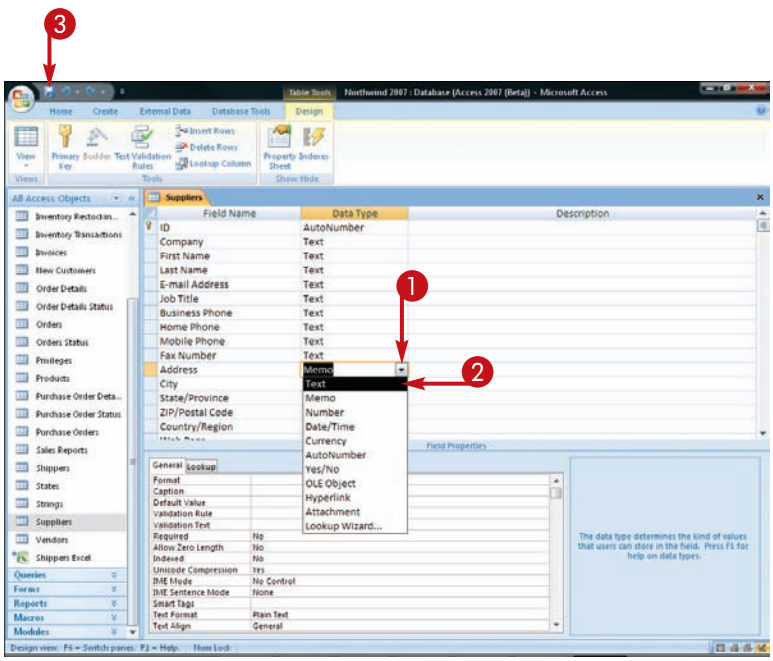
   You can also press Ctrl + S.

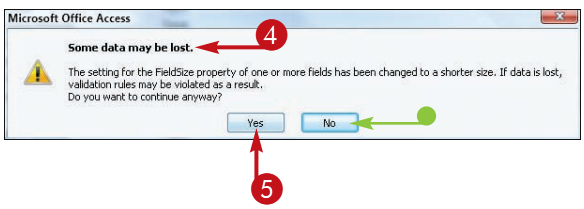
   If the existing data violates the rules of the new data type, a warning message appears.
4. Evaluate the impact of the warning.

***Note:** Even though the warning may say that records were deleted, they have not actually yet been deleted at this point; you can still back out.*

5. Click **Yes** to allow the deletion of records that violate the new field type's rules.

- You can also click **No** to abandon the change.





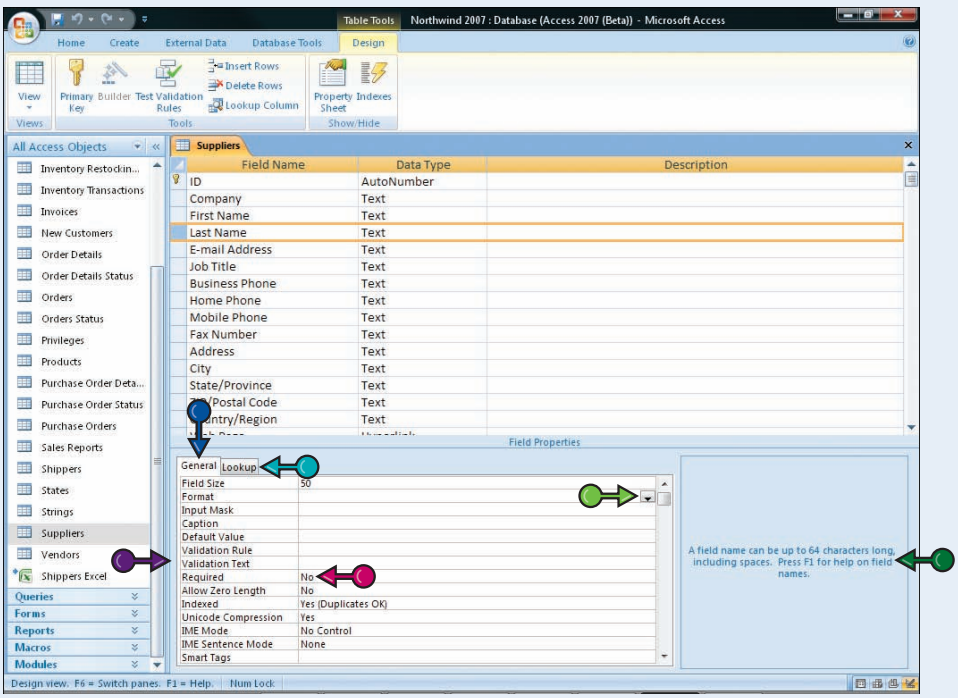
Understanding Field Properties

Each field has a set of properties that defines and controls it. These properties include basics such as its size and format, as well as rules for entries in it, such as requiring an entry or not or restricting an entry to certain values.

Properties pane
When a field is selected in Design view, its properties appear in the lower pane.

General tab
The General tab contains most of the properties you will work with.

Lookup tab
The Lookup tab is primarily for setting up lookup lists.

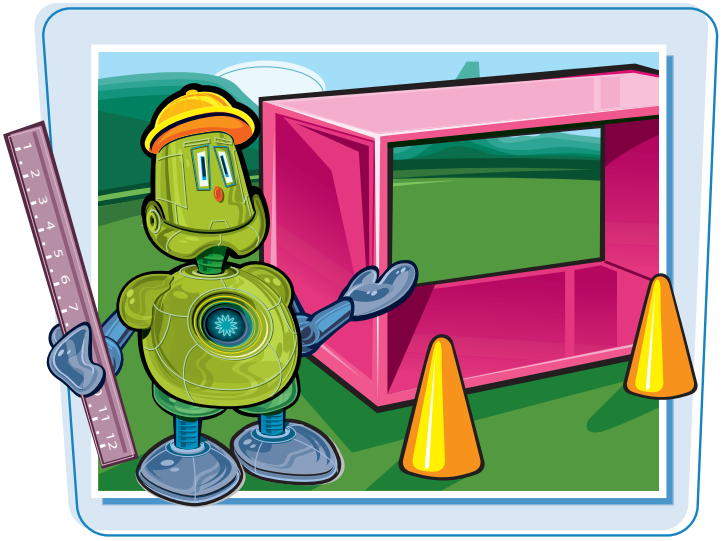


Drop-down lists
Some properties have drop-down lists from which you can select; click the arrow to open the list. Other fields have Builder buttons (...), which open a dialog box that walks you through the process of building an entry.

Property information
When the insertion point is in a property's box, information about that property appears here.

Yes/No properties
Some properties represent yes/no questions; these are typically already filled in for you with default values.

Understanding Field Sizes



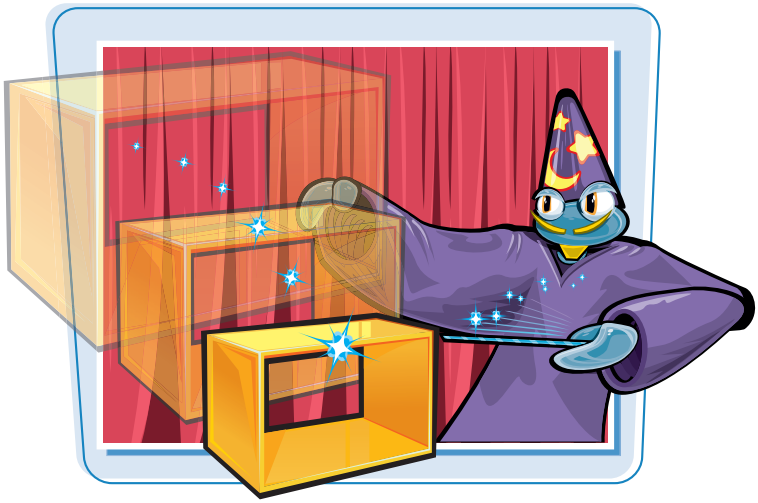
Each field has a size that limits the amount of data you can store in it. There are different ways of expressing the field size depending on the type of field.

The following table lists the specifications for the data types for which Field Size is a configurable setting. Many field types do not allow you to set a field size.

Field Type	*Default Size*	*Notes*
Text	255 characters	You can specify any number of characters from 0 to 255. Each character occupies 1 byte of disk space.
Number	Long Integer	The choice of number format determines the number of bytes used to store it: **Byte:** Integers from 0 to 255 (1 byte). **Integer:** Integers from -32,768 to +32,767 (2 bytes). **Long Integer:** Integers from -2,147,483,648 to +2,147,483,647 (4 bytes). **Single:** Integers from -3.4×10^{38} to $+3.4 \times 10^{38}$ and up to 7 significant digits (4 bytes). **Double:** Floating-point numbers from -1.797×10^{308} to $+1.797 \times 10^{308}$ and up to 15 significant digits (8 bytes). **Replication ID:** A globally unique identifier (GUID) such as a randomly generated ID number (16 bytes). **Decimal:** Integers with a defined decimal precision with values between -10^{28} and $+10^{28}$. The default precision is zero, and the default number of decimal places displayed is 18.
AutoNumber	Long Integer	Same as Number except there are only two choices: Long Integer or Replication ID.

Change a Field Size

Setting a field's size as small as possible — while still accommodating all entries — keeps the database file small. The difference in file size becomes more pronounced as more records are stored.

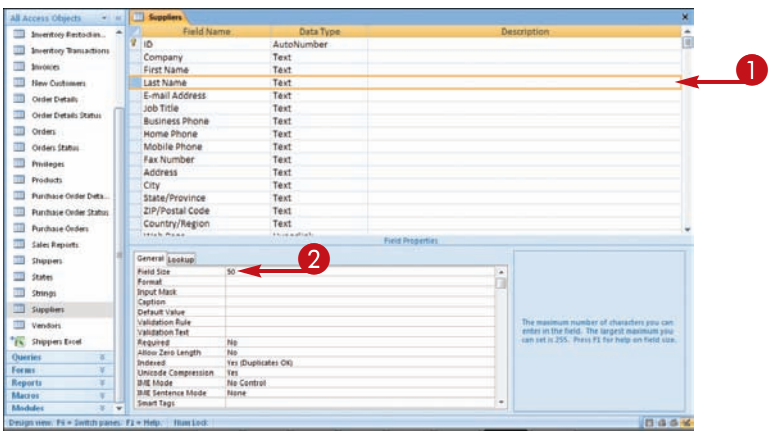


Change a Field Size

FOR THE TEXT DATA TYPE

1. In Design view, click the field.
2. Click in the Field Size row on the General tab.
3. Change the field size.

Note: *Field size for a text field is expressed as a number of characters.*



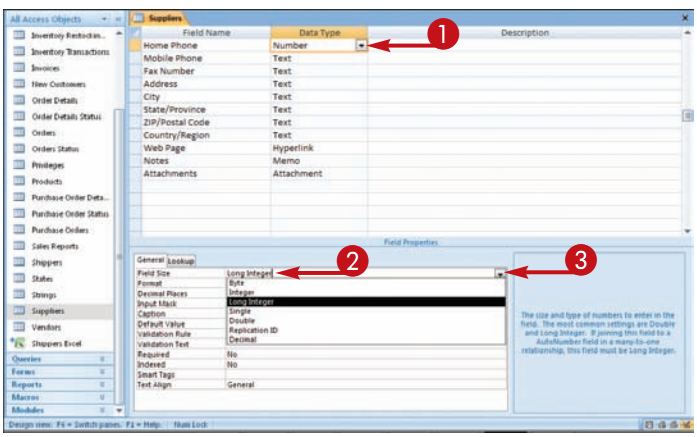
FOR THE NUMBER DATA TYPE

1. In Design view, click the field.

   The properties for that field appear.
2. Click in the Field Size row.

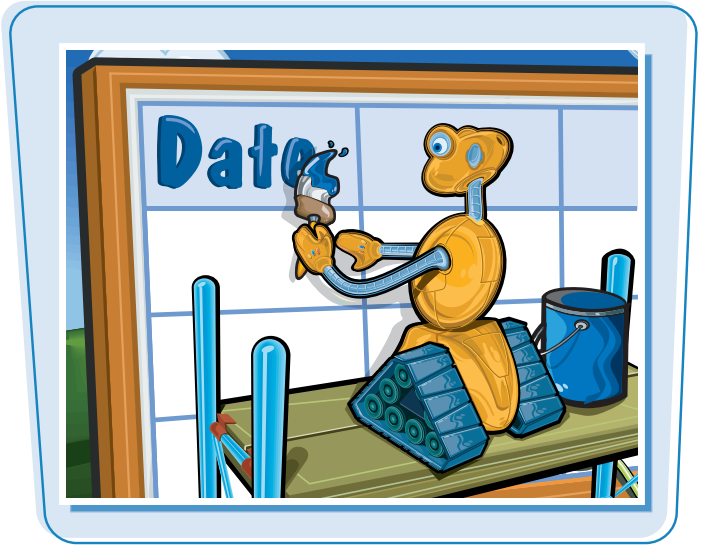
   appears on the row.
3. Click here and click the field size that you want.

Note: *For a numeric field, size is expressed as a number type. See the preceding section for details.*



Set a Field's Format

A field's format determines the way its data will be displayed. You can change a field's format to affect its appearance in datasheets, forms, and reports.



The field format is most significant for fields that store data numerically, such as Number, Currency, and Date/Time, and Yes/No.

Set a Field's Format

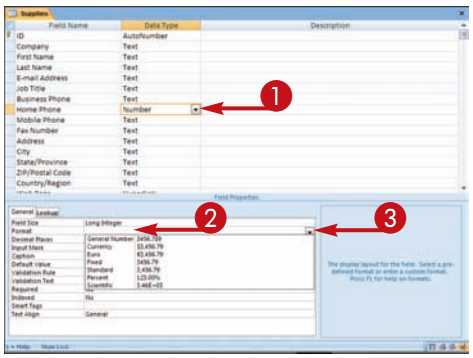
1. In Design view, click the field.

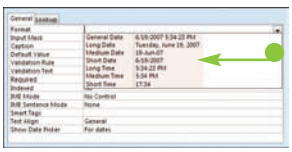
   The properties for that field appear.

2. Click in the **Format** row.

   A ▼ appears on the row.

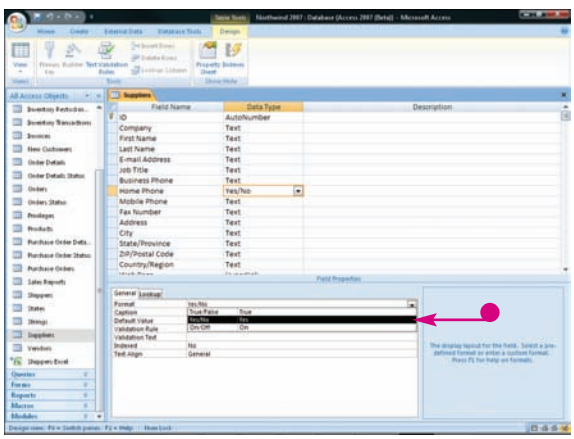
3. Click here and click the format that you want.





- For Date/Time data types, the choices appear as date/time formats.

- For Yes/No fields, the choices appear as ways of expressing yes or no.



Set a Field Caption

You can specify captions for fields that are different from their actual names. For example, if you have a field called LastName, you could set up its caption to appear as "Last Name" with a space between the words.

Captions appear in datasheet headings and on labels in forms and reports.



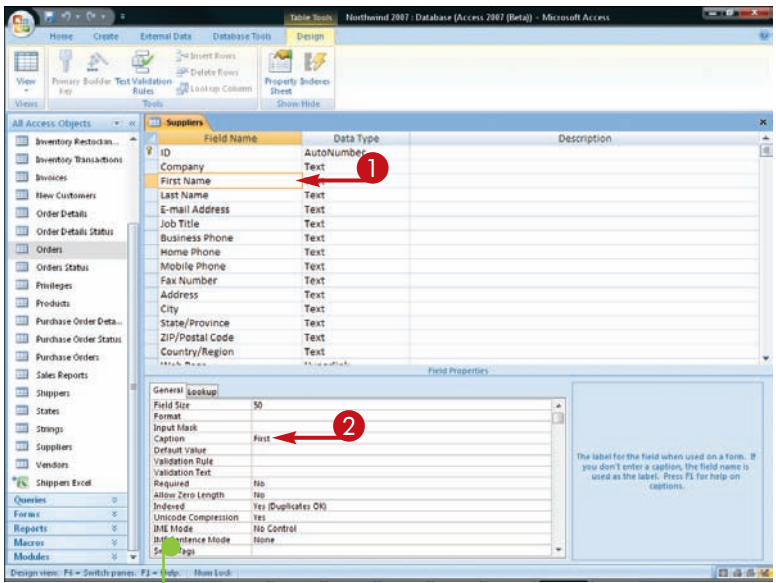
Set a Field Caption

1. In Design view, click the field.

   The properties for that field appear.

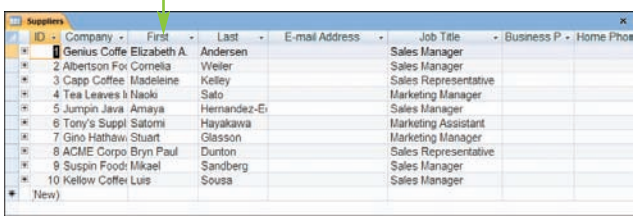
2. Click here and type a caption.

Note: *The caption can include spaces and symbols and can be up to 255 characters long.*



When you display the table's datasheet, the field's caption appears as its column heading.

Note: *To check the caption in a datasheet, click*  *to save and then switch to Datasheet view.*



Set a Default Value

You can speed up data entry for fields that usually contain the same value by making that value the default. For example, if 90% of your clients pay by credit card, you could make Credit Card the default value in the PaymentType field.



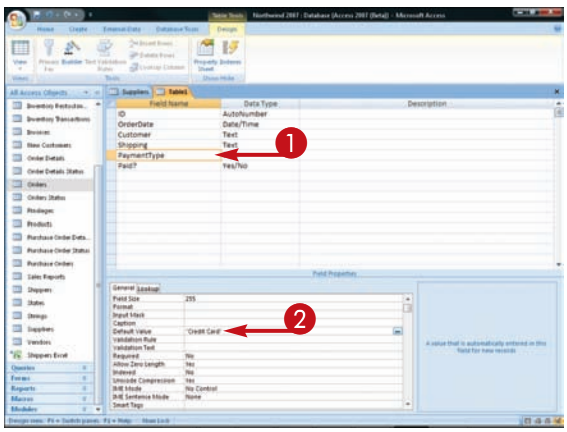
Set a Default Value

1. In Design view, click the field.

   The properties for that field appear.

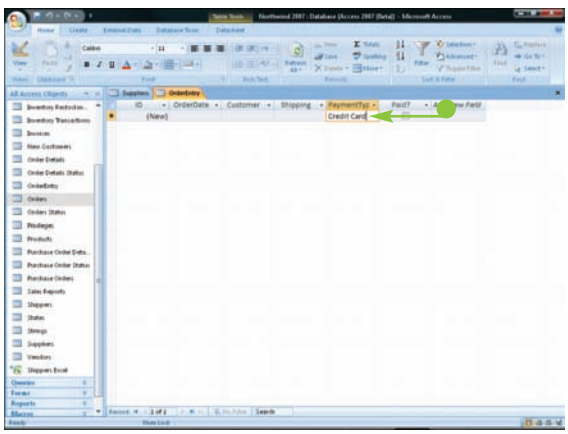
2. Click here and type a default value.

Note: *When you move away from the text box, Access automatically adds quotation marks around what you typed.*



- When you display the table's datasheet, the default value appears in new records.

  The default value does not automatically populate into existing records.



Make a Field Required

The primary key field is always required for each record, but you can also make other fields required without changing the primary key setting. When a field is required, Access will not enable users to move past it during data entry.



Make a Field Required

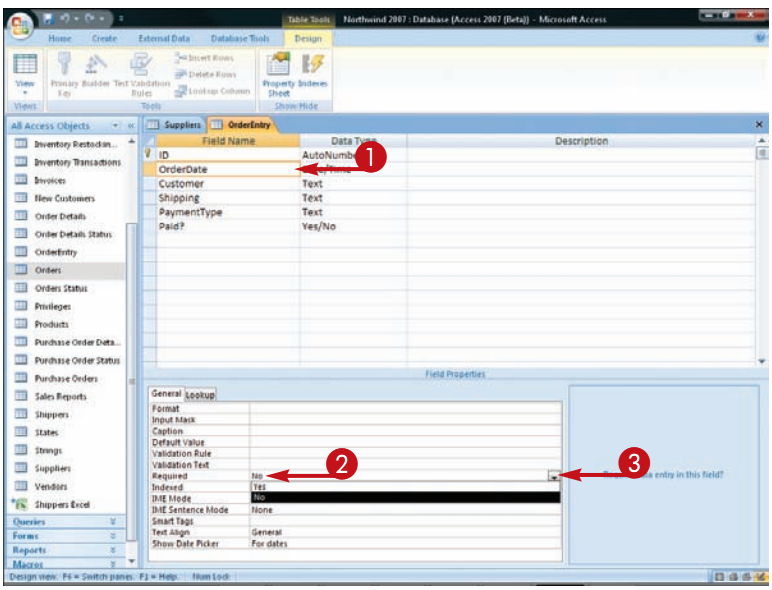
1. In Design view, click the field.

   The properties for that field appear.

2. Click in the **Required** row.

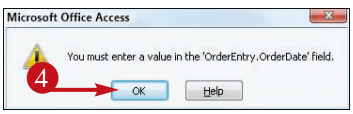
   A ▼ appears.

3. Click here and click **Yes**.



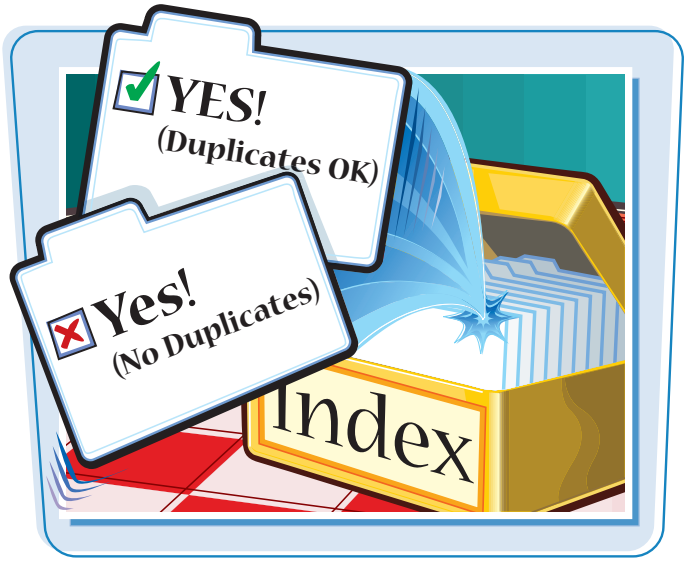
When you enter a new record in the table, a warning appears if you do not enter a value in a required field.

4. Click **OK** to clear the error and then type a value in the required field.



Index a Field

When you perform searches on a database that contains many records, a delay can occur as Access searches. To minimize searching delays, you can set certain fields to be automatically indexed. Searches based on those fields will take place more quickly.



The two types of indexing are Yes (Duplicates OK) and Yes (No Duplicates). The latter has the side effect of forcing each record to have a unique value for that field, as with the primary key field.

Index a Field

1. In Design view, click the field.

   The properties for that field appear.

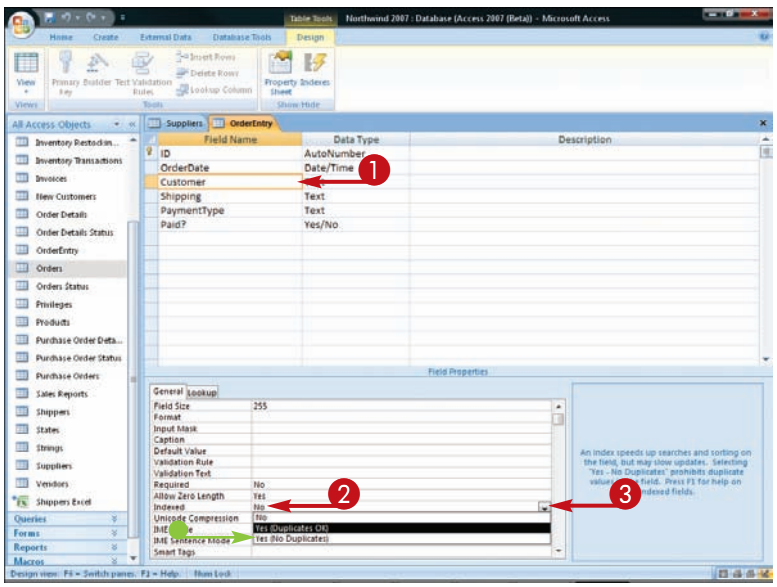
2. Click in the **Indexed** row.

   appears.

3. Click here and click **Yes (Duplicates OK)**.

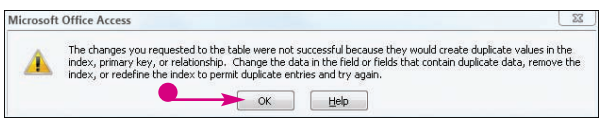
   This sets the field to be indexed without forcing entries in it to be unique.

- You can also choose **Yes (No Duplicates)** if you prefer that records have unique entries for that field.



***Note:** No differences are apparent in the datasheet between indexed and non-indexed fields.*

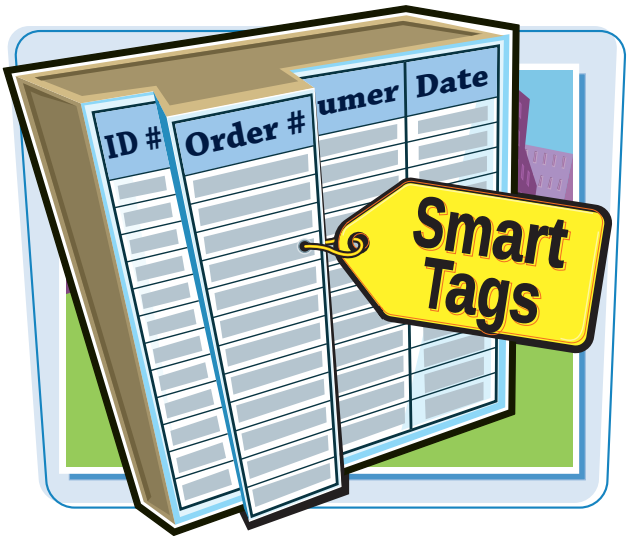
If you chose Yes (No Duplicates) and you then try to enter an identical value for two records, an error message appears.



- Click **OK** to clear the message and then correct the error.

Apply Smart Tags

You can turn on smart tags for a field to make it easier to cross-reference data between the Access database and Microsoft Outlook (or another personal information and email program) and the Web.



Apply Smart Tags

1. In Design view, click the field.

   The properties for that field appear.

2. Click in the **Smart Tags** row.

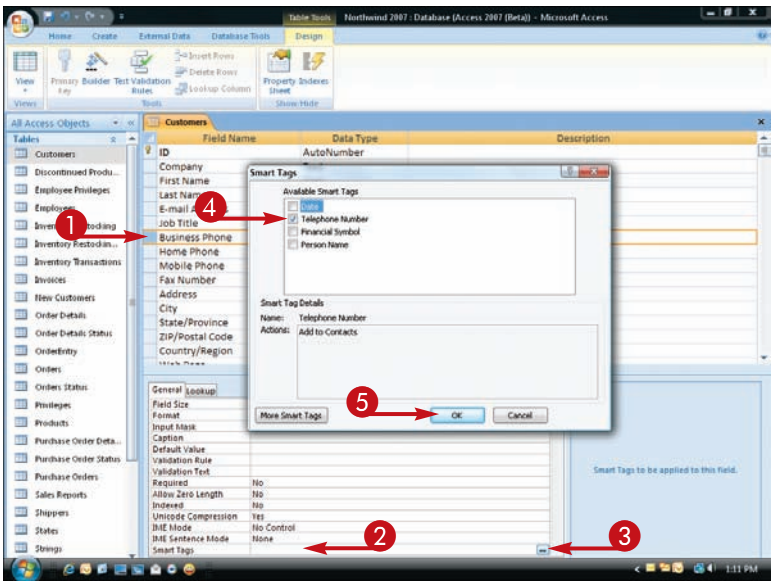
   [...] appears.

3. Click [...].

   The Smart Tags dialog box appears.

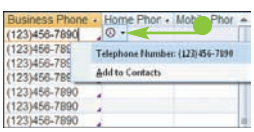
4. Click the check box for the type of smart tags to use.

5. Click **OK**.



When working in a datasheet, a Smart Tag icon appears next to a tag-enabled field when it is selected.

- Click the Smart Tag icon to see a menu of activities, and then click the desired activity.



Create an Input Mask

You can create an input mask to help minimize data-entry errors. Input masks provide a template for entering data into a field, such as providing dashes between the parts of a phone number and parentheses around the first three numbers, like this: (317)555-1298.



You can use one of Access's input masks "as is," or you can customize it.

Create an Input Mask

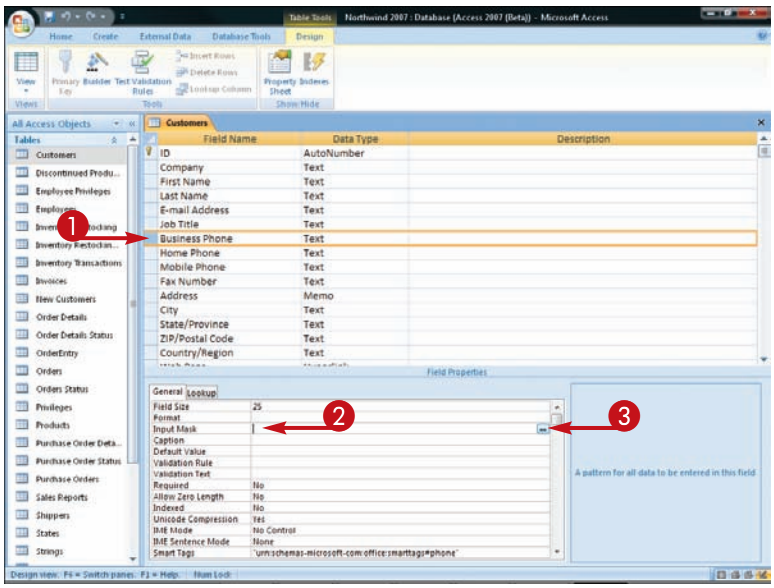
1. In Design view, click the field.

   The properties for that field appear.

2. Click in the **Input Mask** row.

   ... appears .

3. Click ....



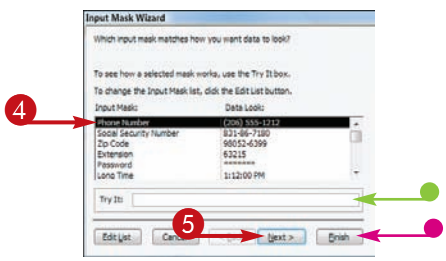
   The Input Mask Wizard opens.

4. Click the type of input mask that you want.

   - To try the mask, you can click in the **Try It** box and type a sample entry.

5. Click **Next** to customize the mask.

   - You can instead click **Finish** if you do not want to customize the mask.



6. Modify the input mask's code if you want to.

Note: *See the Tip area for help.*

7. Click here and select a different placeholder character if necessary.

- To try the mask, you can click in the **Try It** box and type a sample entry.

8. Click **Next**.

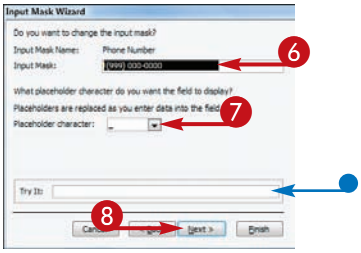
9. Click an option button to describe how you want the data stored.

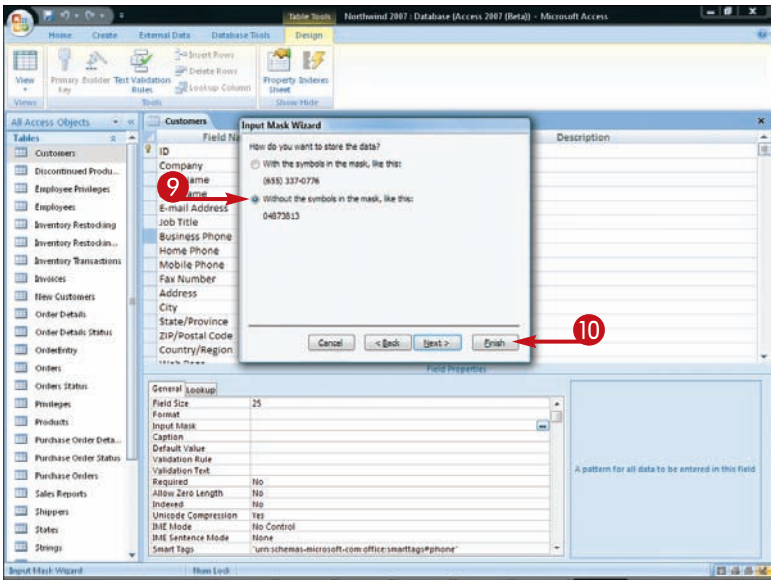
Note: *This makes no difference unless you plan to export the data; then your choice here determines how it will look when exported.*

10. Click **Finish**.

    The input mask code appears in the Input Mask row in the field's properties.

Note: *You could click* ***Next*** *in step* ***10*** *and then click* ***Finish*** *after that, but the next step is just a summary screen. You save a step by clicking* ***Finish*** *early.*





TIP

How do I create a custom input mask?

Input masks use characters to represent the types of data they will accept. Here are the most commonly used characters. For more characters, look up "Input Mask Character Reference" in the Access Help system.

Character	*Use*
0	Single digit, required
9	Single digit, optional
#	A digit, space, plus sign, or minus sign
L	Single letter, required
?	Single letter, optional
A	Single letter or number, required
a	Single letter or number, optional
&	Any character or a space, required
C	Any character or a space, optional

Create a Validation Rule

Input masks help users enter the proper number and type of characters, but they cannot restrict the field to certain entries based on logic.



You can construct a validation rule that forces a field entry to meet a logical test of its validity. For example, you could make sure that negative numbers could not be entered into a numeric field. You can also create *validation text,* a custom message that appears when the rule is violated.

Create a Validation Rule

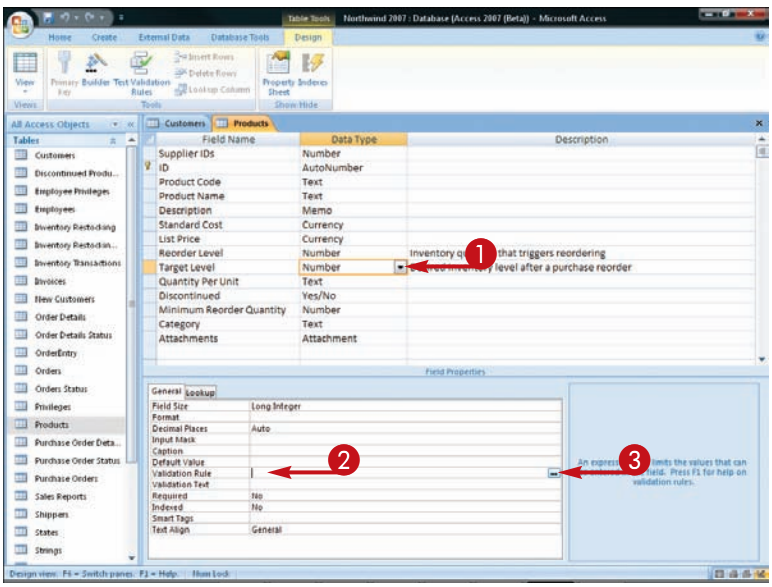
1. In Design view, click the field.

   The properties for that field appear.

2. Click in the **Validation Rule** row.

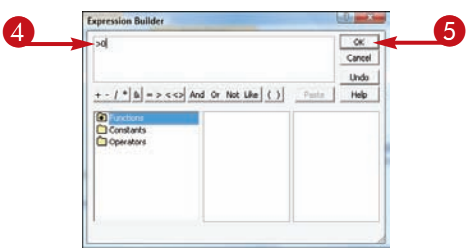
   ... appears .

3. Click ....



   The Expression Builder dialog box opens.

4. Enter the expression that represents the criteria to specify.



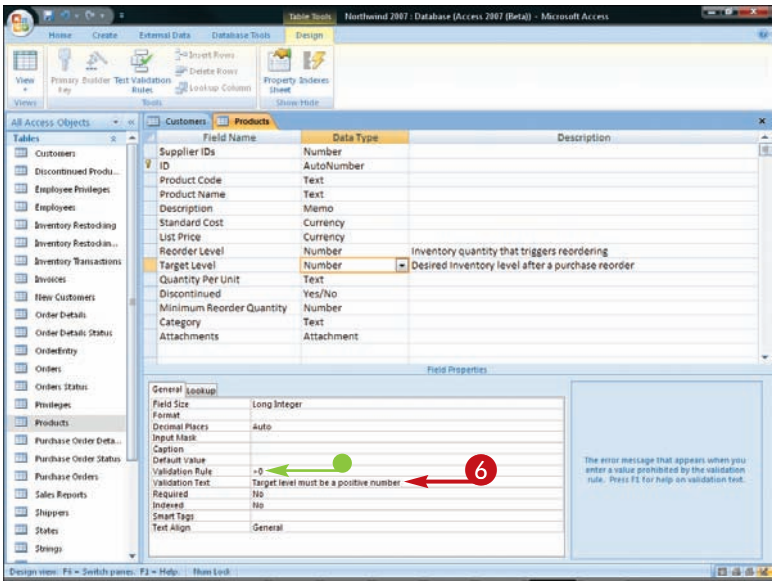
***Note:** See the Tip area for help.*

5. Click **OK**.

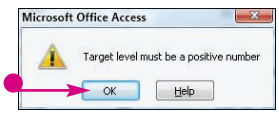
***Note:** You could have simply typed the validation rule into the row and skipped steps **3** to **5**, but the Expression Builder's tools can be useful for complex expressions.*

- The validation rule appears in the Validation Rule row.

6. Click here and type the text for the error message.



When the rule is violated, a custom error message appears containing the text you specified in the Validation Text row.



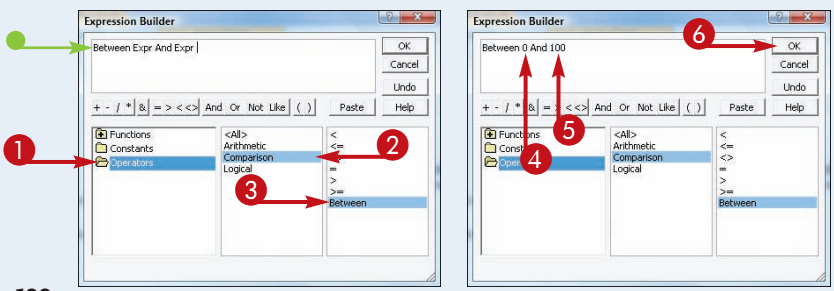
- Click **OK** and then reenter the field entry.



How do I use the Expression Builder?

The Expression Builder can guide you in determining the correct syntax for an expression. There are many types of expression content available, including functions, constants, and operators. For example, to enter an expression for a value that is greater than 0 but less than 100, you could use the Between operator, like this:

1. Click **Operators**.
2. Click **Comparison**.
3. Double-click **Between**.
   - The text "Between Expr And Expr" appears.
4. Replace the first Expr with **0**.
5. Replace the second Expr with **100**.
6. Click **OK**.



Create a Record-Level Validation Rule

You can construct a record-level validation rule to check information to create validation conditions that involve more than one field.

For example, in an Employees table, you could make sure that the Hire date is before the Separation date because an employee cannot quit before being hired.



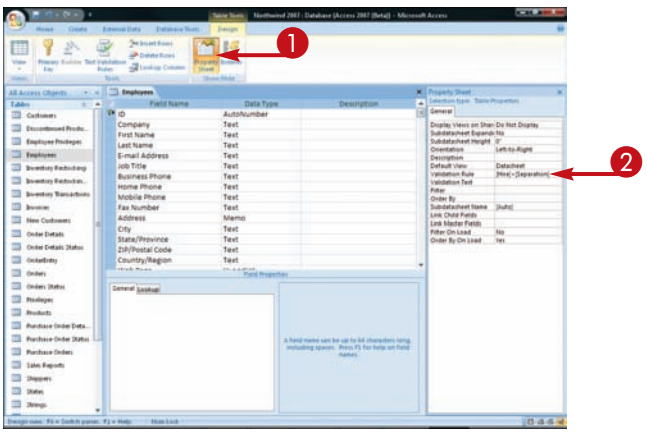
Create a Record-Level Validation Rule

1. In Design view, click **Property Sheet**.

   The Property Sheet for the entire table appears.

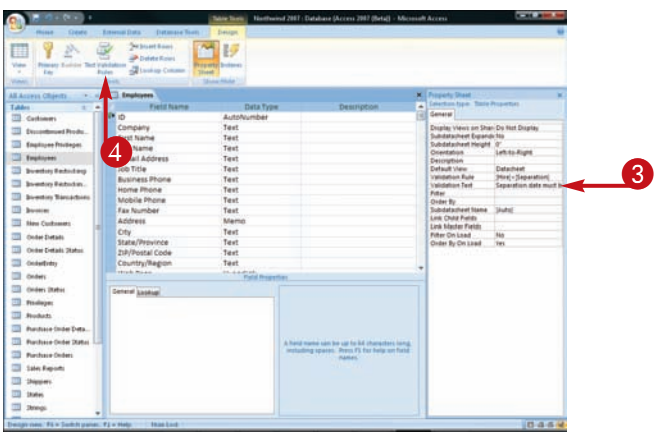
2. Click in the **Validation Rule** box and type the expression.

Note: *See the Tip area for more help.*



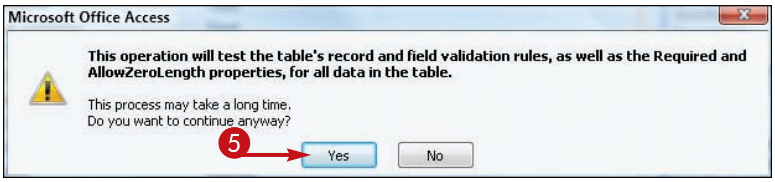
3. Click here and type the error message text.

4. Click **Test Validation Rules**.



If the table contains data already, a warning appears that the data must be checked.

5 Click **Yes**.



If the table has not been saved, a prompt appears to save it.

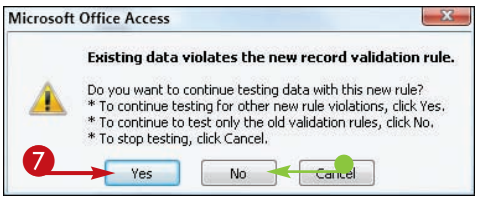
6 Click **Yes**.



If existing data violates the new rule, another warning appears. You can either keep the new rule or change it if this happens.

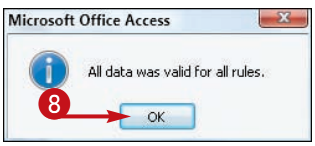
7 Click **Yes** to keep the new rule even if some existing data violates it.

- You can also click **No** to go back to the previous rule (if any).



8 Click **OK**.

The check is complete.





How do I construct a validation rule that contains field names?

You can type field names directly into an expression by enclosing them in square brackets, like this: [StartDate].



What happens to existing data that violates the rule?

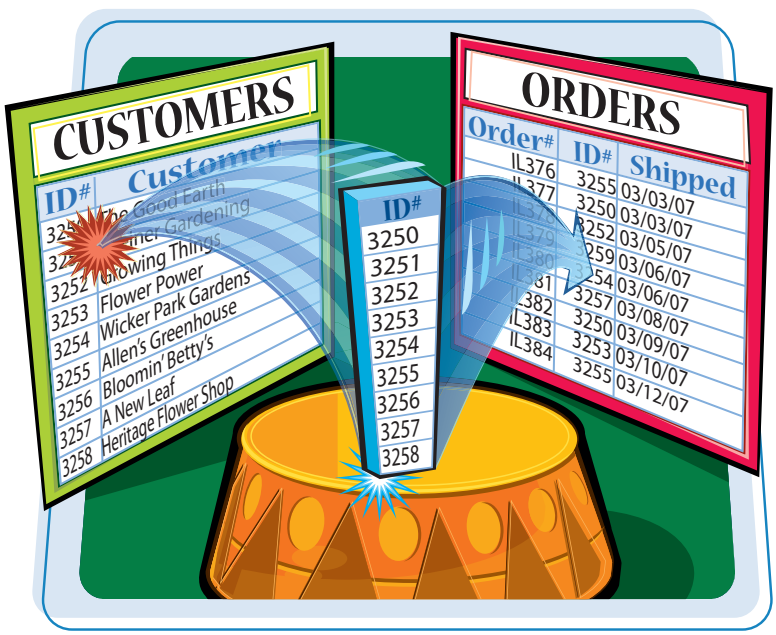
Nothing happens to it; it is allowed to continue to exist. However, new records will not be permitted to violate the rule, and if you ever edit the record that violates the rule, you will not be able to save changes to it until you fix the violation.



CHAPTER

5

Working with Relationships and Lookups

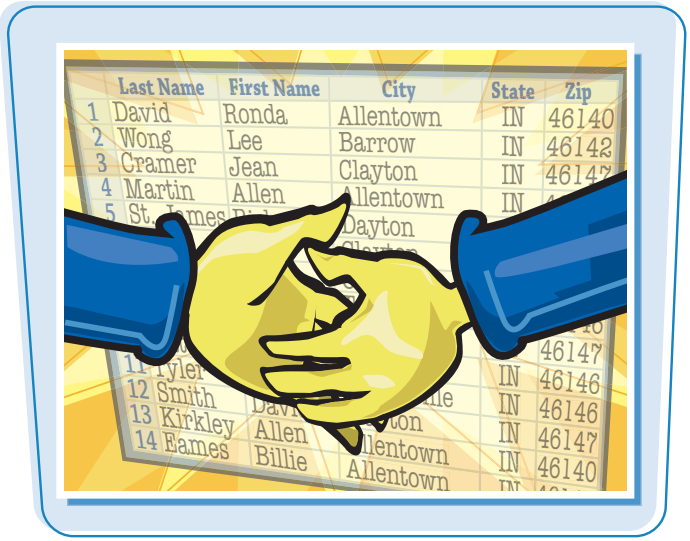


Relational databases are powerful because they can contain multiple related tables. You can create relationships between tables directly in the Relationships window, or you can create relationships by building lookups that populate a field in one table with values from another table.

Understanding Relationships 80
Create a Relationship between Two Tables 82
Edit a Relationship 84
Remove a Relationship 85
Arrange the Relationships Window 86
Print a Relationship Report 87
View Object Dependencies 88
Document the Database 90
Understanding Lookups 92
Create a Table for Use As a Field Lookup 94
Create a Field Lookup Based on a Table 96
Create a Field Lookup with Values That You Specify 100
Set Up a Multivalued Field 102

Understanding Relationships

You can connect tables by creating *relationships* between them based on a common field that they share. These relationships make it possible to create forms, queries, and reports that include fields from multiple tables.



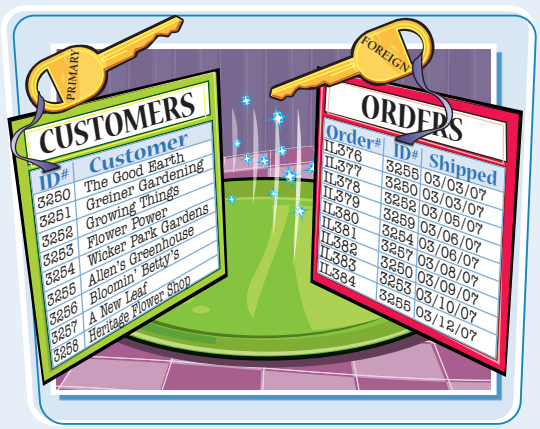
Common Fields

For a relationship to exist between two tables, they must have a common field. For example, the Customers table may have a CustomerID field, and the Orders table may also have a CustomerID field. The two tables could be joined, or *related,* by that field. The field type must be the same in both tables for a relationship to exist. (Exception: An AutoNumber field can be related to a Number field.)



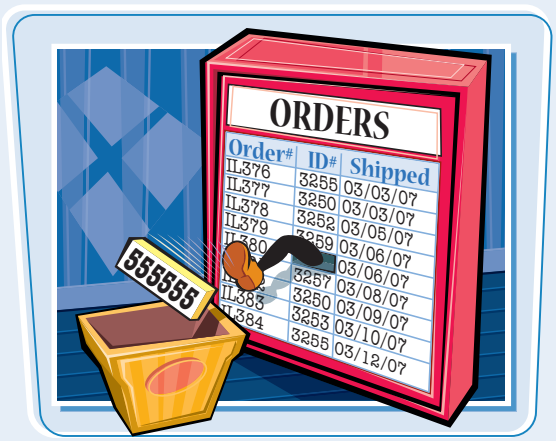
The Primary Key and Foreign Key

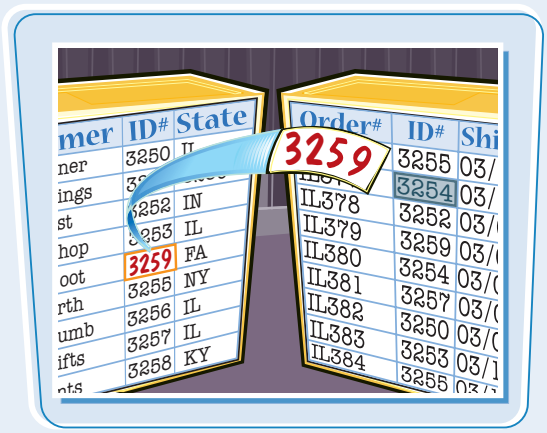
In most relationships, the primary key field in one table is related to a field in the other table that is *not* its primary key. In one table the field contains unique values, whereas in the other table it does not. The relationship field in the other table is called the *foreign key.* For example, in the Customers table, each record has a unique CustomerID field, but in the Orders table, two different orders may have the same CustomerID.



Referential Integrity

Relationships can optionally be set to *enforce referential integrity.* This prevents the foreign key field from containing values that do not appear in the primary key field. For example, in the Orders table, a CustomerID value could not be entered that had no valid corresponding entry in the Customers table. This would prevent users from entering orders for nonexistent customers.



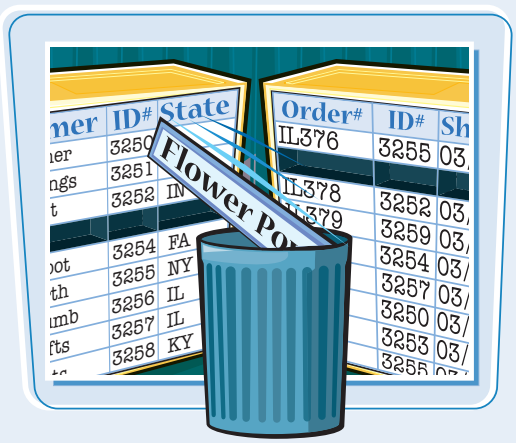


Cascade Update and Cascade Delete

When referential integrity is enabled, you can also enable Cascade Update and Cascade Delete. With Cascade Update, when a primary key entry changes, the foreign key entry in the related table changes too. For example, if a customer's CustomerID changes in the Customers table, all his or her orders in the Orders table will reflect the new ID number.

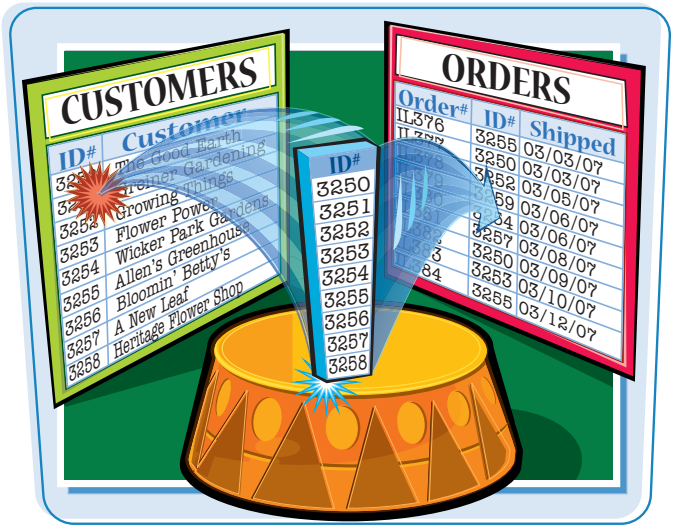
Cascade Delete

With Cascade Delete, when a record is deleted from the table containing the primary key part of the relationship, all corresponding records in the table containing the foreign key are deleted. For example, if a customer's record is deleted from the Customers table, all that customer's orders would be deleted from the Orders table. Use this feature with caution.



Create a Relationship between Two Tables

Relationships are created and managed in a special database view called *the Relationships window*. You can create relationships between tables from there by dragging a field from one table onto a field from another.



Create a Relationship between Two Tables

OPEN RELATIONSHIPS VIEW

1. Click **Database Tools**.

   The Database Tools tab appears.

2. Click **Relationships**.

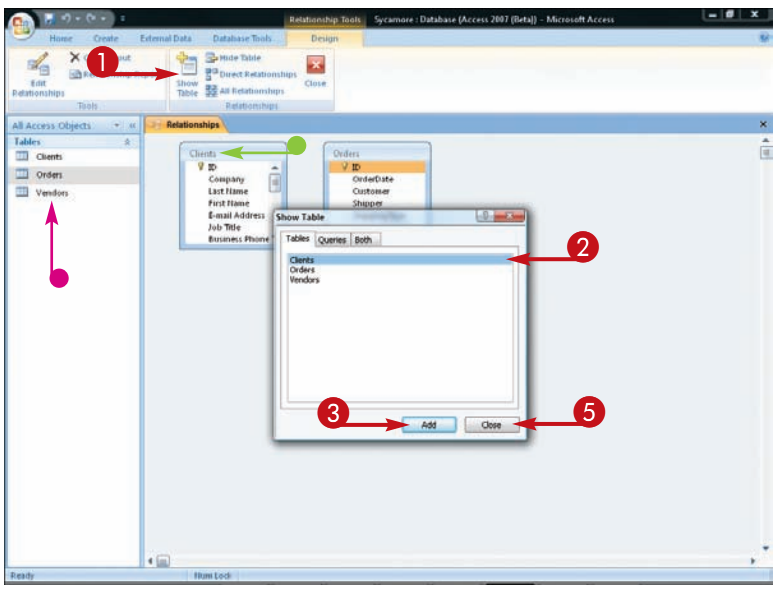
   The Show Table dialog box opens.

Note: *This dialog box does not open if you already have one or more tables in the Relationships window.*



ADD TABLES TO THE RELATIONSHIPS WINDOW

1. If the Show Table dialog box is not already open, click **Show Table**.
2. Click a table to add to the Relationships window.
3. Click **Add**.
   - The table appears in the Relationships window.
4. Repeat steps **2** to **3** as needed to add more tables.
   - You can also drag tables from the Tables list.
5. Click **Close**.



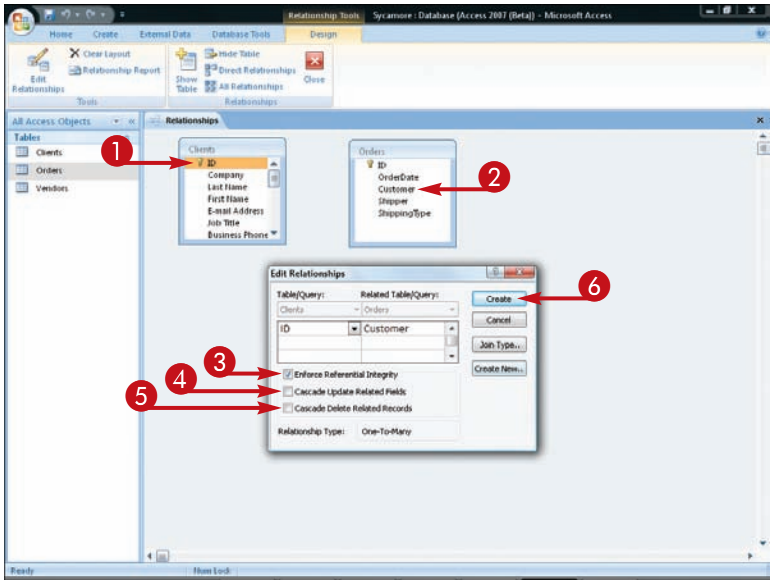
CREATE A RELATIONSHIP

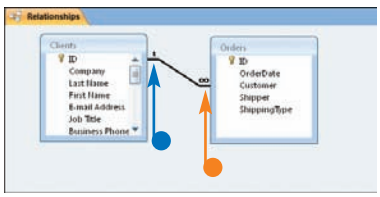
1. Click the primary key field to be associated with a field in another table.
2. Drag and drop the primary key field onto the associated field in the other table.
3. You can mark the **Enforce Referential Integrity** check box.
4. You can mark the **Cascade Update Related Fields** check box.
5. You can mark the **Cascade Delete Related Records** check box.
6. Click **Create**.

   A connector appears between the two fields.

- On the "1" side, each record contains a unique entry for the joined field.
- On the "Many" side, multiple records can have the same value for the joined field.

Note: *If you did not enforce referential integrity, a plain line appears with no symbols on it.*

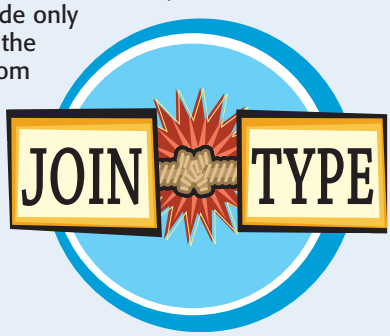




TIPS

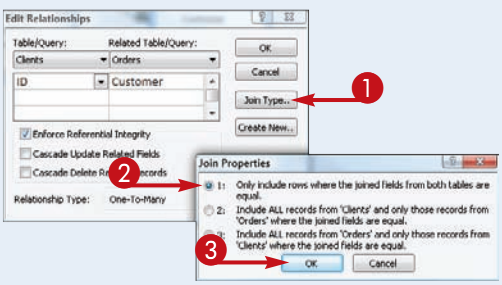
What is a *join type?*

A join type dictates what happens in a query or other combined view when there are records in one table that do not have a corresponding entry in the other. The default join type is to include only records where the joined fields from both tables are equal.



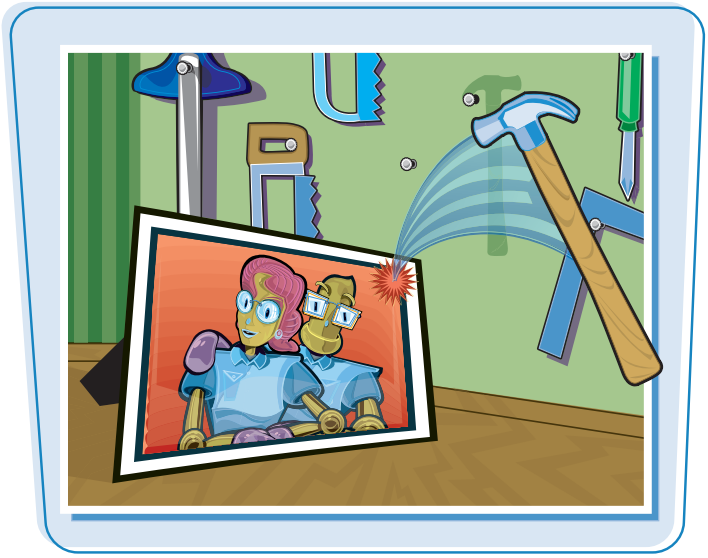
How do I change the join type?

1. Click **Join Type**.
2. Click a join type in the Join Properties dialog box.
3. Click **OK**.



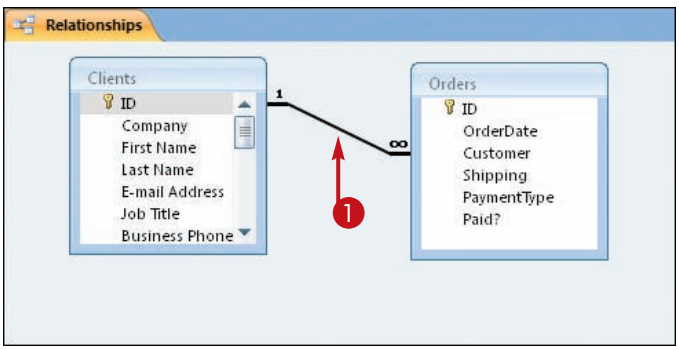
Edit a Relationship

You can change your mind about the nature of a relationship after creating it. For example, you may choose to change the referential integrity options or the join type.



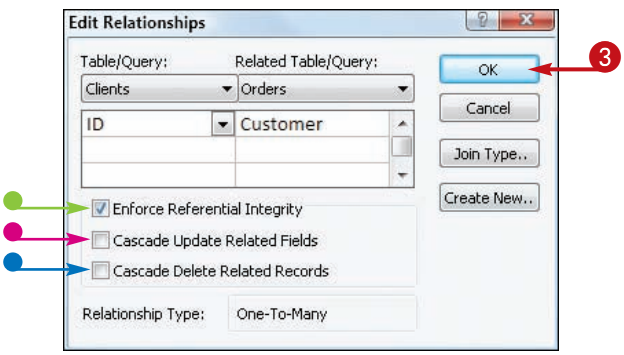
Edit a Relationship

1. In the Relationships window, double-click the connector between two tables.



The Edit Relationships dialog box opens.

2. Do any of the following:
   - Mark or clear **Enforce Referential Integrity**.
   - Mark or clear **Cascade Update Related Fields**.
   - Mark or clear **Cascade Delete Related Records**.
3. Click **OK**.



The relationship is changed according to the option that you selected.

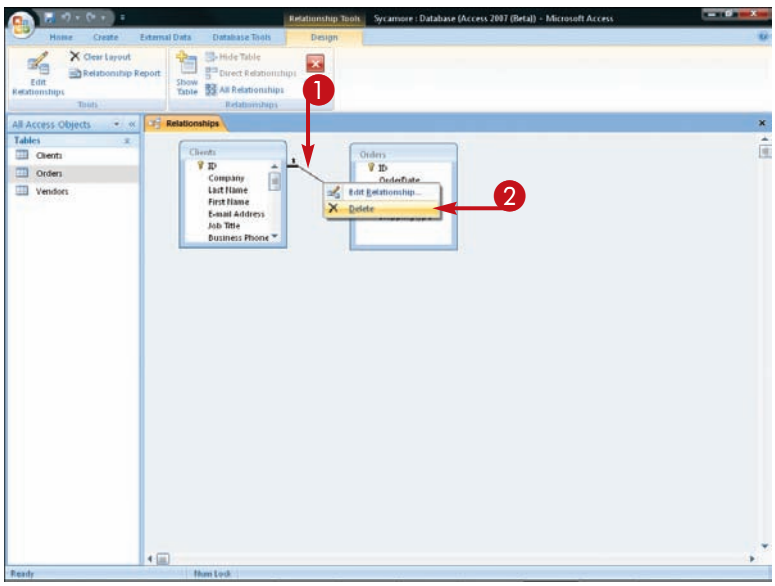
Remove a Relationship

You can remove the relationship between tables. This may be necessary in order to create a lookup, for example (because the Lookup Wizard likes to create its own relationships), or in order to change the data type for one of the fields.



Remove a Relationship

1. In the Relationships window, right-click the line between the two tables.
2. Click **Delete**.



A confirmation box appears.

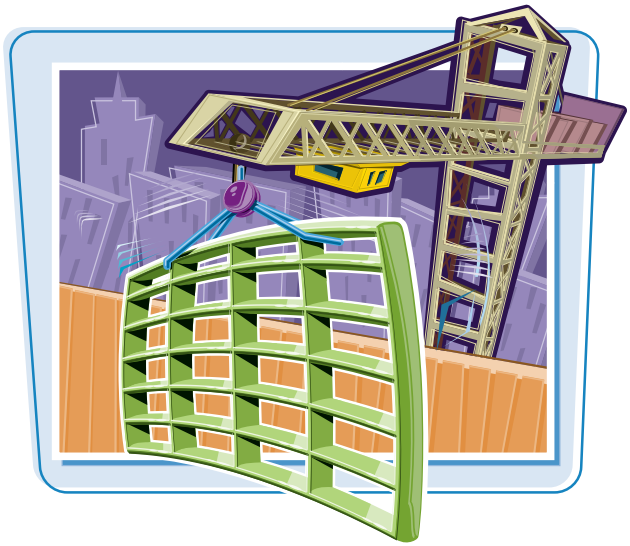
3. Click **Yes**.



The relationship line is removed.

Note: *You cannot undo a relationship deletion. You must re-create the relationship if you want it back.*

Arrange the Relationships Window



As you create more relationships and larger databases, the connector lines between tables may be difficult to see because of overlap. You can move the tables around in the Relationships window, and you can also resize the window for each table.

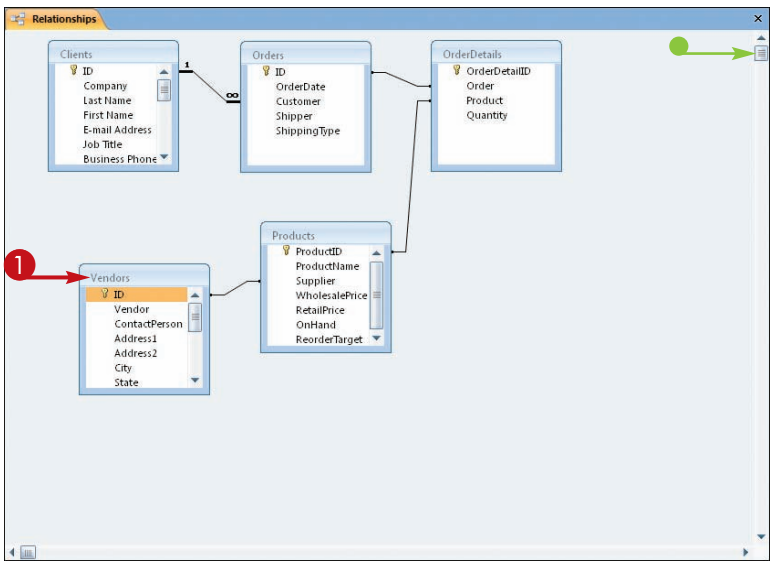
Arrange the Relationships Window

MOVE A TABLE IN THE RELATIONSHIPS WINDOW

1. Drag a table's title bar to a new location.

   The relationship lines stay connected.

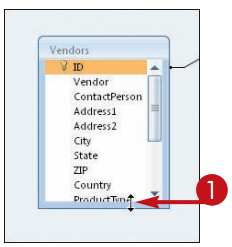
- If you need more room, use the scroll bar to scroll down.



RESIZE A TABLE'S FIELD LIST

1. Position the mouse pointer at the bottom of a table's field list and drag up or down to enlarge or shrink the list box.

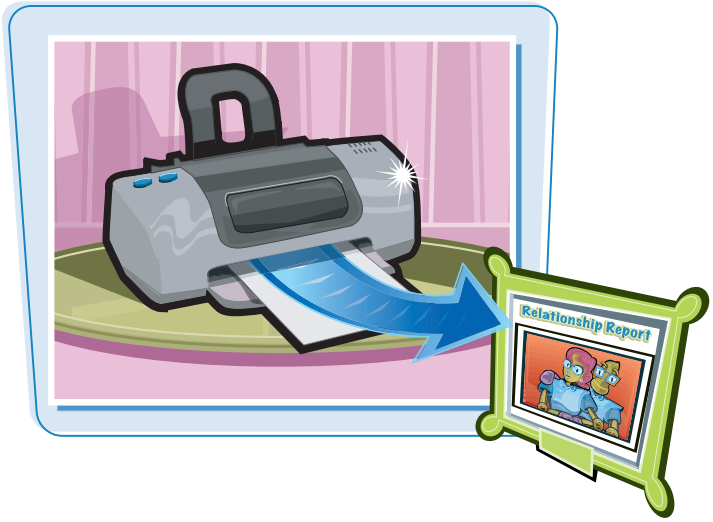
   You can also drag a field list's side border to expand the box horizontally.



Print a Relationship Report

chapter 5

As you work on your database, you may find it useful to have a printed copy of the Relationships window to refer to. You can get such a printout by creating a relationship report.



Print a Relationship Report

1. On the Design tab, click **Relationship Report**.

   A printable version of the Relationships window appears in Print Preview.

2. Click **Print**.

   The Print dialog box opens.

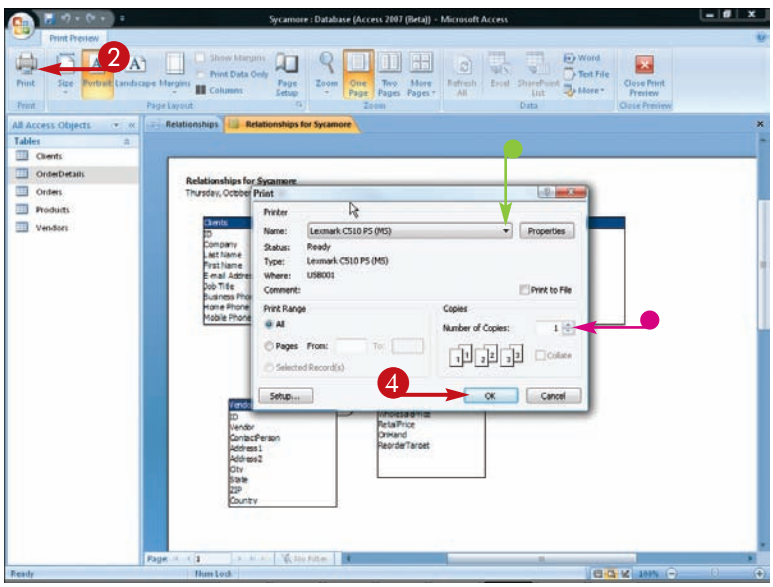
3. Set any printing options if needed:

   - Click here to choose a different printer.
   - You can increase the number of copies.

4. Click **OK**.

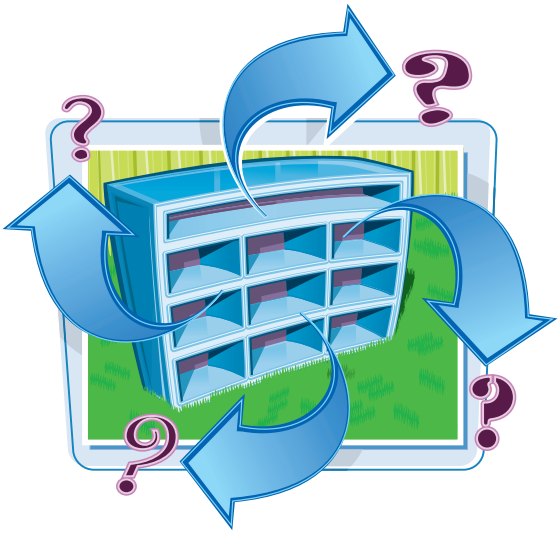
   The report prints.





View Object Dependencies

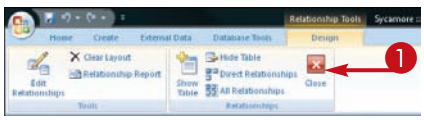
You can view an object's dependencies from the Object Dependencies task pane. This is easier than trying to decipher the relationships in the Relationships window in a very complex database.



The Relationships window does not need to be open to view object dependencies.

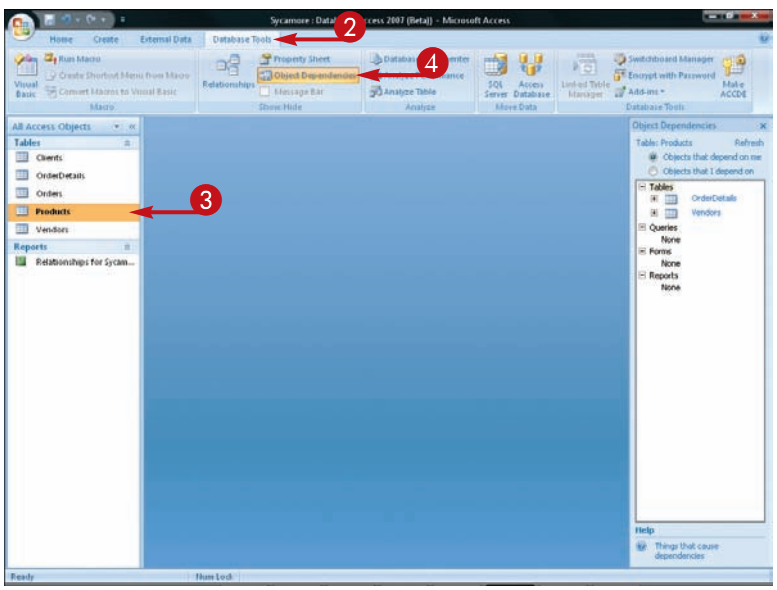
View Object Dependencies

1. If you are in the Relationships window, click **Close** to exit.



2. Click **Database Tools**.
3. Click the table to examine.
4. Click **Object Dependencies**.

   The Object Dependencies task pane opens.



5 Click a type of dependency to view:

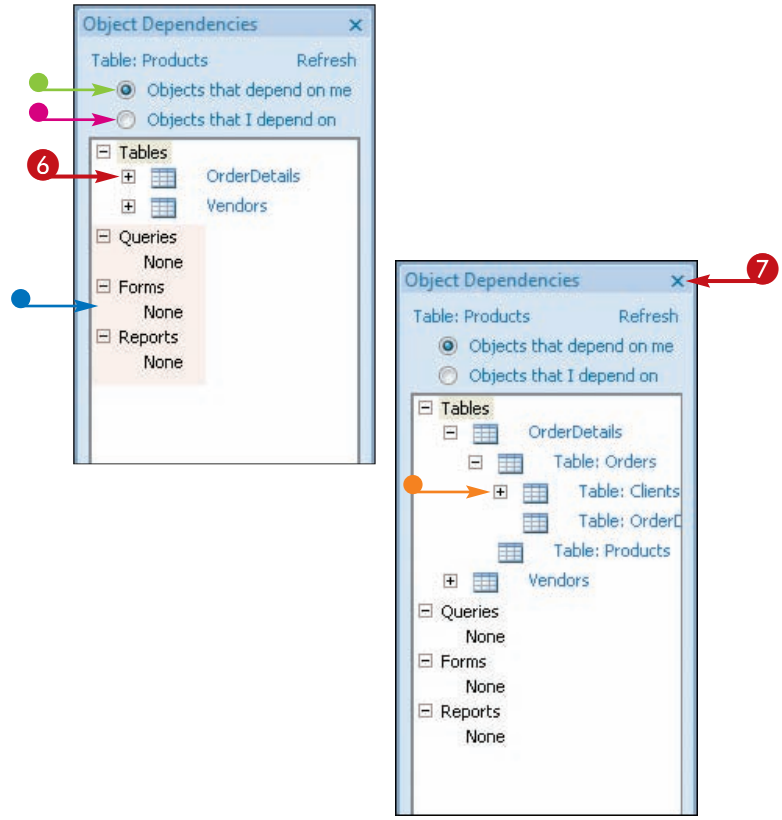
- Click here to see objects that are dependent on the chosen object (changes to).
- Click here to see objects that the chosen object is dependent on (changes to).
- If any queries, forms, or reports are based on the table, they appear here.

6 You can click a plus sign next to an object to view its own dependencies.

The object's dependencies appear.

- If any of those dependencies have plus signs next to them, you can click them to expand them, too.

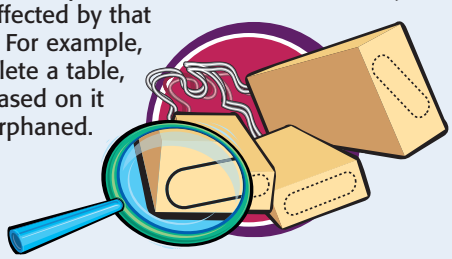
7 Click here to close the task pane when finished.



TIPS

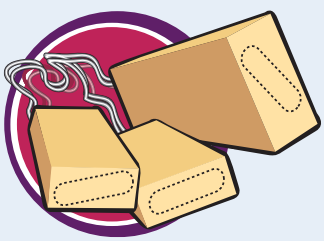
Why would I need to view object dependencies?

In a complex database, almost every object depends on some other object. Very rarely would a table stand alone. Therefore, you should not delete an object until you understand what other objects will be affected by that deletion. For example, if you delete a table, a form based on it will be orphaned.



Is there any way to see all the dependencies for all objects at once?

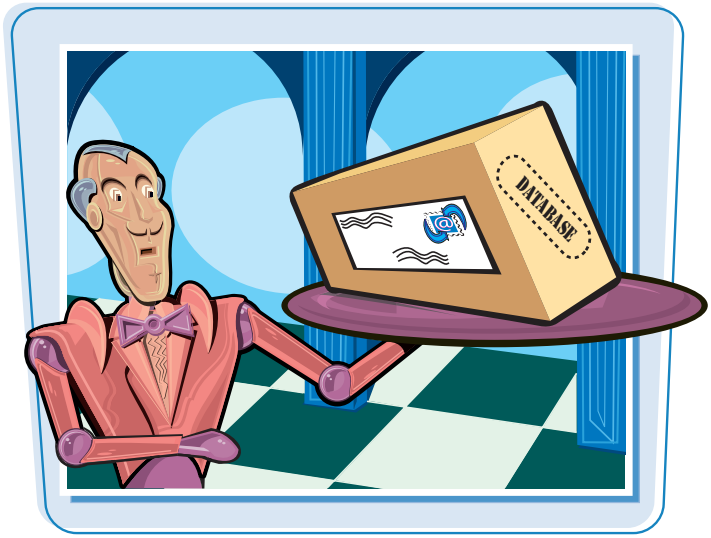
Yes. Use the Database Documenter feature to do just that. It is covered in the next section, "Document the Database."



Document the Database

You can use the Database Documenter feature to generate a full report about the database, including all the details about each object and its relationships and dependencies.

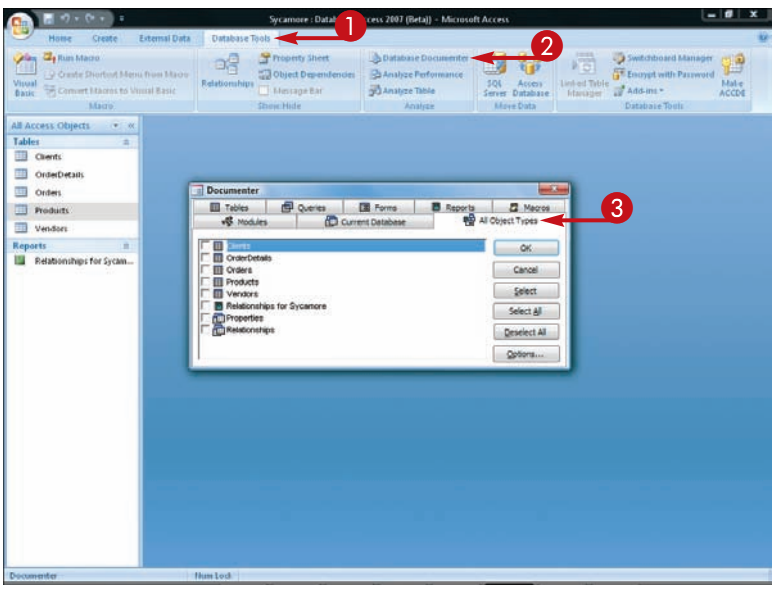
This report would be very useful to provide to another database designer to help him or her understand the structure of the database.



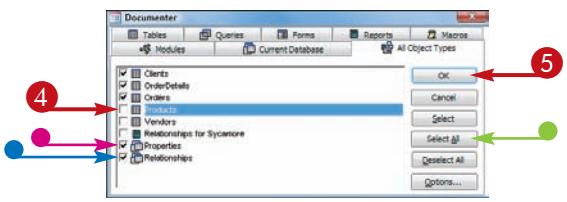
Document the Database

1. Click **Database Tools.**
2. Click **Database Documenter**.

   The Documenter dialog box opens.
3. Click the **All Object Types** tab.



   A list of all objects appears.
4. Mark the check boxes for each object you want to include.
   - You can click **Select All** to select all objects.
   - To include the database's properties, click here.
   - To include the Relationships diagram, click here.
5. Click **OK**.

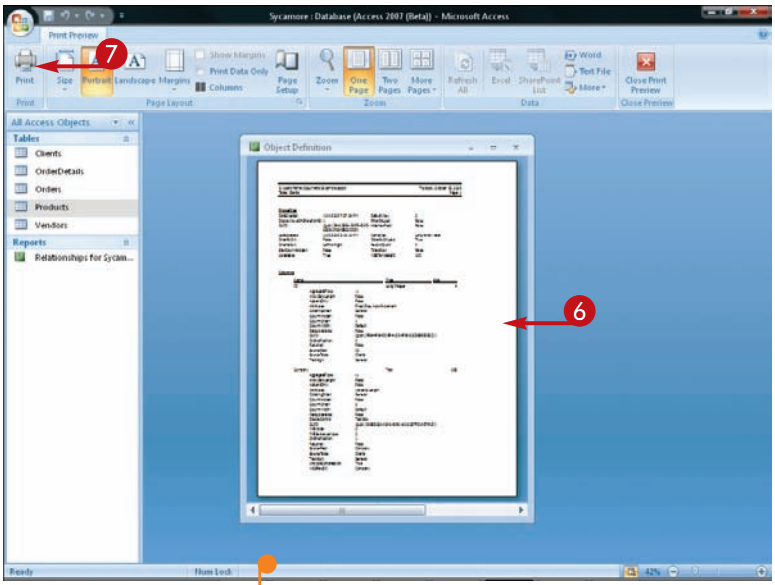


The information appears in a report in Print Preview.

6 To zoom in on the report, you click it.

You can click again to zoom out.

7 Click **Print**.



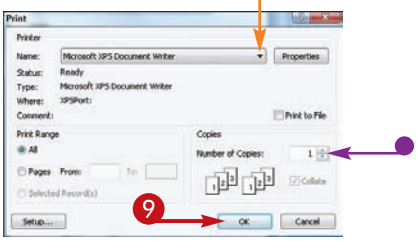
The Print dialog box opens.

8 Set any printing options if needed:

- You can click here and choose a different printer.
- You can click here to increase the number of copies.

9 Click **OK**.

The report prints.



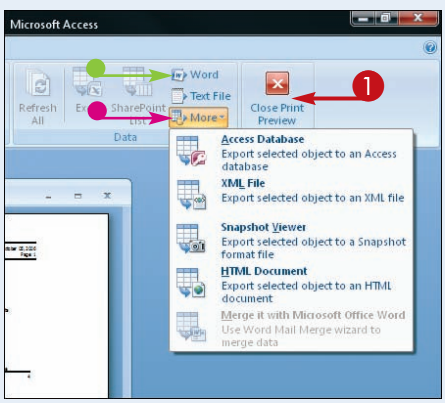
TIPS

How do I get out of Print Preview?

1 Click **Close Print Preview** on the Print Preview tab to go back to working with the database normally.

Can I export the report to another program instead of printing it?

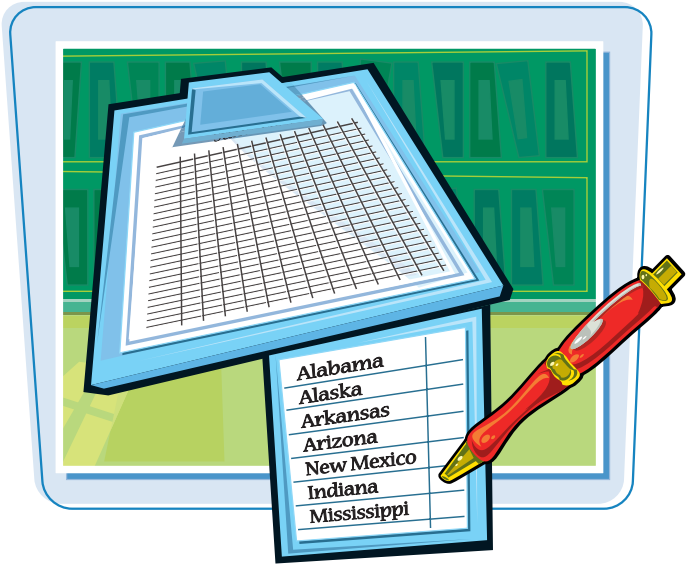
- Yes. On the Print Preview tab, in the Data group, there are several buttons for exporting to various formats.
- For additional formats, click **More** and select from the menu.



Understanding Lookups

A *lookup* is a relationship between a certain field in a table and either a list of items from another table or a manually entered list.

Users entering new records can use the lookup to select from a list rather than having to manually type an entry in the field. This cuts down on data-entry errors and makes data entry more intuitive.



Relationships Based on Numbers

Relationships between tables often work best when they are based on numeric values. For example, the CustomerID in the Customers table may be a number, so the related Customer field in the Orders table would also need to be a number. But when a user is entering a new order, she probably does not know the customer's ID number without looking it up.



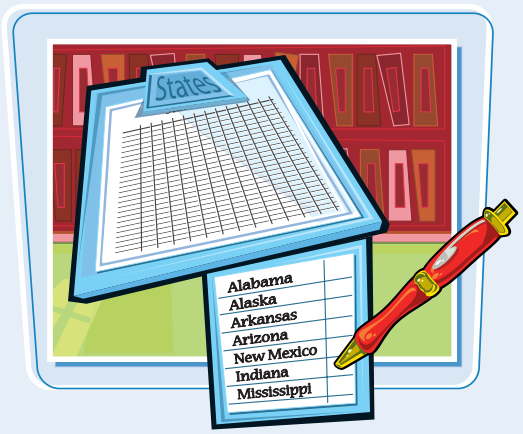
Lookups Match Numbers to Names

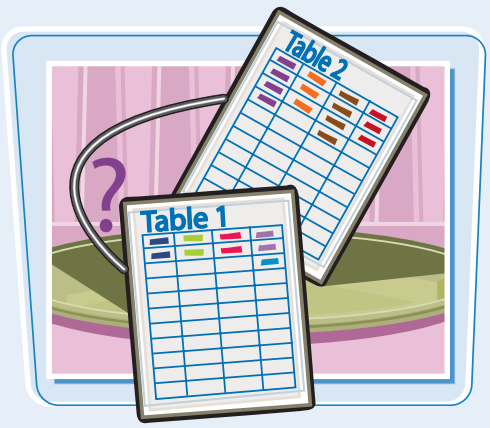
A lookup cross-references the related table and displays "friendly" fields from it that help users find the right record. For example, you could set up a lookup for the Customer field in the Orders table so that users could choose from a list of customer first and last names and be shielded from the customer ID numbers.



Lookups Based on Tables

To set up a table lookup, change the data type for the field to Lookup and then use the Lookup Wizard to specify the source table. You do not need to set up the relationship between the tables beforehand.



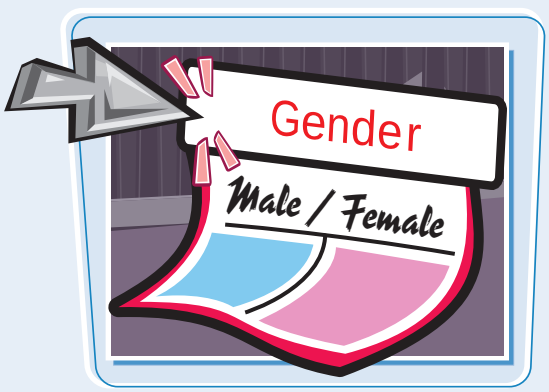


If There Is an Existing Relationship

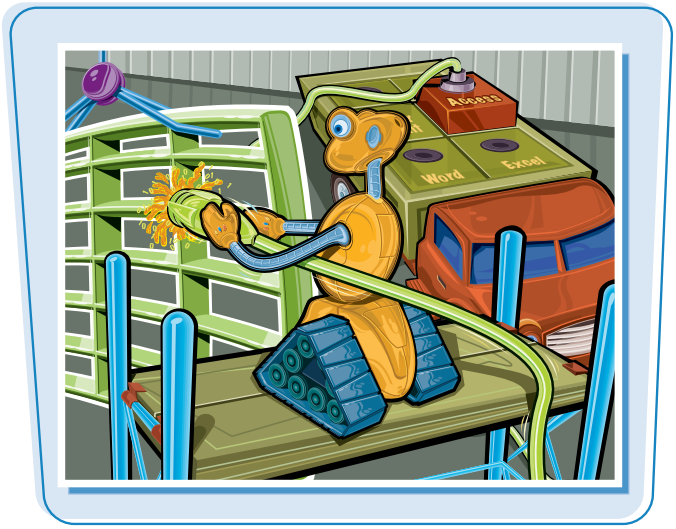
If you have an existing relationship established between the table containing the field and the table containing the lookup list, you may encounter an error in creating the lookup if the Lookup Wizard wants to create a different kind of relationship than exists already. The quickest way to solve this problem is often to delete the existing relationship and allow the Lookup Wizard to re-create it.

Lookups Based on Lists That You Type

If the list of entries to appear on the drop-down list is small or if it will never or seldom change, it may be overkill to put the entries in a separate table. In cases such as this, you may prefer to create a lookup based on entries that you set up yourself. The Lookup Wizard can create this type of lookup too and can prompt you for the entries to use.



Create a Table for Use As a Field Lookup

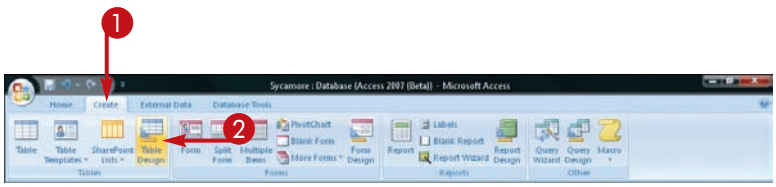


If the values you want for your lookup list already exist in another table, that is fine. But if they do not, you will need to construct a new table for the values. Lookup tables are typically very simple, consisting of only one or two fields.

Follow the steps in this section only if the data for the list does not exist already in another table.

Create a Table for Use As a Field Lookup

1. Click **Create**.
2. Click **Table Design**.



A new table opens in Table Design view.

3. Type a name that describes the list.

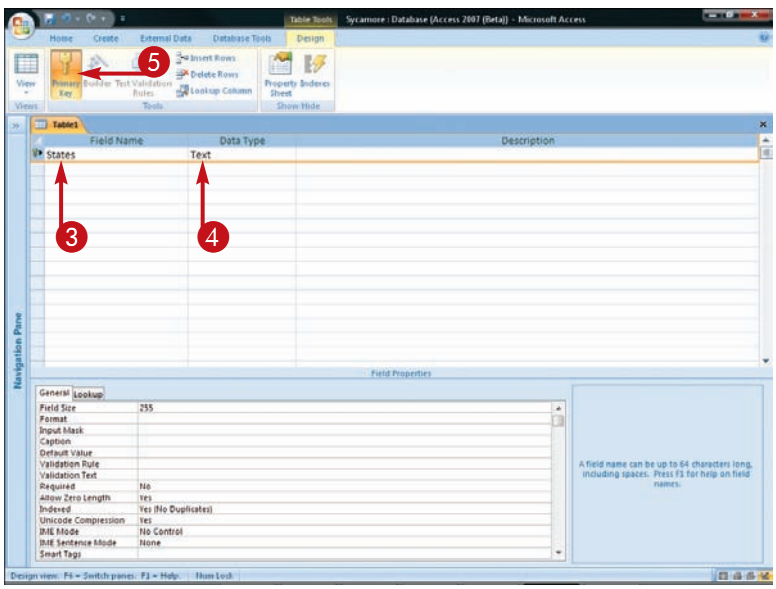
***Note:** It does not need to exactly match the field in the other table that will be looking up from it.*

4. Set the data type as appropriate.

***Note: Text** is usually appropriate.*

5. Click **Primary Key**.

A key appears next to the field, indicating that it is the primary key.



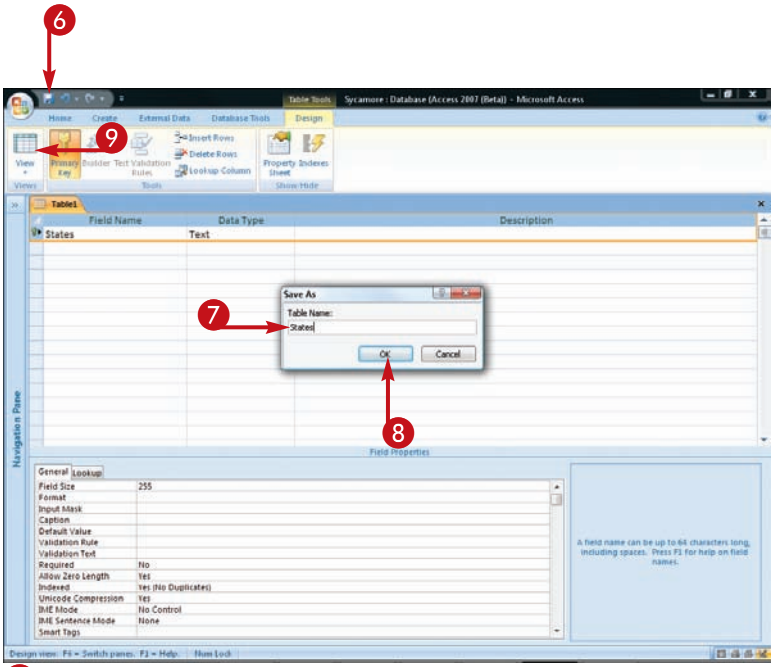
6 Click .

The Save As dialog box opens.

7 Type a name for the lookup table.

8 Click **OK**.

9 Click **View**.



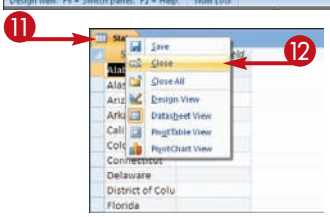
The view switches to Datasheet view.

10 Type the records into the table.

***Note:** It does not matter what order you enter them in because you can specify a sort order when you set up the lookup.*

11 Right-click the table's tab.

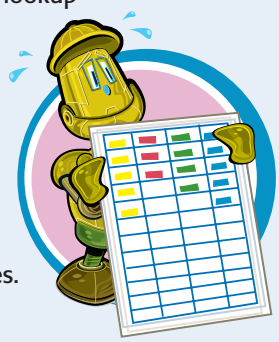
12 Click **Close**.



TIPS

Why go to the trouble of creating a table?

A table makes editing the lookup list later much more convenient. With a lookup that consists of manually entered values, the only way to edit the values is through the field's properties in Table Design view, which can be inconvenient. A lookup table can also be reused for multiple lookups in different tables.



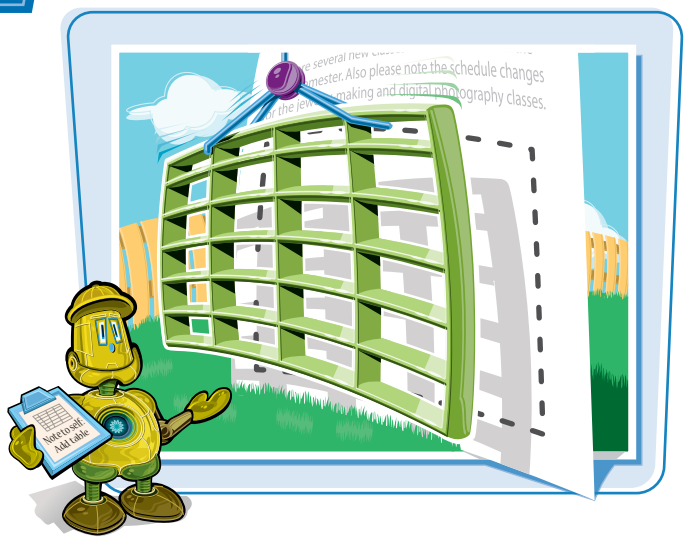
Does the lookup table have to have a primary key defined?

No, that is not necessary. However, assigning a primary key for every table is considered good housekeeping practice in a database. In addition, setting a field as a primary key is a good way to ensure that it contains no duplicate values.



Create a Field Lookup Based on a Table

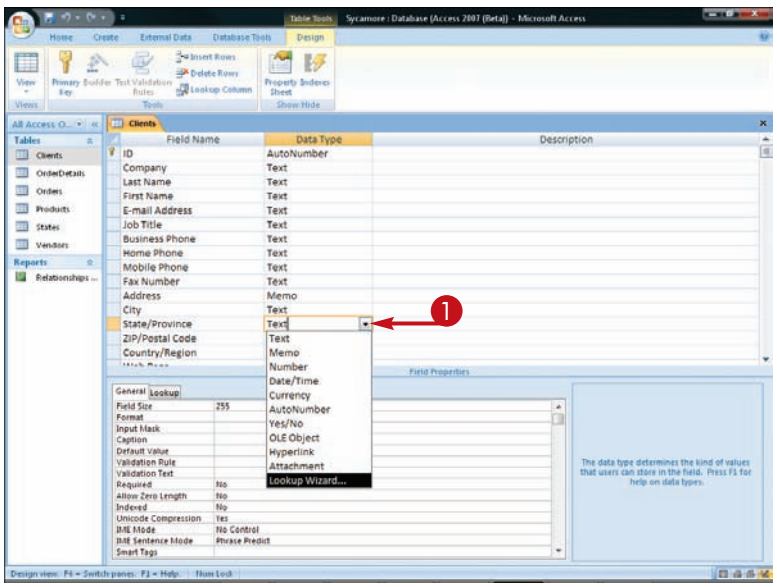
You can create a lookup for a field that references the values in another table. When the user enters data for that field, instead of the ordinary text box, a drop-down menu appears containing the values from the lookup. If the values in that other table change, the values in the lookup will change too.



Create a Field Lookup Based on a Table

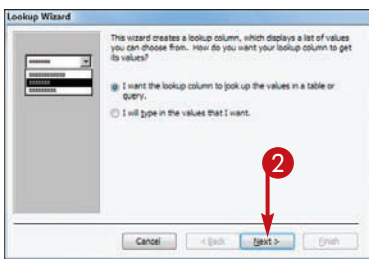
1. In Table Design view in the field to use the lookup, click here and click **Lookup Wizard**.

Note: *Make sure you are working in the table and field that should use the lookup, not the table containing the lookup values.*



The Lookup Wizard opens.

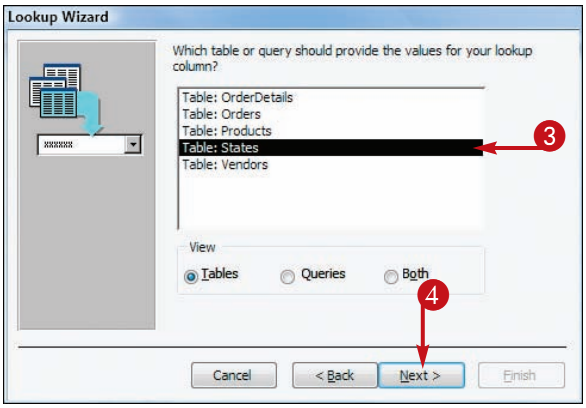
2. Click **Next**.



3. Click the table that contains the lookup values.

Note: *This can be a table that you created specifically for the lookup or an existing table that serves other purposes in the database.*

4. Click **Next.**

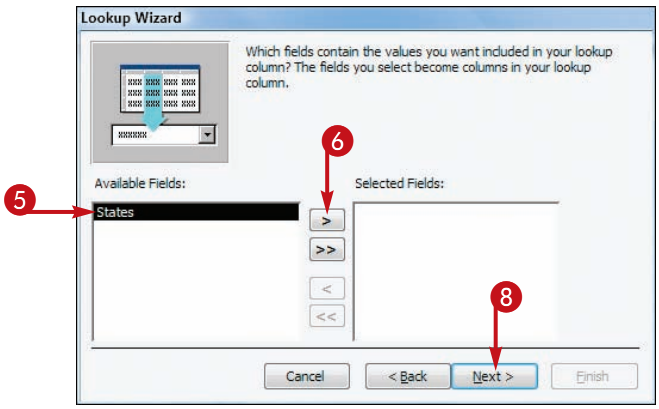


5. Click the field containing the values.
6. Click the **>** button.

   The field moves to the Selected Fields list.
7. If there are other fields in the table that you want to appear on the lookup list, repeat steps **5** to **6** to add them.

Note: *Access will add the primary key field automatically if you do not explicitly choose it.*

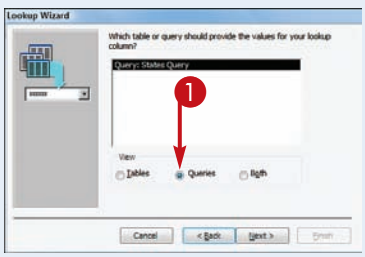
8. Click **Next**.



TIPS

Can I use a query instead of a table?

Yes. A *query* is a sorted or filtered version of a table, or a combination of tables. When two or more tables have relationships between them, you can create queries that join the data from them into a single datasheet. That way, you can use data from multiple tables as if the data resided together in a single object.

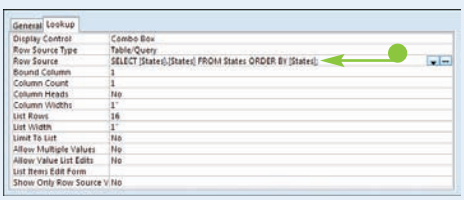


1. For access to any queries, click **Queries**.

Can I set up lookups without using the wizard?

- Yes, you can use the Lookup tab in the field's properties, placing a SQL statement in the Row Source box.

  You probably will not want to create lookups that way, but you might use the boxes on the Lookup tab to make minor changes to a lookup without having to totally re-create it.



continued

Create a Field Lookup Based on a Table *(continued)*

You can sort the list as part of the lookup specification. This can be useful if you want the list to appear in the lookup in a different order in one usage than in another. The lookup table's records need not have been entered in any particular order because the values can be sorted later.



Create a Field Lookup Based on a Table *(continued)*

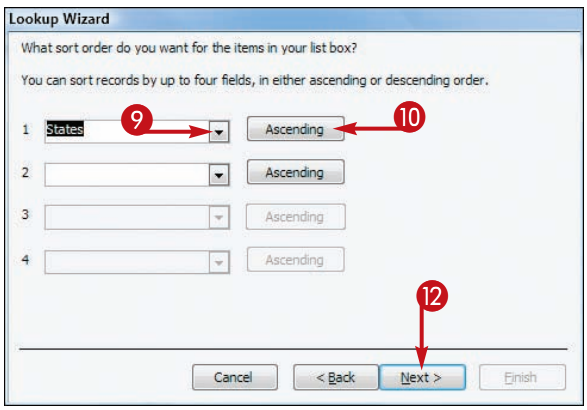
9. If you want to sort the list, click here and click the field name.

Note: *The default sort order is Ascending.*

10. If you want to toggle the default sort order to Descending, click **Ascending**.

11. If there are other fields that you want to sort by, repeat steps **9** to **10**.

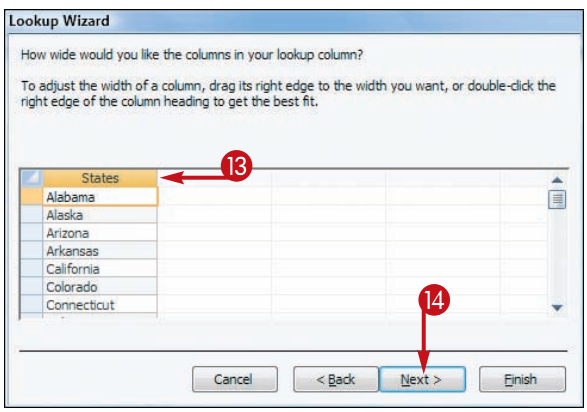
12. Click **Next**.



13. If you want to change the column width for the lookup list, drag the right edge.

    You can also double-click the right edge to autofit the column to the current contents.

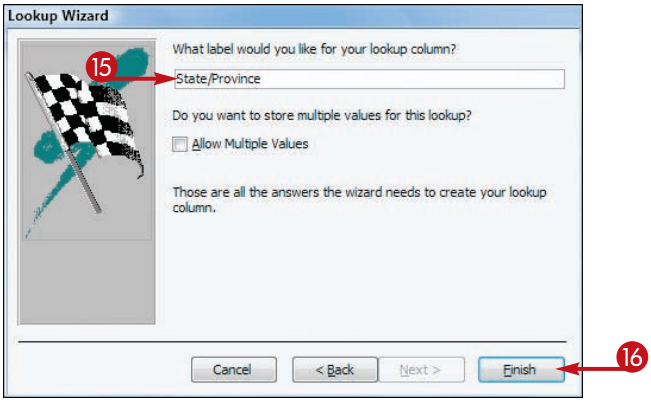
14. Click **Next**.



15 You can modify the label assigned to the field.

By default, the wizard uses the field name as the label.

16 Click **Finish**.



A prompt appears to save the table.

17 Click **Yes**.

The lookup is created. You can examine the lookup settings on the Lookup tab of the field's properties.



TIP

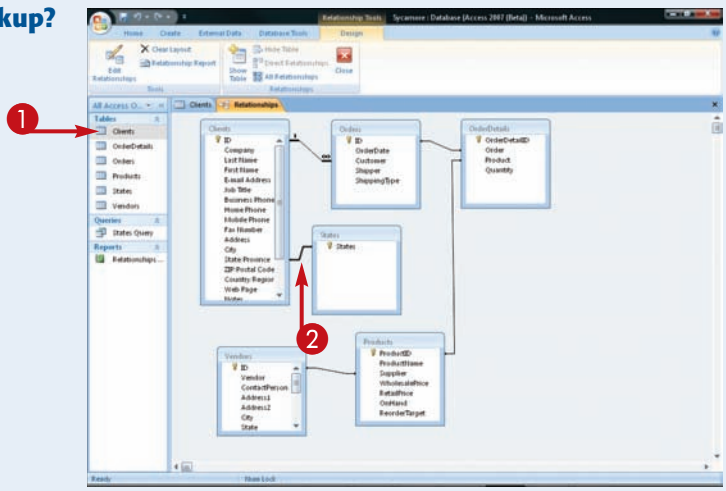
How can I make changes to the lookup?

To make small changes, use the Lookup tab in the field's properties. If you need to re-create the lookup, you will first need to delete the relationship that the Lookup Wizard created:

1 From the Relationships window, drag the lookup table into the layout if it is not already there.

2 Click the line between the lookup table and the other table.

3 Press Delete.



Create a Field Lookup with Values That You Specify

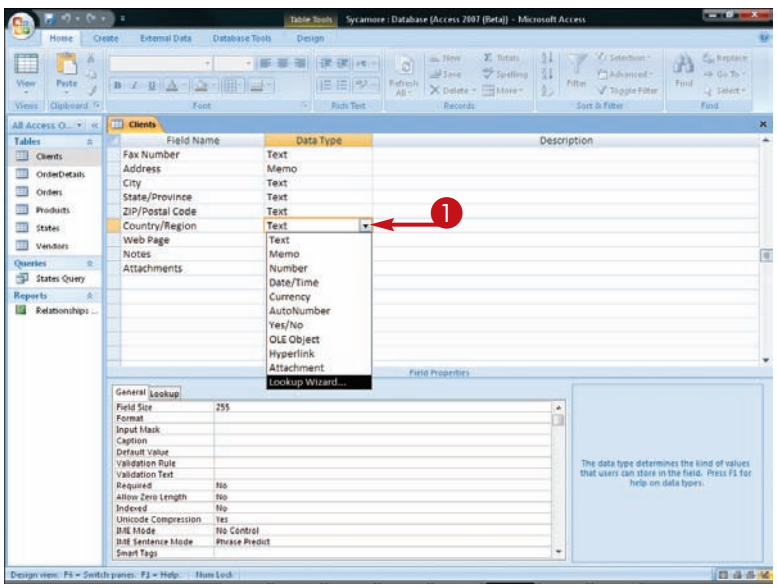
If the list from which you want users to choose for a field is fairly short and will not change frequently, you may prefer to create a lookup based on values that you enter into the Lookup Wizard. This creates a makeshift lookup table that exists only in the Lookup properties for the field. If you ever need to edit the list, you can make the changes from the properties.



Create a Field Lookup with Values That You Specify

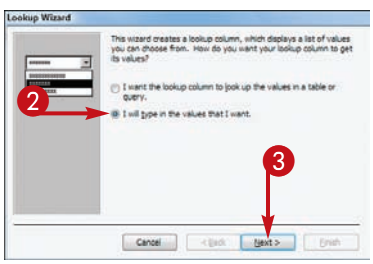
1. In Table Design view in the field to use the lookup, click here and click **Lookup Wizard**.

Note: *Make sure that you are working in the table and field that should use the lookup, not the table containing the lookup values.*



The Lookup Wizard opens.

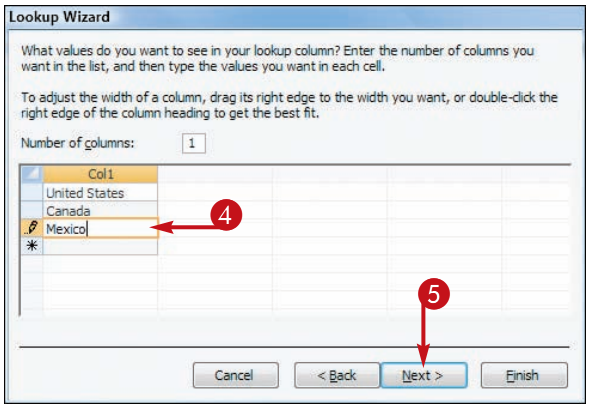
2. Click **I will type in the values that I want** (changes to).
3. Click **Next**.



4. Type the values to display in the lookup list.

Note: *It is most common to use a single column. Use multiple columns only if a single column cannot adequately represent the values.*

5. Click **Next**.

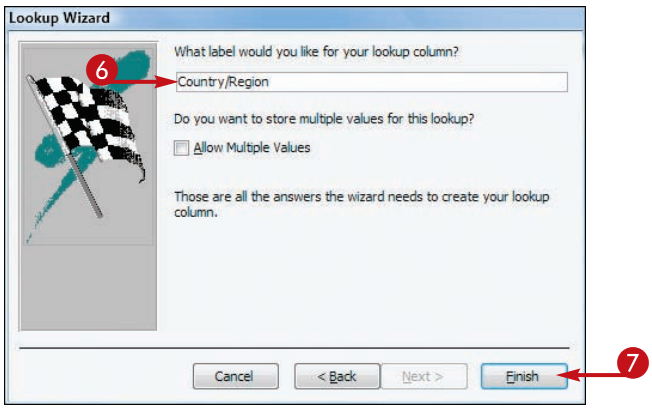


6. You can modify the label assigned to the field.

   By default, the wizard uses the field name as the label.

7. Click **Finish**.

   The lookup is created. You can examine the lookup settings on the Lookup tab of the field's properties.

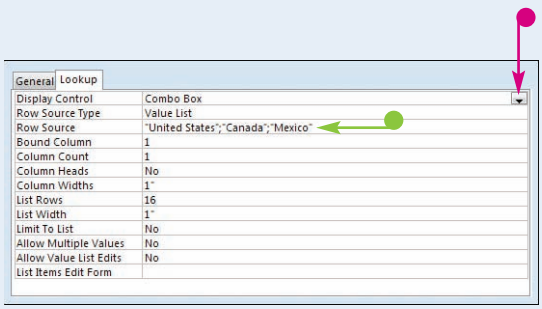




How can I change the values on the list?

On the Lookup tab of the field's properties, the Row Source box contains the values you specified for the list, each one in quotation marks, separated by semicolons.

- If you need to modify the list, type your changes directly into that text box, making sure you keep the correct syntax with the quotation marks and semicolons.

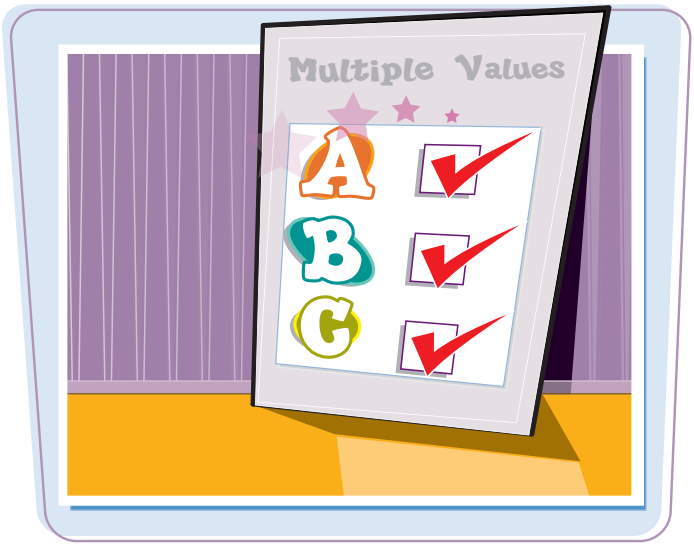


Are users limited to only the values on my list?

No, because the default display control is a combo box, which also enables users to enter their own values.

- If you want to restrict users to your values only, open the Display Control property's list and choose List Box.

Set Up a Multivalued Field



A multivalued field can store more than one value. For example, if you have a certain product that comes in three colors, you could use a multivalue Color field rather than have three separate records for that product in the table.

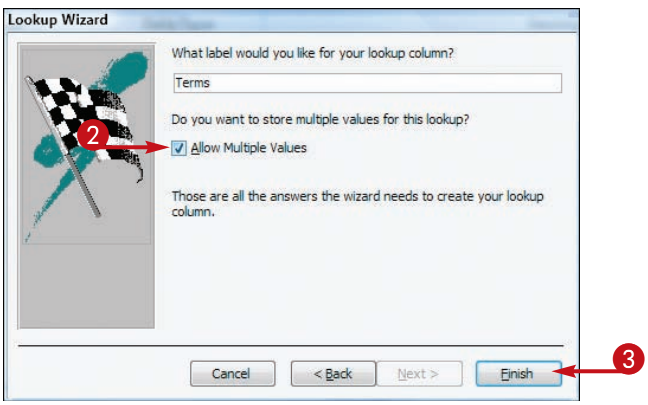
Creating a multivalued field is the same as creating any other lookup, except for the last option in the wizard.

Set Up a Multivalued Field

1. Follow steps **1** to **15** in "Create a Field Lookup Based on a Table."

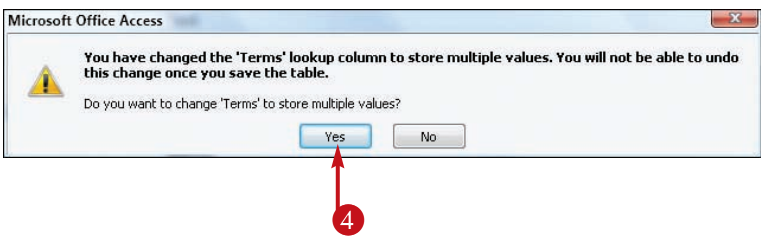
   OR

   Follow steps **1** to **6** in "Create a Field Lookup with Values That You Specify."
2. Click **Allow Multiple Values**.
3. Click **Finish**.



A warning appears about changing the field to store multiple values.

4. Click **Yes**.

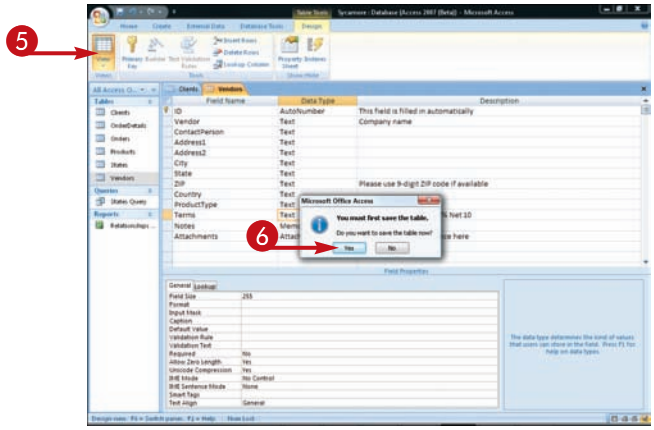


5 Click **View** to switch to Datasheet view.

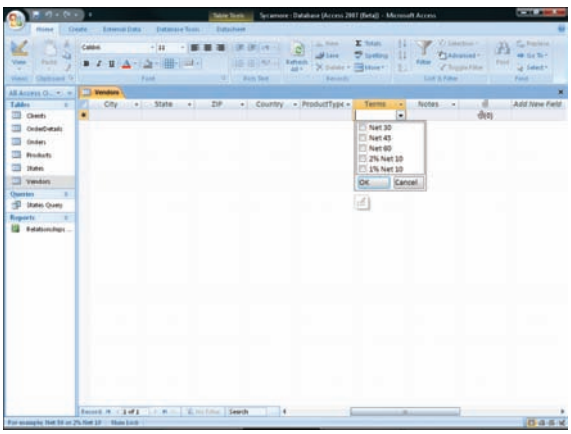
A prompt appears to save the table.

6 Click **Yes**.

The lookup is created with multiple values allowed.



The lookup is displayed with multiple values allowed in the chosen field.



Note: *See Chapter 2 for details about entering values into the field.*



How can I change the values in a multivalued list?

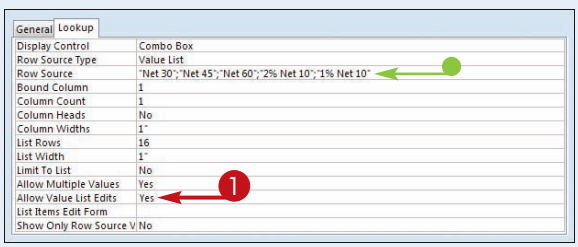
The same way as with any other lookup:

- Make changes from the Lookup tab in the properties for the field from Table Design view.

Can I edit the list the same as with a normal multivalued list (from Datasheet view)?

Yes, but you have to make one small change to the field's Lookup properties in Table Design view:

1 On the Lookup tab, set Allow Value List Edits to **Yes**.



CHAPTER



Finding and Filtering Data



Access 2007 provides many ways of locating individual data records within your database. You learned in Chapter 2 about sorting a datasheet, one of the simplest methods of looking something up. In this chapter, you will learn about two other ways: using the Find feature to find a text string and using the Filter feature to show only records that match criteria that you specify.

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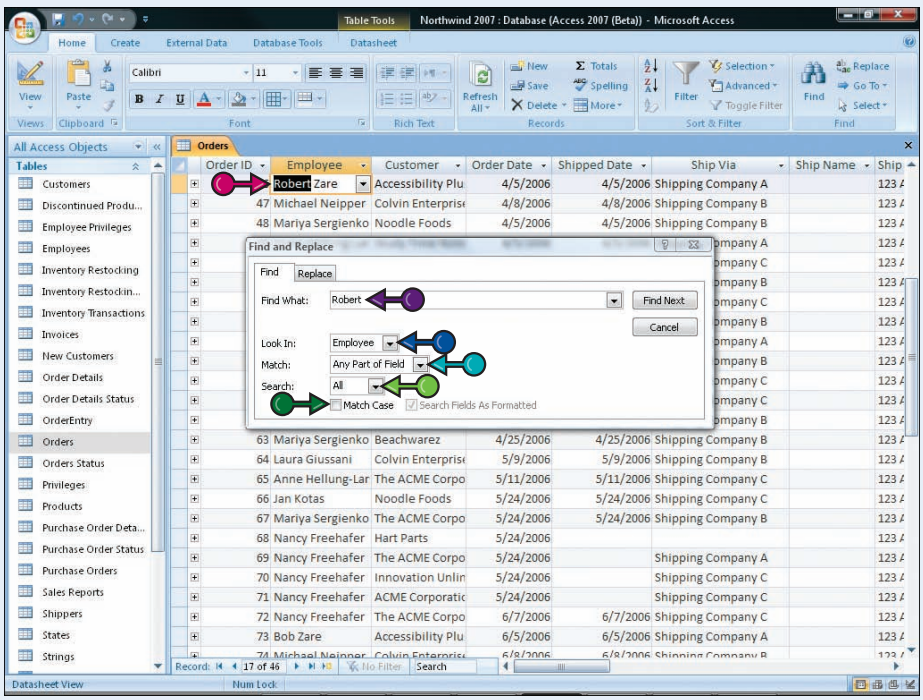
Understanding Find and Replace

Find and Replace is a single feature with two parts. On the Find tab, you can find text strings within records. On the Replace tab, you can do the same thing, except you can also optionally replace the found data with some other text that you specify.

Find What
Specify a text string or numeric value to find.

Look In
You can optionally limit the search to a certain field.

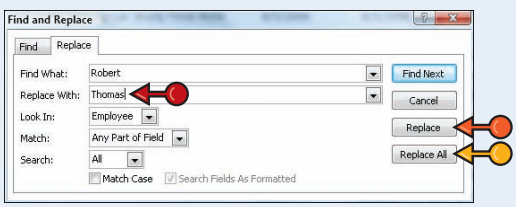
Match
You can look for exact matches of the whole field or partial matches.



Search
You can search above or below the currently selected record.

Match Case
You can choose whether or not the search is case-sensitive.

Found string
The found string is highlighted in the datasheet.



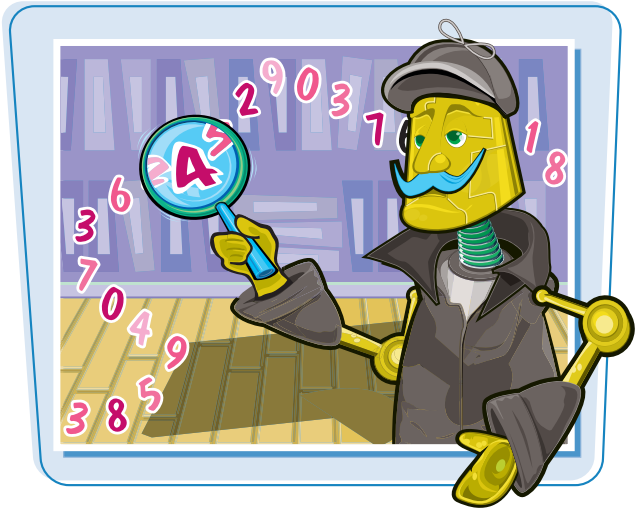
Replace With
The Replace tab has a Replace With box, in which you can enter the replacement string.

Replace All
Click **Replace All** to do a global replace (but be cautious about doing so; it might replace more than you intended).

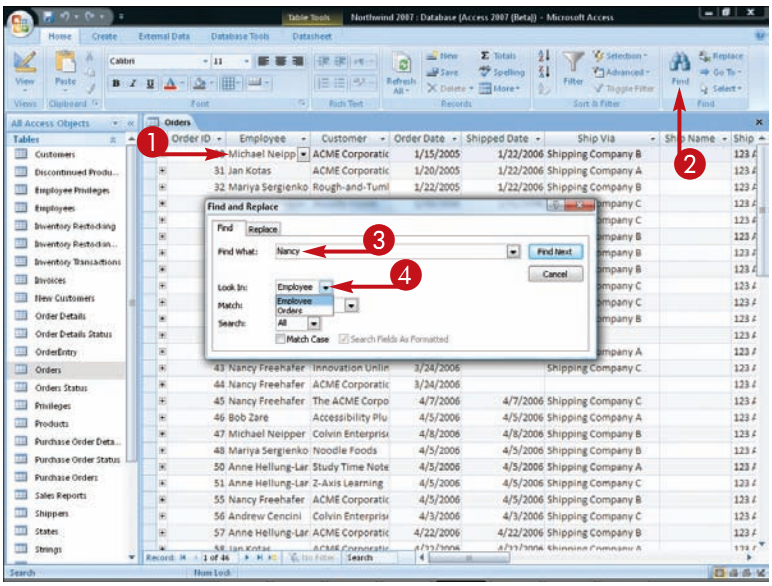
Replace button
Click **Replace** to replace one instance and move to the next instance.

Find Data Using Find and Replace

You can use the Find feature to locate a text string or numeric value within any field in a datasheet. You can search in one particular field, or you can open up the search to include all fields.



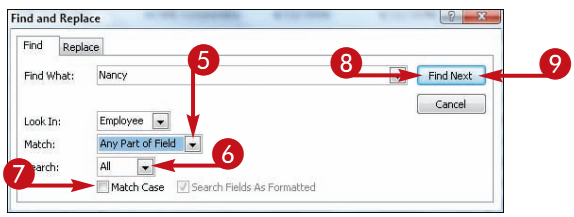
Find Data Using Find and Replace



1. If you plan to limit the search to only one field, click in that field's column, in any row.
2. On the Home tab, click **Find**.

   The Find and Replace dialog box opens with the Find tab displayed.
3. Type the text to find.
4. Click here and select either the table name or the current field name.
5. Click here and select what to match.

***Note:** The choices are Any Part of Field, Start of Field, and Whole Field.*

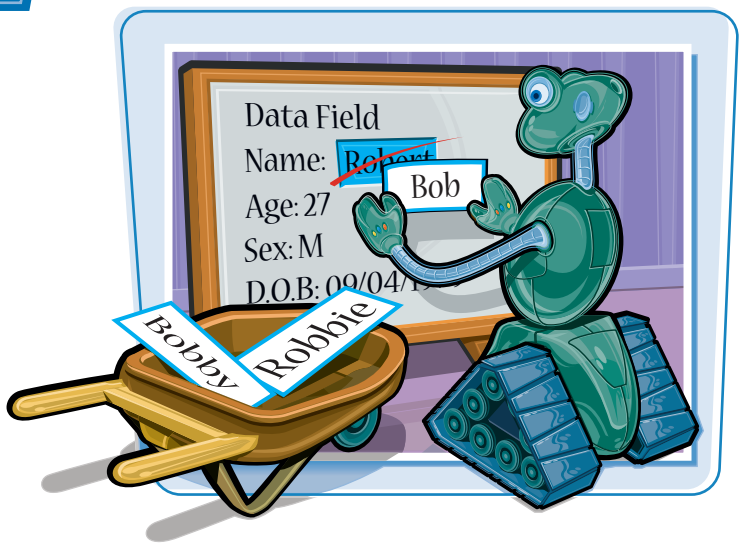


6. Click here and choose Up or Down if you want to limit the search to one direction.
7. You can click here to make the search case-sensitive.
8. Click **Find Next**.

   The datasheet view jumps to the first instance and highlights it.
9. Click **Find Next** to find the next instance.
10. Continue clicking **Find Next** until the instance that you want is found.

Replace Data Using Find and Replace

You can take the Find operation one step further by replacing the found value with other text that you specify. For example, if you find out that Robert prefers to be known as Bob, a replace operation can make the change.



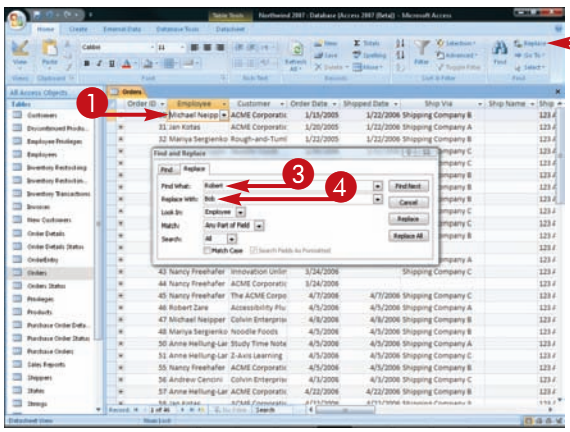
Replace Data Using Find and Replace

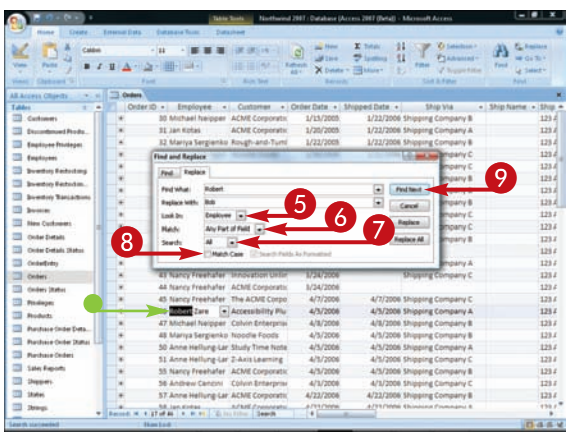
1. If you plan to limit the replacement to only one field, click in that field's column, in any row.
2. On the Home tab, click **Replace**.

   The Find and Replace dialog box opens with the Replace tab displayed.
3. Type the text to find.
4. Type the text to substitute for the found text.
5. Click here and select either the table name or the current field name.
6. Click here and select what to match.

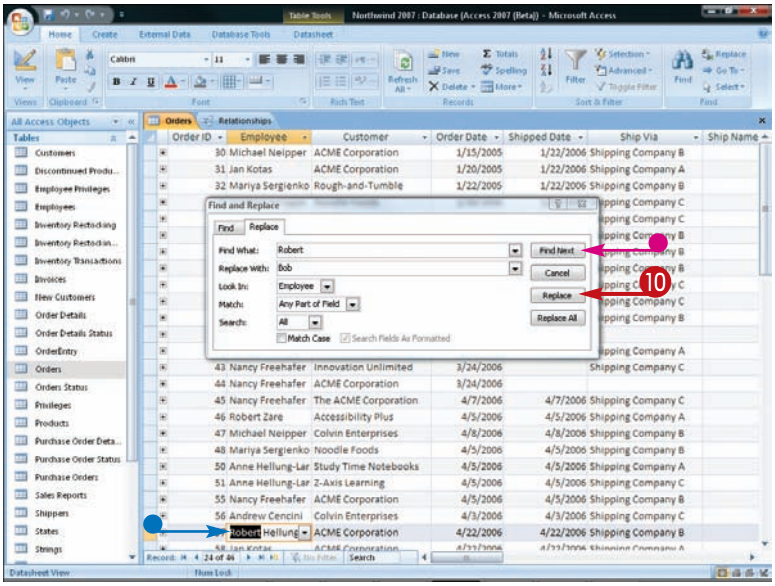
***Note:** The choices are Any Part of Field, Start of Field, and Whole Field.*

7. Click here and choose Up or Down if you want to limit the search to one direction.
8. You can click here to make the search case-sensitive.
9. Click **Find Next**.
   - The datasheet view jumps to the first instance and highlights it.





10. Click **Replace**.
    - If you do not want to replace that instance, you can click **Find Next** to bypass it.
    - The next instance of the text is highlighted.



11. Continue clicking **Replace** or **Find Next** until this message appears.
12. Click **OK**.

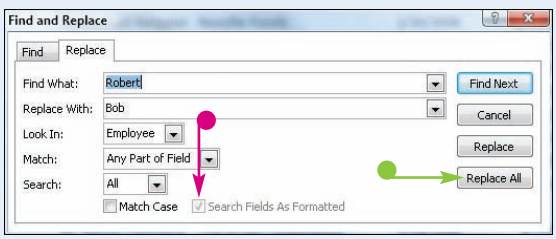


TIPS

How can I replace all instances at once?

- Instead of clicking **Replace**, click **Replace All**.

  Be careful, however, that you do not make any unintentional replacements. For example, even though Robert prefers to be called Bob, his email address might still call him Robert; a global replace operation would change the email address and make it incorrect.

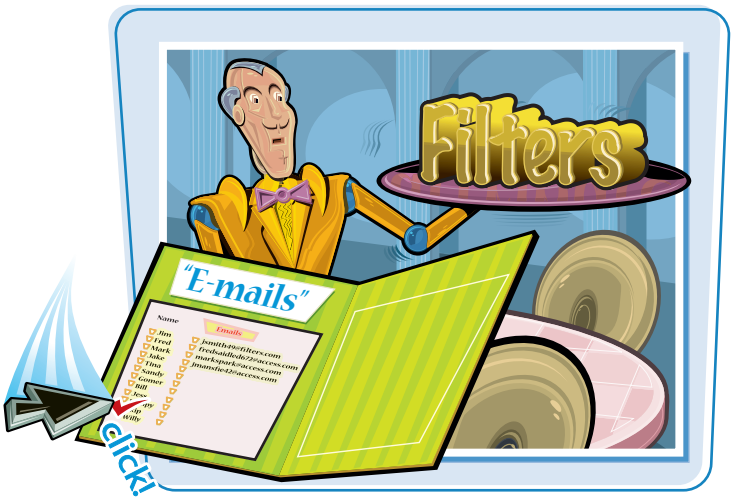


What is Search Fields As Formatted, and why is it unavailable?

- If a field's Text Format property is set to RichText (in Table Design view), the field can hold formatting as well as text. For such fields, you can search for strings formatted a certain way. By default, most fields are plain text, so this check box is not available.

Filter to Show Only Blank or Nonblank Entries

One of the most common filter operations is to filter for records that are either blank or nonblank for a particular field. For example, you may want to find all customers for whom the Email Address field is nonblank so that you can send out an email announcement.



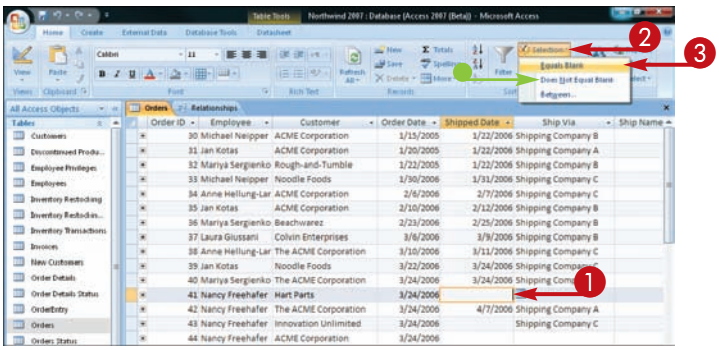
Filter to Show Only Blank or Nonblank Entries

RUN THE FILTER

1. Click in the column for the field, in a row where that field is blank.
2. Click **Selection**.
3. Click **Equals Blank** to show only blank entries.

- Alternatively, click **Does Not Equal Blank** to show only nonblank entries.

- Records that do not match the specification are temporarily hidden.

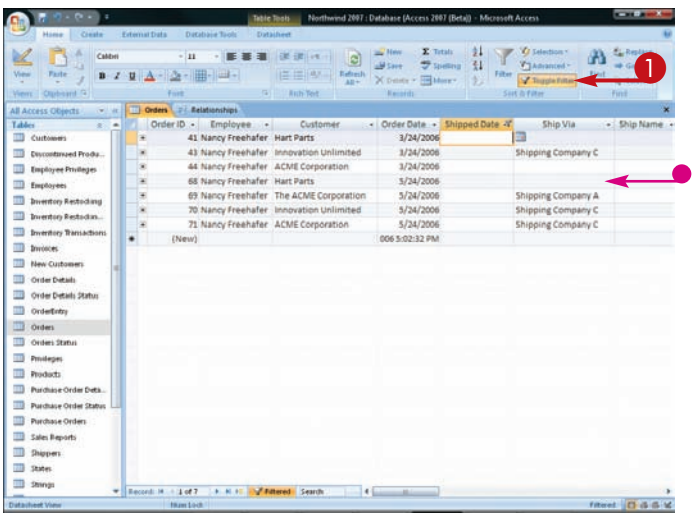


REMOVE THE FILTER

1. Click **Toggle Filter**.

   The filter is removed.

Note: *To reapply the filter, click* ***Toggle Filter*** *again.*



Filter by Selection

You can filter not only for blank versus nonblank entries, but also for any specific value in any field. For example, you may want to find all the customers who work for a certain company or all the people with a certain job title.



Filter by Selection

1. Click in a field that contains the value for which you want to filter.

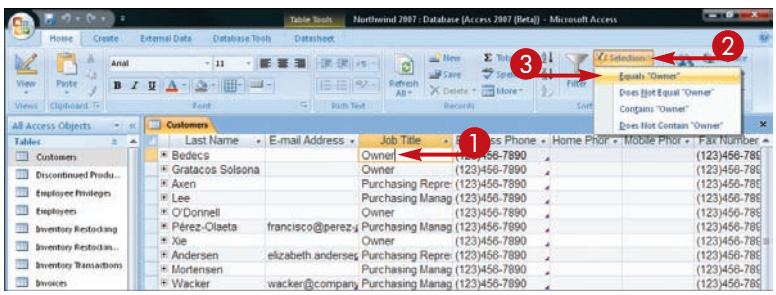
Note: *For example, to filter for* Owner *in the Job Title field, click any instance of "Owner."*

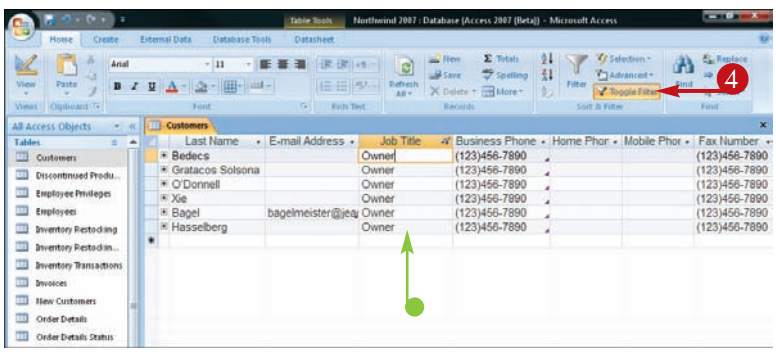
2. Click **Selection**.
3. Click the option that you want.

Note: *The Equals options look only for entries matching the entire field. The Contains options look for the specified entry as any part of the field.*

- Only records that match the filter are displayed.

4. Click **Toggle Filter** to remove the filter when finished.





Filter for Multiple Values

Filter by Selection works great, but it finds only one value. For example, you cannot set it to find people with job titles of either "Owner" or "CEO."

To filter for multiple values, you can use the Filter button on the Datasheet tab. It opens a floating pane that contains check boxes for each value in that field, and you can select multiple values for which to filter.



Filter for Multiple Values

1. Click in the column for the field by which to filter.

Note: You can click in any row; it need not be a row containing one of the values to include.

2. Click **Filter**.

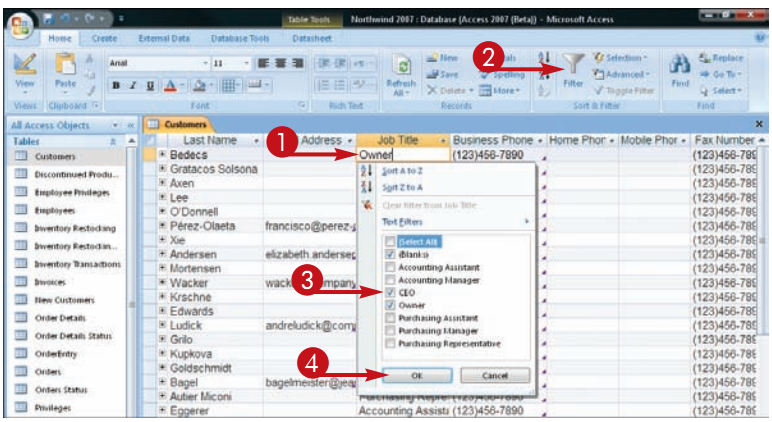
   A Filter pane appears below the selected field.

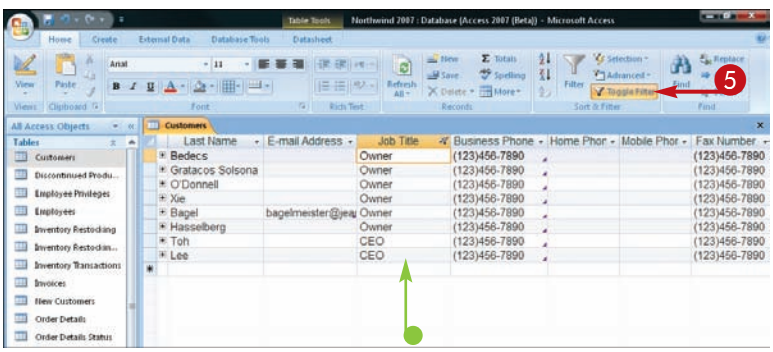
3. Clear the check box next to any value that you do not want to include.

4. Click **OK**.

   - The list is filtered to show only the values that you chose.

5. Click **Toggle Filter** to remove the filter when finished.





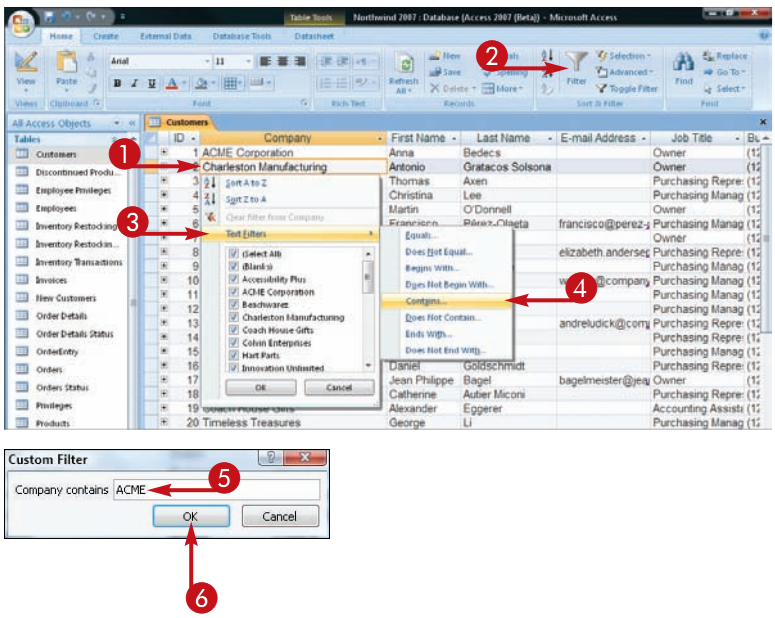
Using Text Filters

Access provides a special set of filters for working with text values. These filters take into account that text strings often contain more than just the searched-for value.



For example, if different people entered the records, the same company may be listed as "ACME," "The ACME Corporation," or "ACME Corp." You can use a text filter to find all forms of the name.

Using Text Filters



1. Click in the column for the field by which to filter.

Note: *You can click in any row; it need not be a row containing one of the values to include.*

2. Click **Filter**.

   A Filter pane appears below the selected field.

3. Click **Text Filters**.

4. Click the text filter to apply.

   For example, to find all records that contain a certain text string, choose **Contains**.

   The Custom Filter dialog box opens.

5. Enter the text string for the filter.

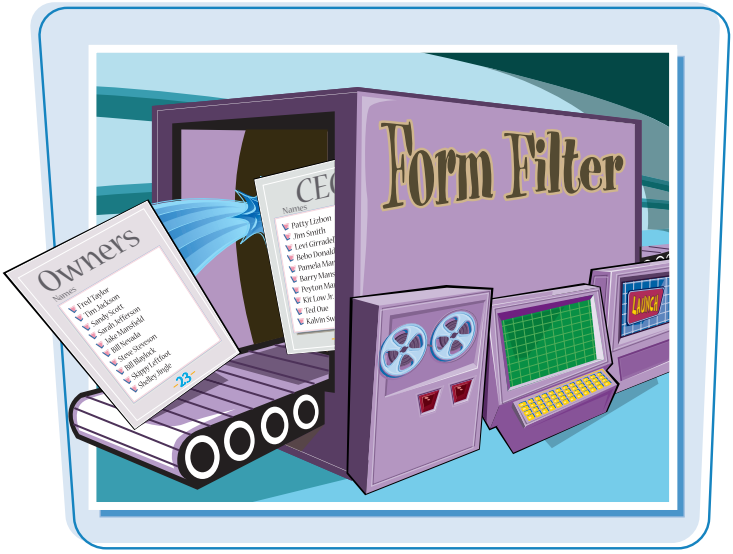
6. Click **OK.**

   The filter is applied.

Note: *You can remove the filter by clicking* ***Toggle Filter****, the same as with any other filter.*

Filter by Form

Filtering by form enables you to filter by multiple fields and specify criteria for as many fields as you like.

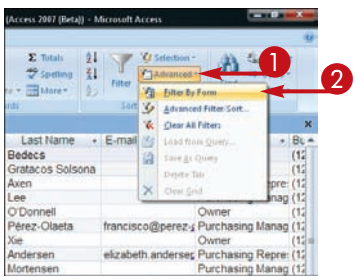


When you filter by form, you can combine the criteria using AND, OR, or a combination of the two. An AND combination finds records where both criteria are met; an OR combination finds records where at least one criterion is met.

Filter by Form

USING AND

1. Click **Advanced**.
2. Click **Filter By Form**.



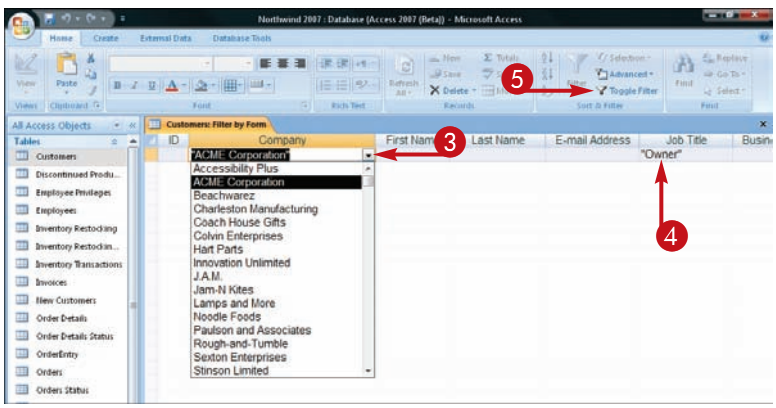
A Filter by Form sheet opens.

***Note:** If you previously filtered, the existing filter specification may appear. Delete any unwanted criteria.*

3. Open the list for a field and click the value that you want.
4. Repeat step **3** for other fields as needed.

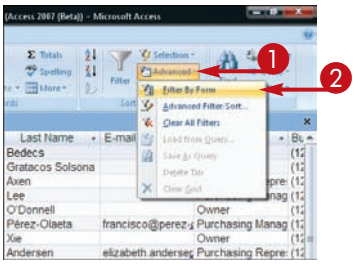
   The results will show only records that meet all conditions.
5. Click **Toggle Filter**.

   The filter results are displayed.



USING OR

1. Click **Advanced**.
2. Click **Filter By Form.**



A Filter by Form sheet opens.

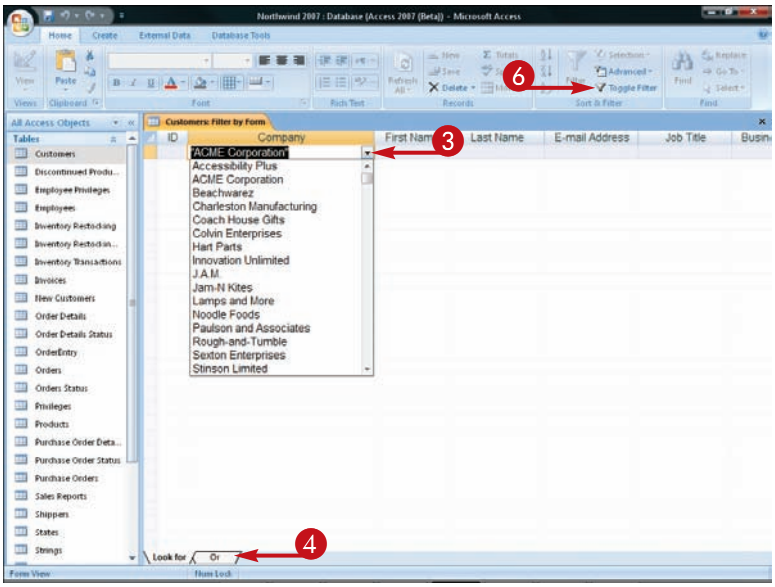
3. Open the list for a field and select the value that you want.
4. Click the **Or** tab.

A blank Filter by Form page opens.

5. Repeat step **3** to select another criterion.

Note: *Each page represents a separate criterion. Records will be included that match the criteria on any page.*

6. Click **Toggle Filter** to apply the filter.



TIPS

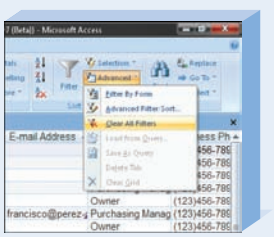
Why is there already criteria entered in the form?

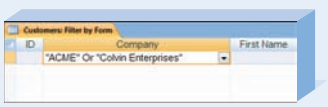
If you previously performed a filter operation, the last filter that you ran appears in the form, for your convenience. Delete it from there if you do not want it.

Another way to clear all old criteria is to click the **Advanced** button (from the datasheet, not from the Filter by Form page) and click **Clear All Filters**. If the Clear All Filters command is not available, there are no previously used filters to clear.

Is there an easier way to set up OR conditions for the same field?

Yes, you can manually type in a specification for a field. For example, if you want records where the Company field is either "ACME" or "Colvin Enterprises," you could click in the Company box and type **"ACME" OR "Colvin Enterprises"**. Make sure that you include the quotation marks and the word *OR*. You can string together many OR statements for a single field. The Or tab is needed only if the Or condition involves multiple fields.





Save a Filter As a Query

You can save a Filter by Form filter as a query, so it can be rerun later without having to set it up again.

When you save a filter, a new query is created as a new object in the database. It works just like the queries you will learn to create and modify in upcoming chapters.



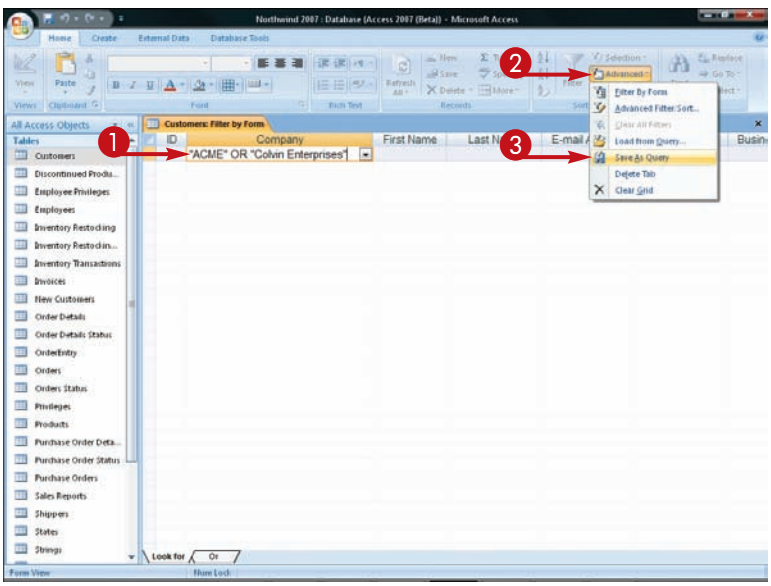
Save a Filter As a Query

SAVE THE FILTER

1. Create a filter and display it in Filter by Form.

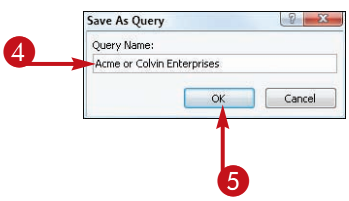
Note: *See the preceding section for help if needed. Do not apply the filter yet.*

2. Click **Advanced**.
3. Click **Save As Query**.

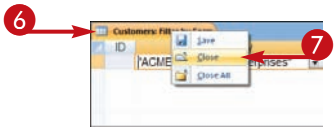


The Save As Query dialog box opens.

4. Type a name for the query.
5. Click **OK**.



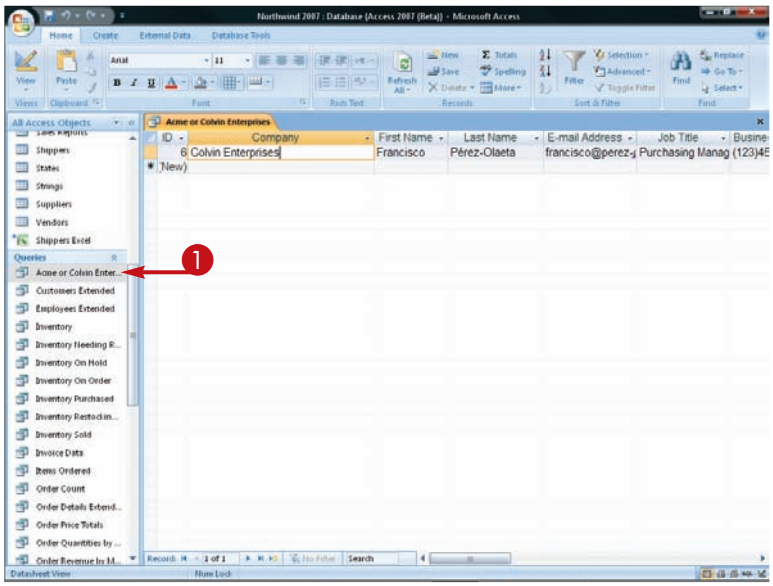
6. Right-click the Filter by Form tab.
7. Click **Close**.



RUN THE SAVED FILTER

1. In the Objects list, double-click the query (filter) that you saved.

   The results open in a new datasheet.

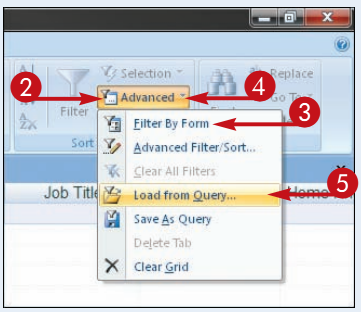


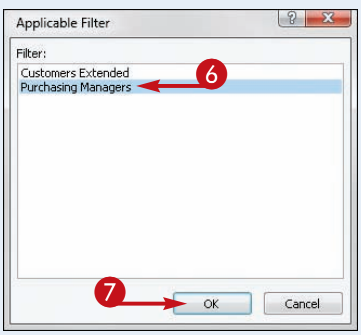


How can I modify a saved filter in Query by Form?

1. Display the table in Datasheet view.
2. Click **Advanced**.
3. Click **Filter By Form**.
4. Click **Advanced**.
5. Click **Load from Query**.
6. Click the query from which to load.

   Only queries pertaining to this table appear.
7. Click **OK**.





CHAPTER 7

Creating Simple Queries



Queries enable you to save specifications for sort/filter operations as reusable objects. They are the backbone of any data retrieval system and enable users to quickly pull the needed information from large tables.

In this chapter, you will learn how to create simple, effective queries that sort and filter the data from one or more tables.

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Create a Query with the Simple Query Wizard 122
Start a New Query in Query Design View 124
Insert, Arrange, and Remove Query Fields 126
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Filter a Query for a Specific Value 132
Specify a Range of Values 133
Specify a List of Values 134
Hide a Field in the Query Results 135
Combine Criteria 136
Limit the Records Returned 137

Understanding Queries

Queries are like costumes that tables wear. They display the data from the table in some modified way, such as sorted by a certain field or filtered to show certain values in a field.

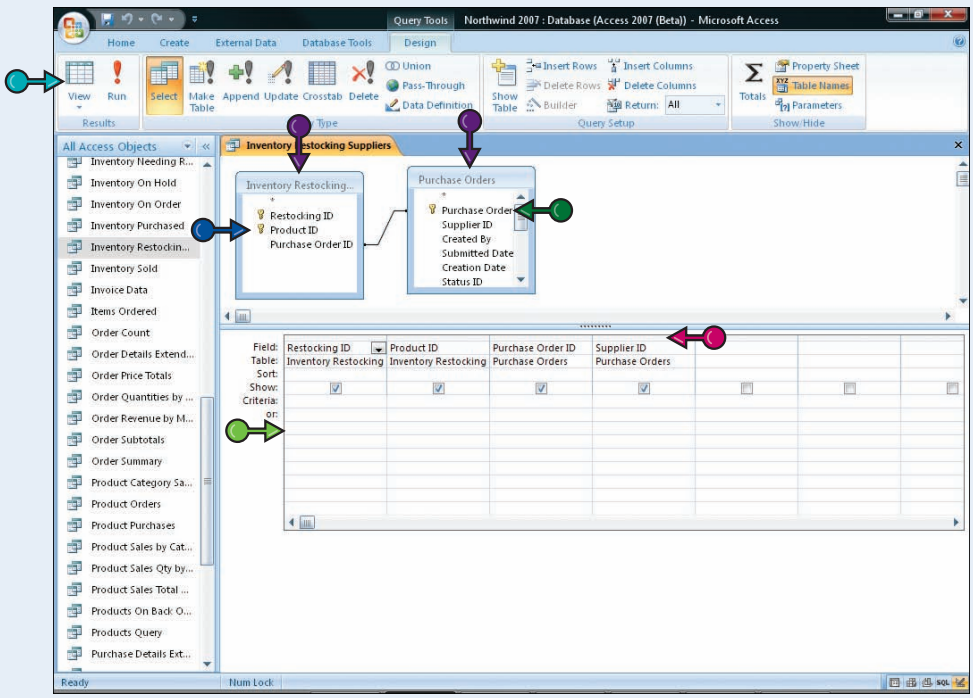
In Design view, a query appears as a grid at the bottom into which you drag fields from the table(s).

When you run a query, the results appear in Datasheet view, just like a table.

Tables
A query can pull fields from more than one table, provided they have a relationship between them.

Field lists
Each table's complete field list appears in a separate window.

View button
To run the query, click **View**.



QBE grid
This grid, called the Query By Example (QBE) grid, contains the fields chosen to be in the query, one field per column.

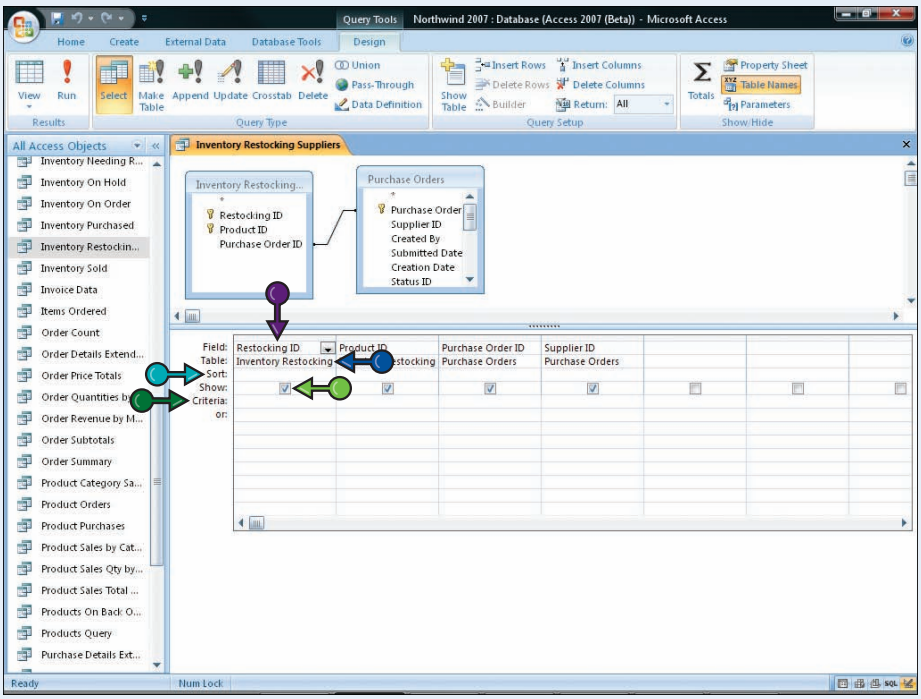
Add a field
To add a field to the QBE grid, double-click it in the field list or drag it to the grid.

Select a field
To select a column on the grid, click the thin bar above the field.

Field
The Field row shows the field name.

Table
The Table row shows what table the field came from.

Sort
The Sort row indicates the field(s) by which the results should be sorted.



Show
A field can be omitted from the results by clearing its check box.

Criteria
The Criteria lines hold any filters to apply.

Create a Query with the Simple Query Wizard

You can use the Simple Query Wizard to create a query that pulls only certain fields from one or more tables and shows them sorted in a certain order. It provides an easy way for a beginner to get started with queries.



You cannot use this wizard to set up any filtering.

Create a Query with the Simple Query Wizard

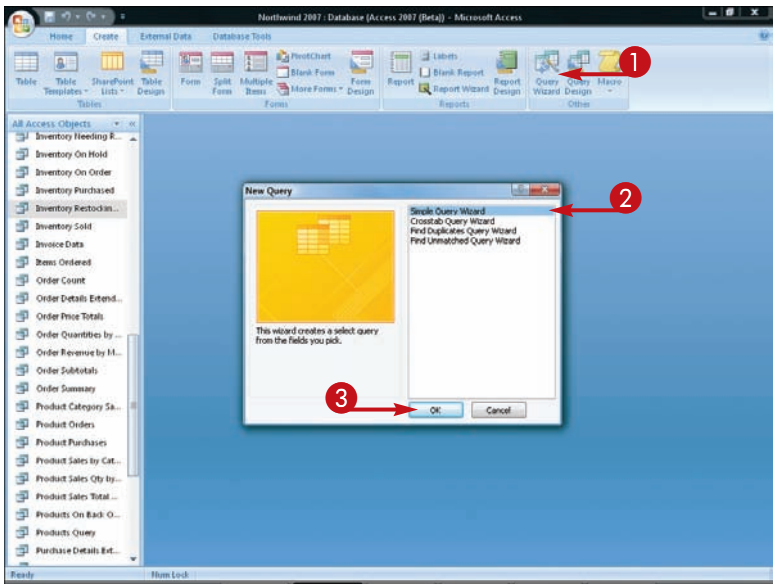
1. On the Create tab, click **Query Wizard**.

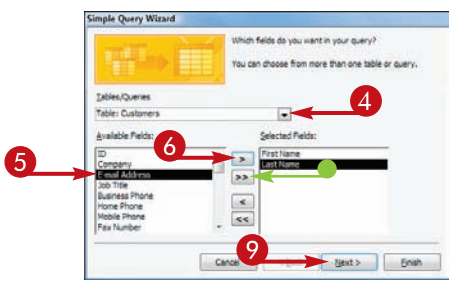
   The New Query dialog box opens.

2. Click **Simple Query Wizard**.
3. Click **OK**.

   The Simple Query Wizard runs.

4. Click here and select the table (or other query) from which to select fields.
5. Click a field.
6. Click here to move the field to the Selected Fields list.
   - You can also click here to move all the fields at once.
7. Repeat steps **5** to **6** to pull more fields from the same table.
8. If needed, repeat steps **4** to **7** to pull fields from another table.
9. Click **Next**.



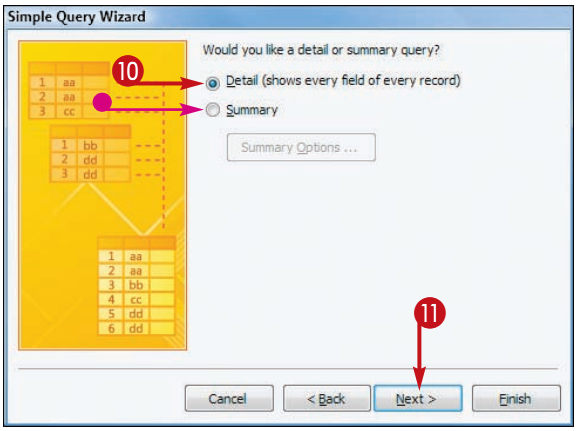


10. If you selected at least one numeric field, leave **Detail** selected.

- Alternatively, you can select **Summary** to summarize the data rather than show every record.

Note: *This screen does not appear if you did not select any numeric fields in step* ***5****. You will learn about summary queries later.*

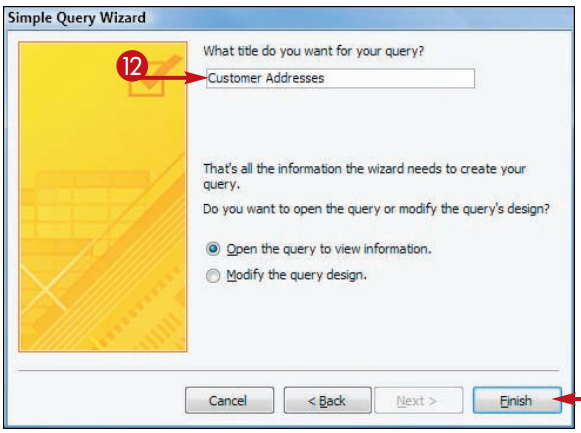
11. Click **Next**.



12. Type a name for the query, replacing the default name.

13. Click **Finish**.

    The query results appear in a datasheet.



TIPS

Can I use fields from any combination of tables?

No, the tables you use in a query must be directly related — that is, related with a connecting line between them, not related via some other table that they both connect to individually. If they are related only via another table, you must also include at least one field from the connector table to help Access find the relationship.

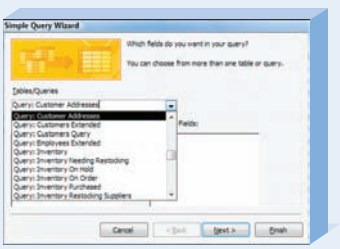
What are those other queries in the New Query dialog box?

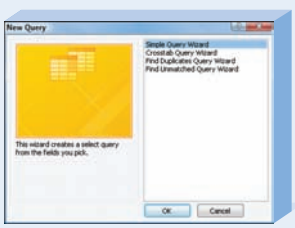
They are for several types of special-purpose queries that are difficult to set up manually.

A Crosstab query summarizes and groups data in a two-dimensional grid.

A Find Duplicates query locates records that have the same value in a specified field or fields.

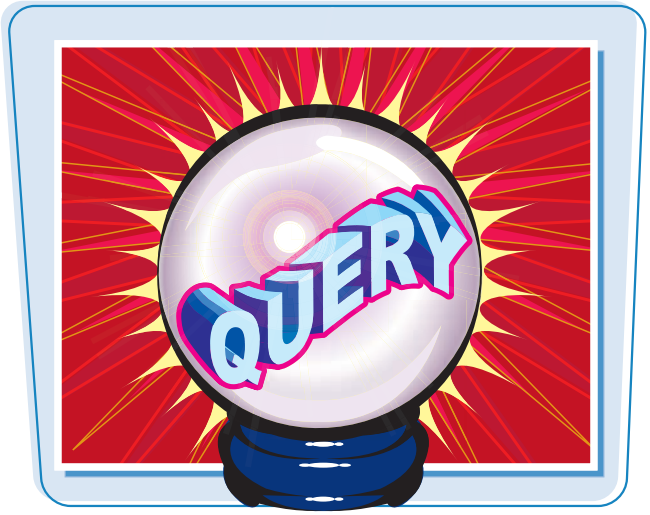
A Find Unmatched query locates records in one table that have no corresponding entry in a related table. For example, you could find customers who have no orders.





Start a New Query in Query Design View

To create a query that has the full range of capabilities, including filtering, you must work in Query Design view. You can start a new query in Query Design view and then add the exact tables and fields to it that you want.



Start a New Query in Query Design View

1. On the Create tab, click **Query Design**.

   A new query design window opens, and the Show Table dialog box opens.

2. Click a table to include in the query.

   - You can also click the **Queries** tab and select a query to use as a table. This allows you to base one query on another.

3. Click **Add**.

4. Repeat steps **2** to **3** to add more tables if needed.

5. Click **Close**.

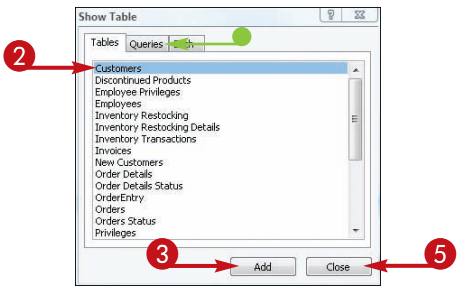
   The selected tables (or queries) appear as field lists in the top part of the window.

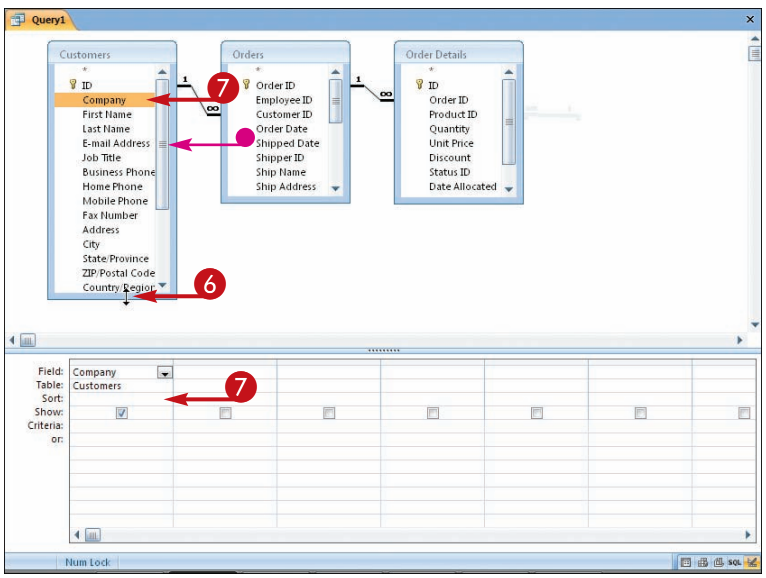
6. You can drag the edge of a field list to enlarge the box.

   - You can scroll through a field list, but it is sometimes more convenient if you can see more of the fields at once.

7. Drag a field into the first empty column in the query grid.

   You can also double-click a field name to place it in the grid.





If you need to add another table, drag it into the top part of the query window from the Objects list.

- You can also click **Show Table** on the Design tab to reopen the Show Table dialog box to add another table or query.

8 Drag more fields into the grid as needed.

***Note:** The fields can come from different tables as long as they are related.*

9 Click **View** to check the query results in Datasheet view.

The results appear in a datasheet.

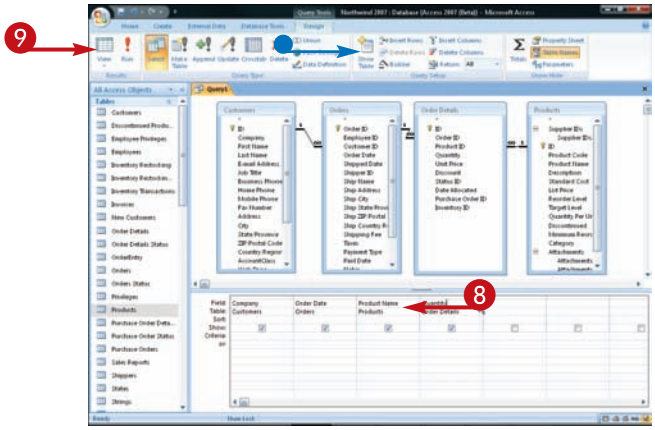
10 Click .

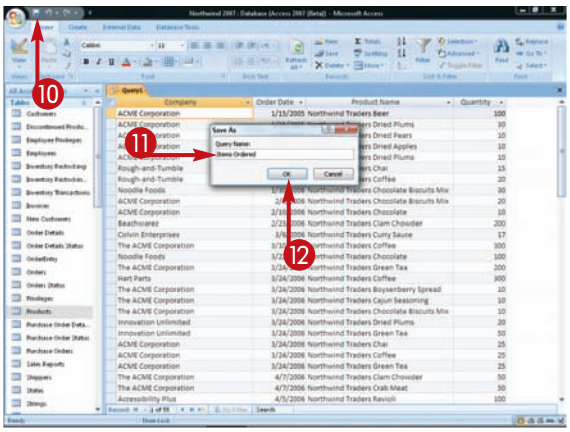
The Save As dialog box opens.

11 Type a name for the query, replacing the placeholder name.

12 Click **OK**.

The query is saved.





TIPS

What is the Run button used for?

Some types of queries perform permanent actions on the data in the table. In such queries, there is a difference between previewing the results in Datasheet view and actually running the query. That is why there are two buttons: View and Run. For the type of query that you create in this section, though, the two buttons do the same thing.

What if the query results are not what I wanted?

Rather than saving your work (steps 10 to 12), click the **View** button on the Home tab to return to Query Design view. Then make any change as needed and preview your work in the datasheet again.





Insert, Arrange, and Remove Query Fields

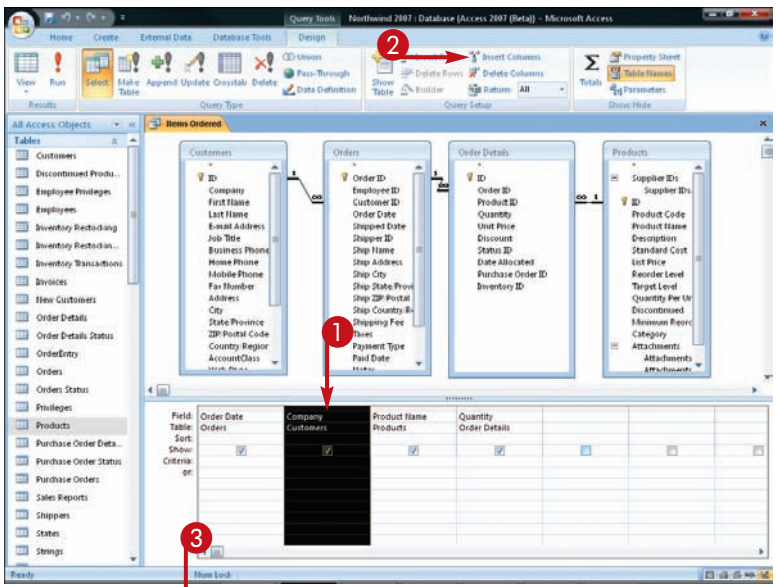


When you double-click a field to add it to a query, it appears in the first empty column. If you want to insert it somewhere else, you must use a different procedure.

You can also rearrange fields after placing them in the grid and remove any fields that you added by mistake.

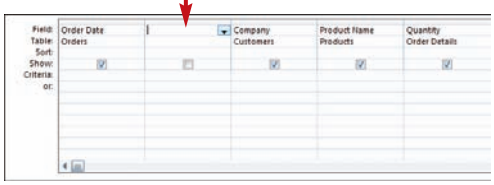
Insert, Arrange, and Remove Query Fields

INSERT A FIELD IN A SPECIFIC POSITION



1. In Query Design view, click at the top of a field's column to select the field that the new column should appear to the *left* of.
2. Click **Insert Columns**.

   A new blank column appears.
3. Drag the new field into the blank column.



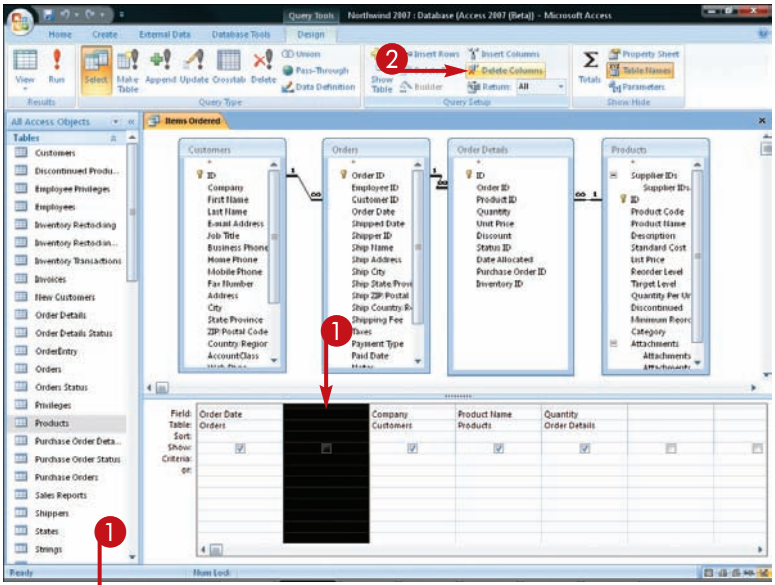
Note: *As a shortcut, instead of inserting the column, you can simply drag the new field on top of an existing one, and a new column will be created to the left of it automatically.*

REMOVE A FIELD

1. Click the top of a field's column to select it.
2. Click **Delete Columns**.

   Alternatively, you can press Delete.

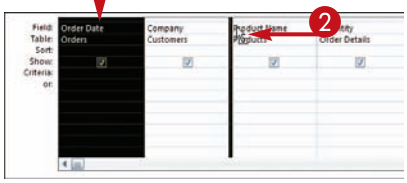
   The field is removed from the grid.



MOVE A FIELD

1. Click the top of a field's column to select it.
2. Drag the field left or right to move it.

   The field moves to a new location.

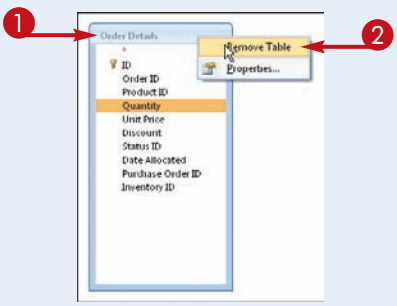


TIPS

How do I remove a table's field list from Query Design view?

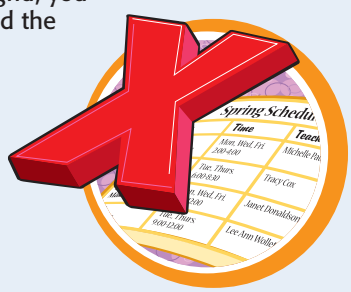
To remove a table's field list:

1. Right-click the title of the field list.
2. Click **Remove Table**.



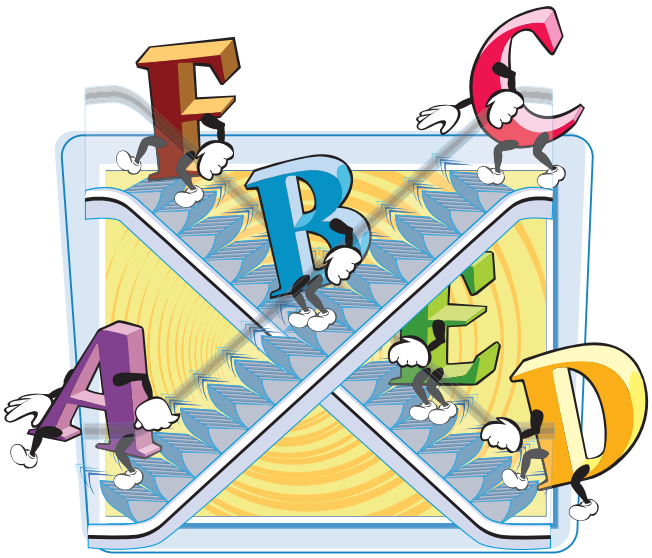
What happens if I remove a table that has fields in use in the query grid?

Those fields are deleted from the grid. Adding the table back again does not automatically restore them in the grid; you must manually re-add the fields.



Set Field Sorting

You can set a query to sort the results alphabetically by a certain field, either in ascending or descending order.

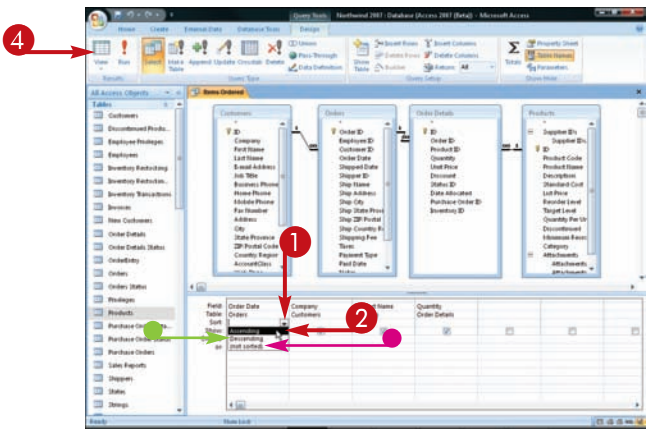


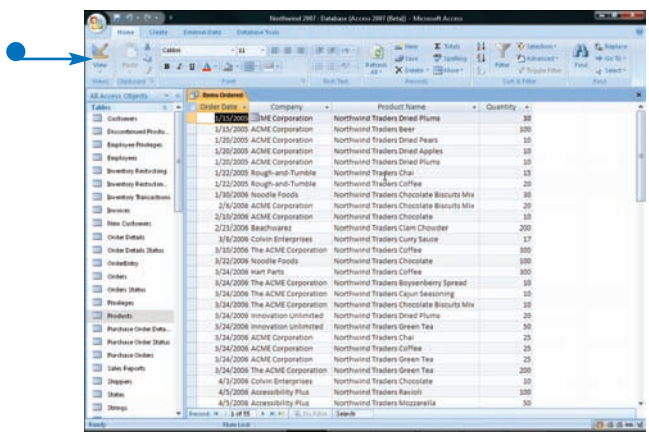
You can specify sorting for more than one field if you like. Access prioritizes them from left to right in the grid. The leftmost field that has a sort order set will take precedence; other sorts will operate only in the event of a tie.

Set Field Sorting

1. In Query Design view, click here to open the drop-down list in the Sort row.
2. Click **Ascending** for an A to Z sort.
   - You can also click **Descending** for a Z to A sort.
   - To turn off field sorting, choose **(not sorted)**.
3. Repeat steps **1** to **2** for other fields if needed.
4. Click **View** to check your work.

   The results appear sorted by the chosen field(s).
   - You can return to Query Design view by clicking **View**.





Add an Alias to a Query Field

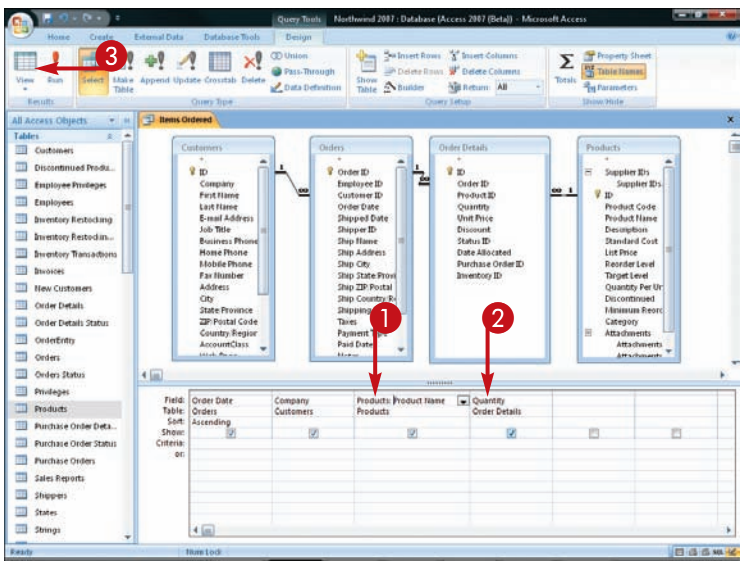
Field names do not have to appear in the query results as their actual names. For example, perhaps you want the Product Name field to appear simply as "Product," or you want the Quantity field to appear as "Qty."

To change the wording of the column heading in the query results, create an alias for the field.

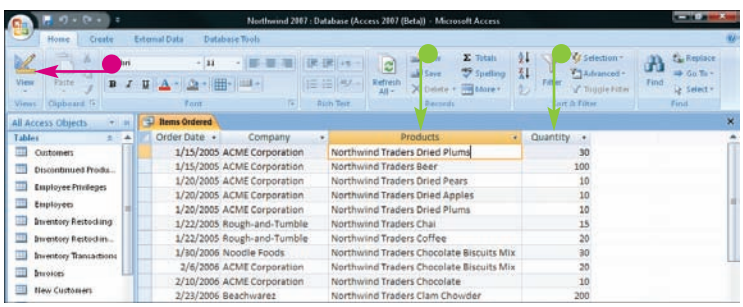


Add an Alias to a Query Field

1. In Query Design view, click at the beginning of the field name in the Field row and type the alias, followed by a colon (:).
2. Repeat step **1** for other fields if needed.
3. Click **View** to preview the change in a datasheet.



- The datasheet column(s) appear with the alias(es).
- You can return to Query Design view by clicking **View**.



Understanding Criteria

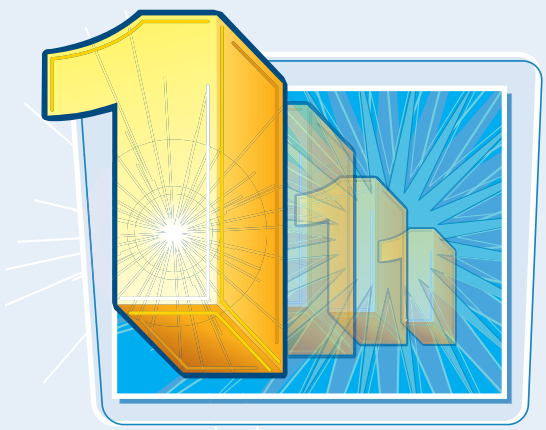
To filter the query results, you can create criteria. *Criteria* are specifications that dictate which records will be included. For example, you may include only customers in a certain range of zip codes or only people who have placed orders in the last 12 months.



Numeric Criteria

You can specify a fixed numeric value as a criterion for a number field. Type the number directly into the Criteria row in the grid. You do not need quotation marks or any special formatting for it.

Access interprets dates as numbers too. When using a date, enter hash symbols around it, like this: **#12/15/2007#**. If you forget the hash marks, Access is usually able to add them for you.



Text Criteria

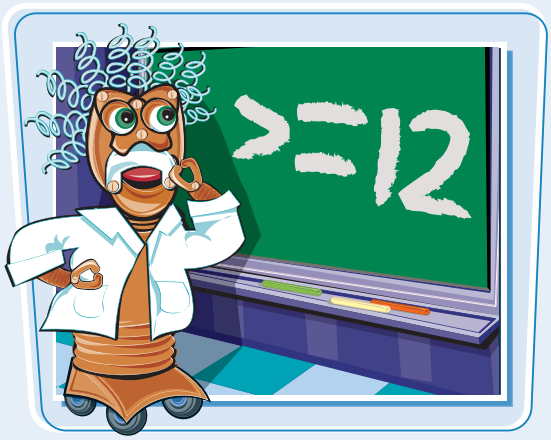
You can specify a text string as a criterion. It can contain multiple words, including punctuation and spacing, but you must enclose it in quotation marks. For example, to set a Customer field's criterion to John Doe, enter **"John Doe"** in the Criteria row.

If you forget the quotation marks, Access is usually able to add them for you.



Criteria Ranges

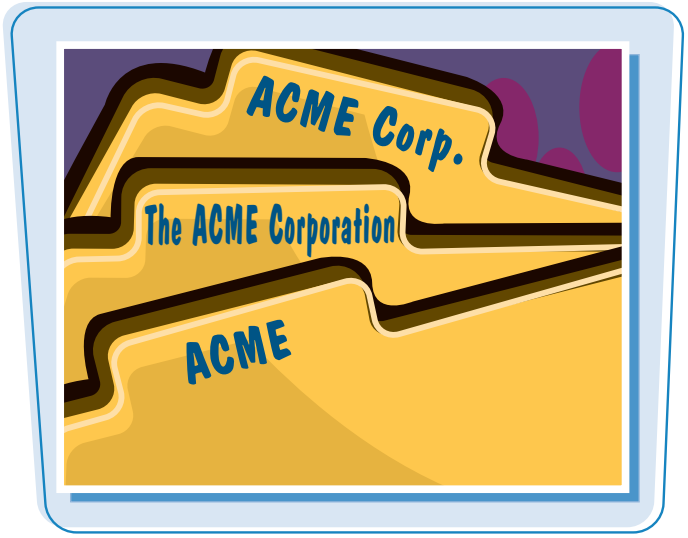
It is often useful to specify a range of values for a criterion instead of one specific value. You can accomplish this with comparison operators and special keywords.



Use	*Description*	*Example*
<	Less than	<30
<=	Less than or equal to	<=#1/1/06#
>	Greater than	>100
>=	Greater than or equal to	>=50
<>	Not equal to	<>"Denver"
Like	Match a pattern of characters	Like "Denver"
And	Match two or more conditions	>5 And <10
Or	Match any condition	"CO" Or "CA"
Between...And	Match values in a range	Between #1/1/06# And #1/15/06#
In	Select from a list of values	In ("NM","NY","NJ")
Is Null	Includes record only if the field is empty	Is Null
Is Not Null	Includes record only if the field is not empty	Is Not Null
*	Wildcard, substituting for any characters	462*
?	Wildcard, substituting for single character	462??

Filter a Query for a Specific Value

The simplest type of criterion is one in which you are specifying a single value. Only records containing that value in that field will be included in the results.



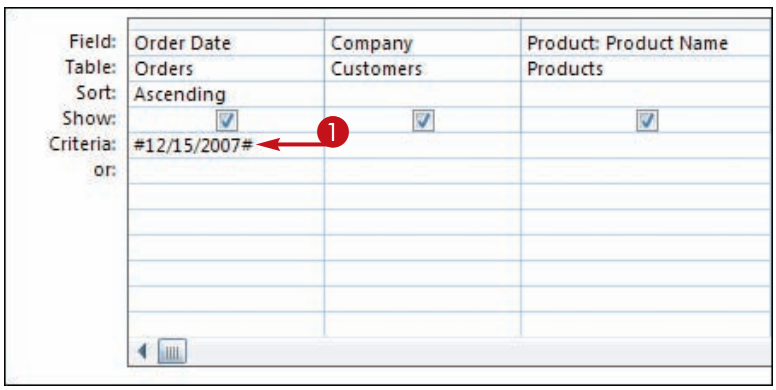
Filter a Query for a Specific Value

FILTER A QUERY FOR A NUMERIC VALUE

1. In Query Design view in the Criteria row, type the value by which to filter.

Note: *If the value is a date, enclose it in hash marks like this: **#12/15/2007#**.*

Note: *If you enter criteria for more than one field, only records that match both criteria will be included in the results. Multicriteria queries are covered later in this chapter.*

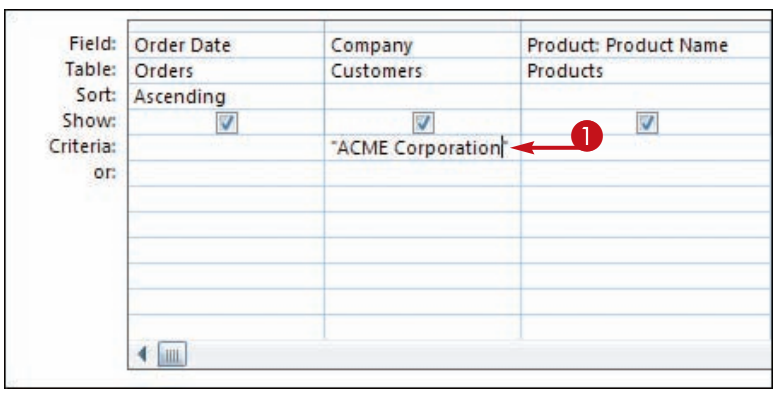


FILTER A QUERY FOR A TEXT STRING

1. In the Criteria row, type the text string by which to filter, enclosed in quotation marks.

Note: *If you forget the quotation marks, Access will usually add them for you.*

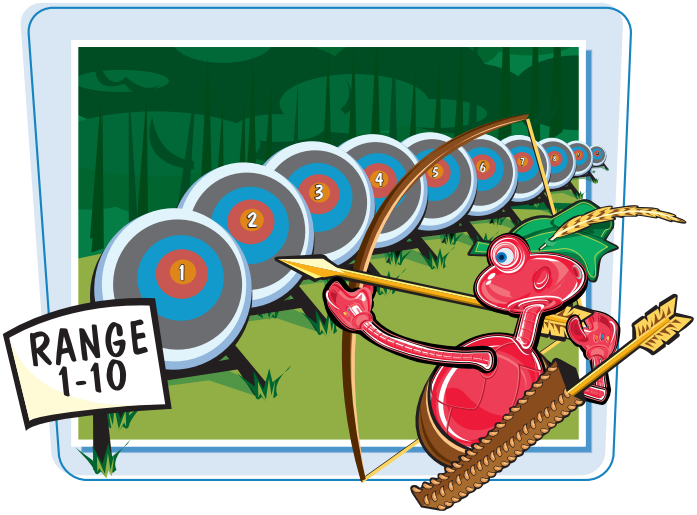
Note: *If you are not sure of the entire text string, use a wildcard, as in the table in the preceding section. For example, "ACME*" finds ACME, ACME Corp., and Acme Corporation.*



Specify a Range of Values

You can specify ranges of values in criteria by using comparison operators. A table of available operators appears in the section "Understanding Criteria."

Comparison operators work with all kinds of criteria (text, dates, numbers, and so on).



Specify a Range of Values

USE A GREATER-THAN OR LESS-THAN RANGE

1. In the Criteria row, type the comparison operator that you want:

   > greater than

   < less than

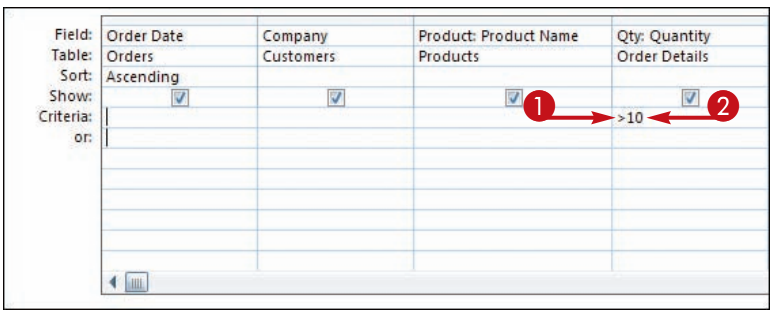
   >= greater than or equal to

   <= less than or equal to

   = equals

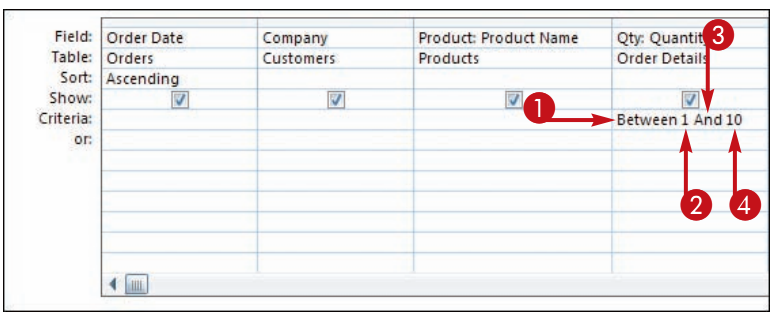
2. Type the value to which to compare.

   The value can be a number, date, or text string. Remember to enclose text strings in quotation marks.



USE A BETWEEN RANGE

1. In the Criteria row, type **Between** and a space.
2. Type the lower value in the range and a space.
3. Type **And** and one more space.
4. Type the higher value in the range.



Specify a List of Values

You can create a list of values to use for a criterion. Records will be included in the results that have any of the values on the list.



There are two ways to create a list of values. You can separate each value with the word Or, or you can use the In keyword and place the values in parentheses as a group.

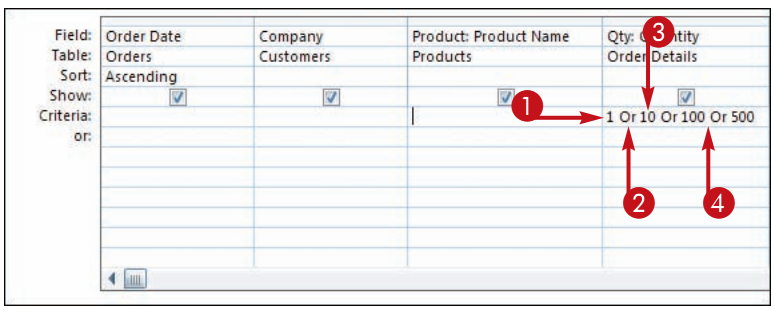
Specify a List of Values

CREATE A LIST BY USING *OR*

1. In the Criteria row, type the first value and a space.

Note: *Enclose the value in quotation marks if it is a text string.*

2. Type the word **Or** and a space.
3. Type the next value and a space.
4. Repeat steps **2** to **3** to include as many items on the list as needed.

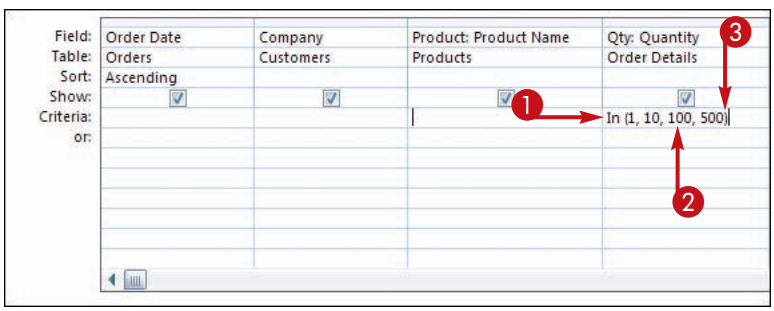


CREATE A LIST BY USING *IN*

1. In the Criteria row, type **In (**.
2. Type the list of values, separated by commas.

Note: *If the values are text strings, enclose each one in separate quotation marks. Make sure that the commas are outside the quotation marks.*

3. Type **)**.



Hide a Field in the Query Results

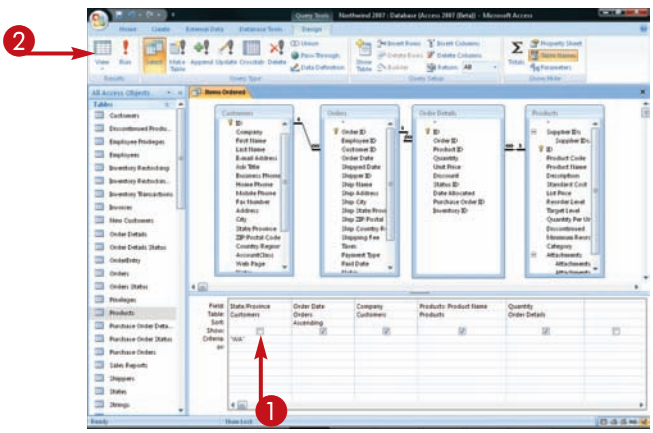
You can hide a field without removing it from the query grid. This is useful when you need to include a field in a query in order to use it as a criterion, but you do not want that field to show up in the results.

For example, suppose that you are creating a query called Orders in Washington. You would need the State field to be included so that you can show only Washington orders, but it would be redundant to have "WA" appear in a column for every record.



Hide a Field in the Query Results

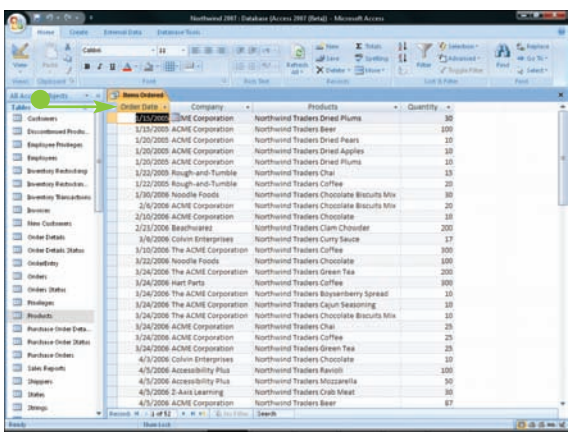
1. In the Show row, clear the check box for the field that you want to hide.
2. Click **View** to check your work.



The datasheet opens, showing the query results.

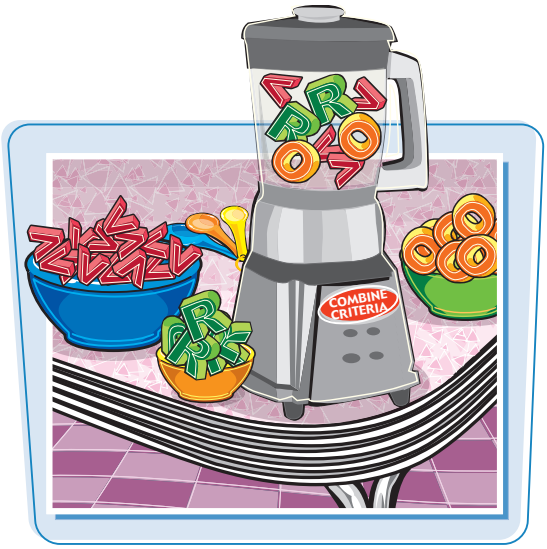
Only the records that match the criteria appear.

- The field providing the criteria does not appear.



Combine Criteria

You can use multiple criteria to define your filtering conditions. Criteria combinations can be exclusive (AND) or nonexclusive (OR).



You can have combinations of And and Or in your query specification. For example, you could filter for orders placed on either of two dates AND placed by a certain customer.

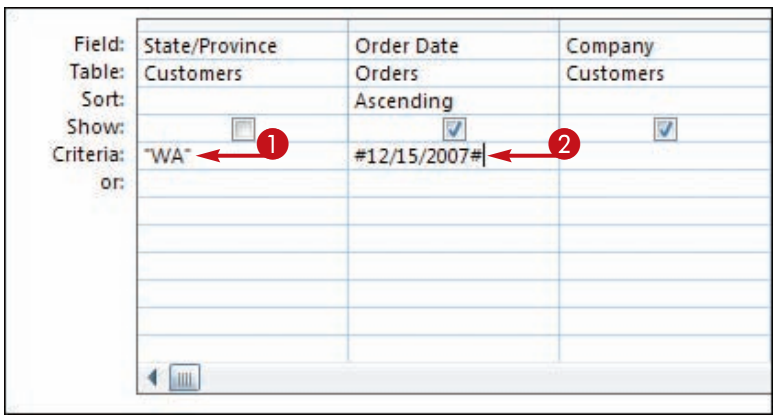
Combine Criteria

COMBINE EXCLUSIVE CRITERIA (AND)

1. Create a criterion for a field.

Note: *See the preceding sections in this chapter for help if needed.*

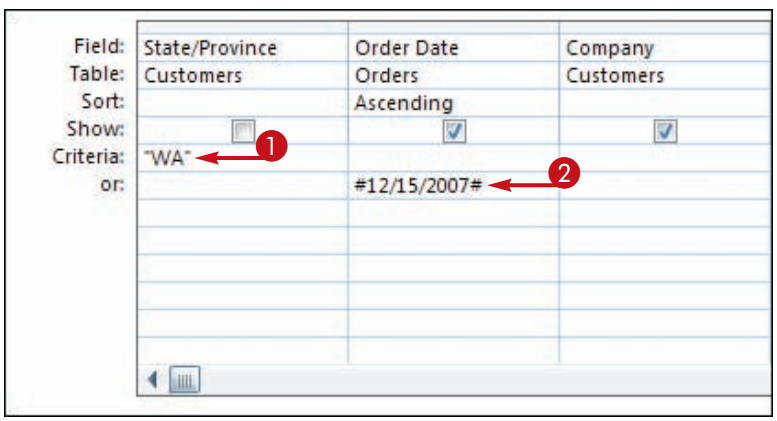
2. On the same Criteria row, create a criterion for another field.



COMBINE NONEXCLUSIVE CRITERIA (OR)

1. Create a criterion for a field.
2. On the first empty Or row, create a criterion for another field.

Note: *You can also create a criterion for the same field in step 2, but if working with the same field, it would be easier to use the word* Or *in the Criteria line, as you learned earlier in this chapter.*



Limit the Records Returned

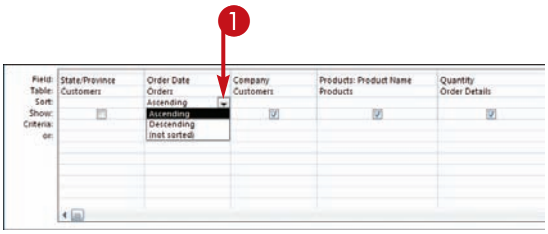
In addition to the various criteria that you can create, you can also limit the number of records that a query returns. You can limit it either by a number or by a percentage. For example, you could show only the top 5 records, or you could show the top 5%.



Limit the Records Returned

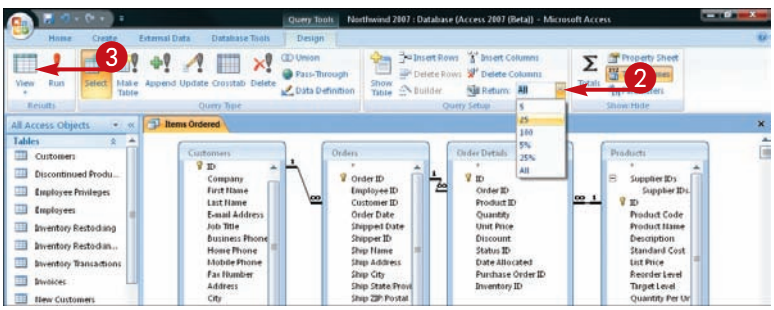
1. In Query Design view in the field by which to impose the limit, click here and choose **Ascending** or **Descending**.

Note: *The limit refers to the first field by which the query is sorted, if any. If there is no sorting specified, it refers to the leftmost field.*



2. Click here and select the limit that you want.

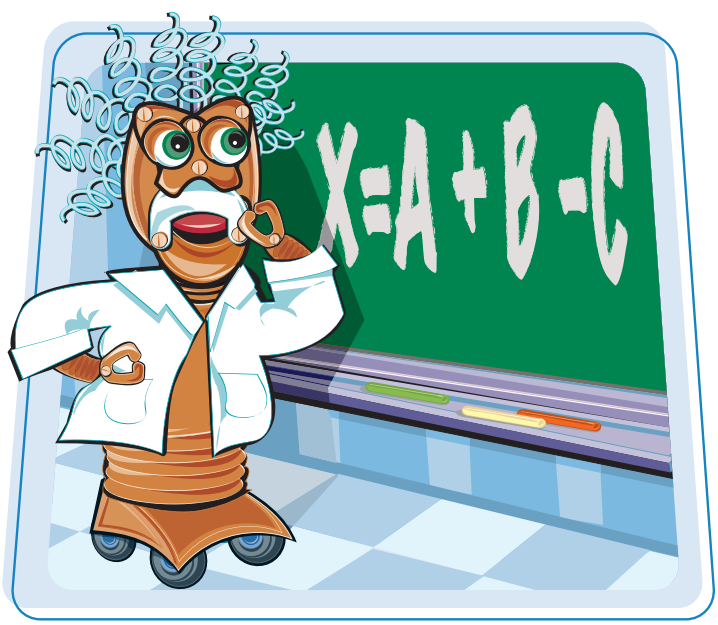
3. Click **View** to view the filtered list.



CHAPTER

8

Creating More Complex Queries



Queries can do much more than just sort and filter data from a table. They can summarize and calculate data, append the data from one table to another, identify duplicate data, prompt the user for parameters at runtime, and much more.

In this chapter, you will learn how to take advantage of the powerful tools for special-purpose queries in Access 2007.

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Understanding Summary Queries

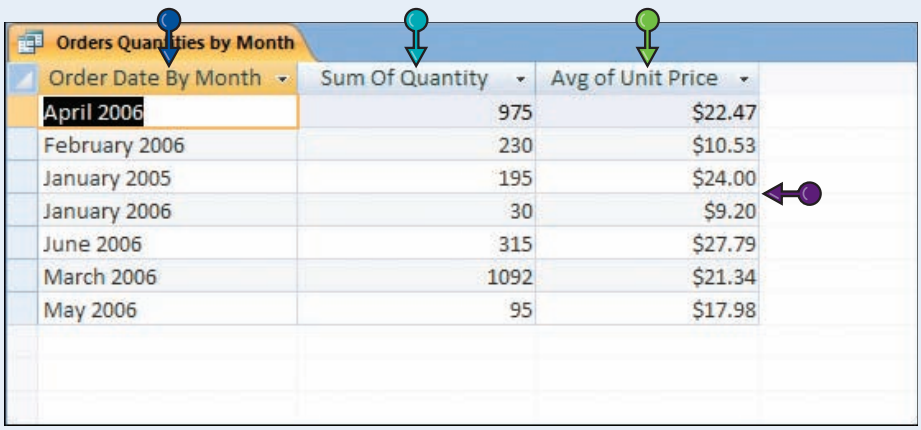
A summary query distills a large quantity of data down into useful information. You can use summary queries whenever you do not care about the individual records, but you do want to understand the big picture.

No individual records

Individual records do not appear in the results of a summary query. Each row in the query datasheet represents a summary of a group of records. (It is possible but not typical for a group to consist of a single record.)

Group By

A summary query typically contains only a few fields. It needs only the field(s) by which you want to group the data and the field(s) by which you want to calculate. There is typically one field by which the data is grouped. In this example, each row represents a different month.



Orders Quantities by Month

Order Date By Month	Sum Of Quantity	Avg of Unit Price
April 2006	975	$22.47
February 2006	230	$10.53
January 2005	195	$24.00
January 2006	30	$9.20
June 2006	315	$27.79
March 2006	1092	$21.34
May 2006	95	$17.98

Sum

The Quantity field has been set up to use the Sum function to sum the Quantity values for the month as a whole. Access automatically generated the column title SumOfQuantity.

Average

The UnitPrice field has been set up to use the Average function to average the unit price values for the month as a whole. Access automatically generated the column title AvgOfUnitPrice.

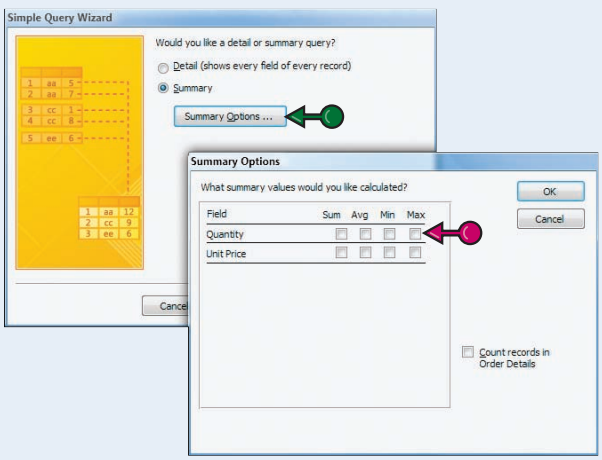
Aggregate Functions

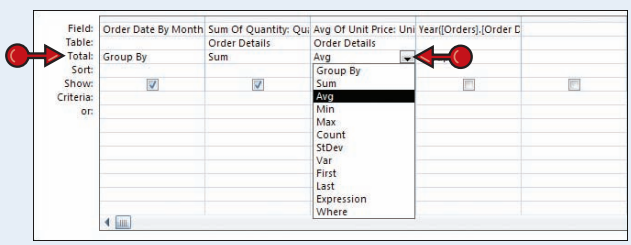
Summary queries summarize data using *aggregate functions* built into Access. These are math operations that calculate statistics about the data. Some of the aggregate functions require the data to be numeric, such as Sum; others such as Count will work on any data type.

The available aggregate functions include the following:

Function	Purpose
Sum	Total numeric values.
Avg	Total numeric values and divide by the number of records in the group.
Min	Find the lowest value (smallest number, first text alphabetically, earliest date).
Max	Find the highest value (largest number, last text alphabetically, latest date).
Count	Find the number of records in the group.
StDev	Calculate the standard deviation. This is used to see how close the values are to the average.
Var	Calculate the variance. This is another way of measuring how close the values are to the average.
First	Find the first record's entry in the group.
Last	Find the last record's entry in the group.
Expression	Allows a custom formula to be entered.
Where	Refers the query to the Criteria row. This enables you to include fields in the query purely for criteria purposes without grouping or calculating by that field.

Simple Query Wizard Summaries





Summary Options

When you choose a summary query with the Simple Query Wizard, a Summary Options button becomes available in the wizard.

Select the calculations

You can mark check boxes for each calculation that you want. Each check box that you mark translates into a column in the query results, so choose carefully to avoid information overload.

Query Design View Summaries

In Query Design view, you can display a Total row in the grid. For each field included, the Total row must be set either to Group By or to one of the functions shown in the table.

Create a Summary Query with the Simple Query Wizard

The easiest way to create a summary query is to use the Simple Query Wizard, as you learned in Chapter 7. As part of the wizard, you can specify a summary query and then set up the calculations that you want to use.



Create a Summary Query with the Simple Query Wizard

1. On the Create tab, click **Query Wizard**.

   The New Query dialog box opens.

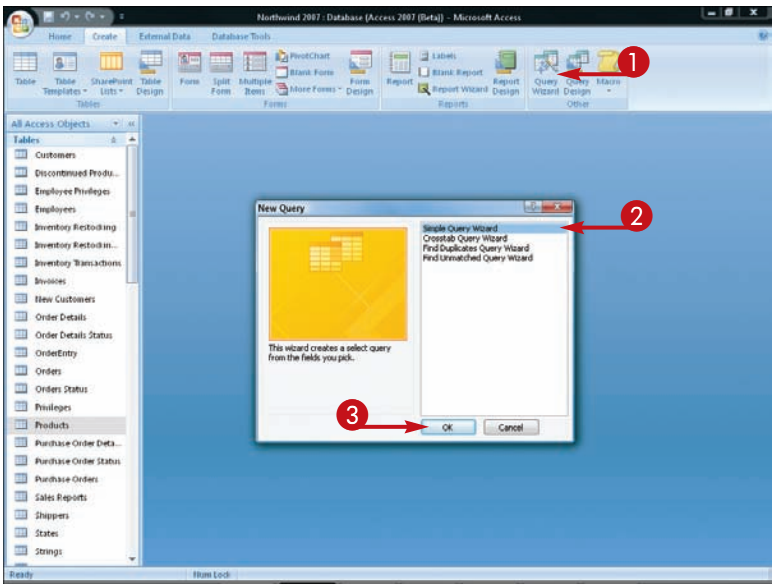
2. Click **Simple Query Wizard**.
3. Click **OK**.

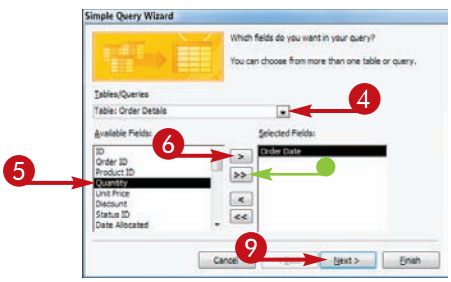
   The Simple Query Wizard runs.

4. Click here and select the table (or other query) from which to select fields.
5. Click a field.
6. Click here to move the field to the Selected Fields list.

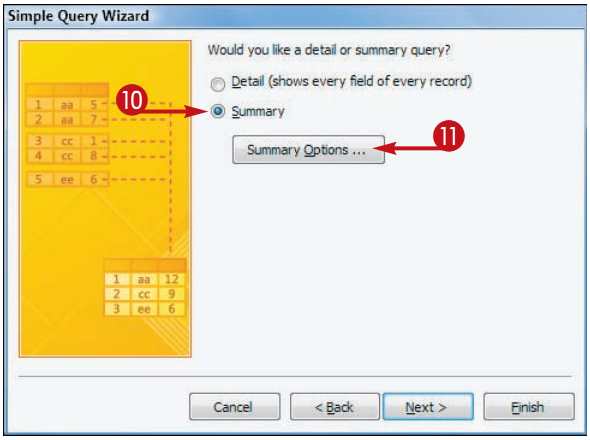
   - You can also click here to move all the fields at once.

7. Repeat steps **5** to **6** to pull more fields from the same table.
8. If needed, repeat steps **4** to **7** to pull fields from another table.
9. Click **Next**.



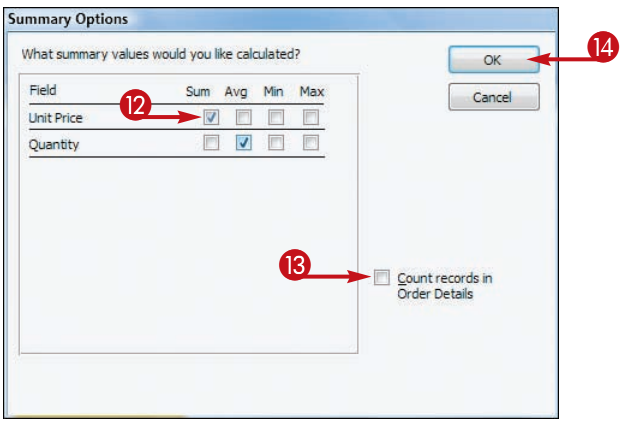


10. Click **Summary**.
11. Click **Summary Options**.



The Summary Options dialog box opens.

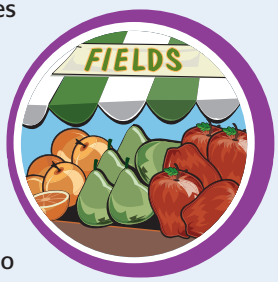
12. Click the check box for each calculation you want to perform.
13. If you want a record count, click here.
14. Click **OK** to return to the Simple Query Wizard.





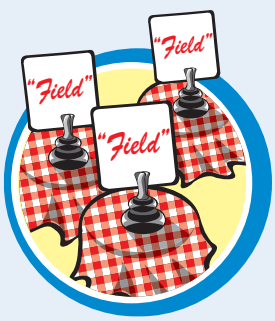
Which fields should I use?

A summary query is clearest and most concise when it uses *very few* fields. Include one field by which to group and then only the fields by which you want calculations to appear for those groups. If you use more fields than that, the datasheet becomes so complex that it defeats the purpose of a summary query — to summarize a large collection of data in a concise format.



Can I choose fields from different tables?

Yes, the same rules apply as with a detail query. Fields can come from different tables as long as those tables are related. Consult the Relationships window from the Database Tools tab if you are not sure about the relationships.



continued

Create a Summary Query with the Simple Query Wizard *(continued)*

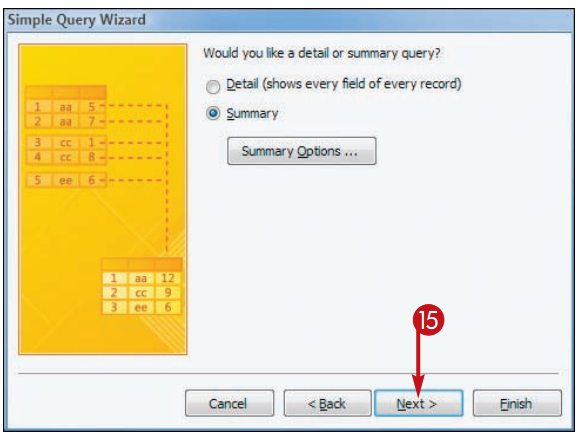


When creating a summary query in which the field by which you are grouping has a Date data type, the wizard enables you to select a grouping interval for the dates. You can group by day, month, year, and so on.

This option alone makes the wizard very valuable. It is easy to set up such intervals in the wizard, but it is very complicated and difficult to set them up manually in Query Design view.

Create a Summary Query with the Simple Query Wizard *(continued)*

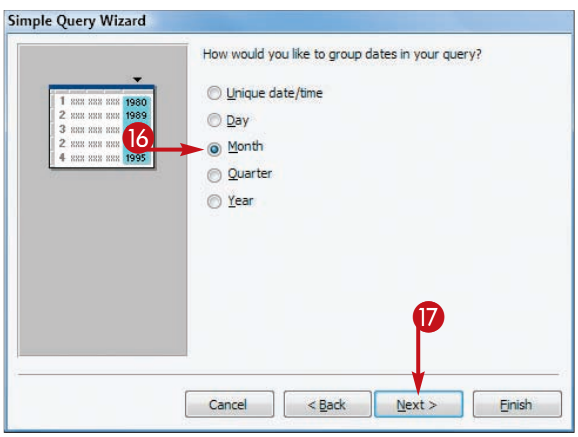
15 Click **Next**.



If the Group By field is a Date data type, you are prompted for an interval.

16 Click the grouping interval that you want.

17 Click **Next**.



18 Type a name for the query here, replacing the default name.

19 Click **Finish**.



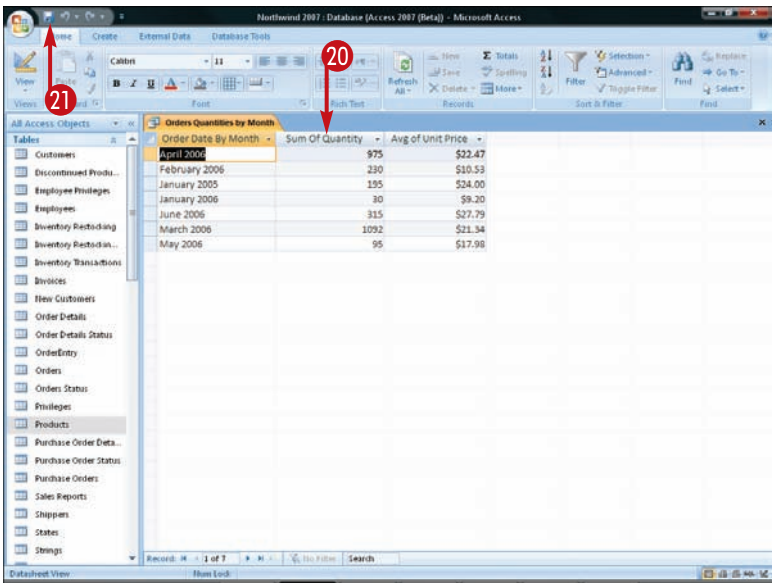
The query results appear in a datasheet.

20 Widen the columns if needed to display the column headings.

Note: *To widen a column, double-click between column headings or drag the right border of a column heading.*

21 Click .

The query definition is saved.



TIPS

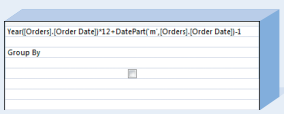
Can I make changes to a summary query after creating it with the wizard?

Yes, you can edit it in Query Design view. In most respects, a summary query is just like any other query. It has a Total row in the grid that detail queries do not have. You will learn more about summary queries in Design view in the next section.



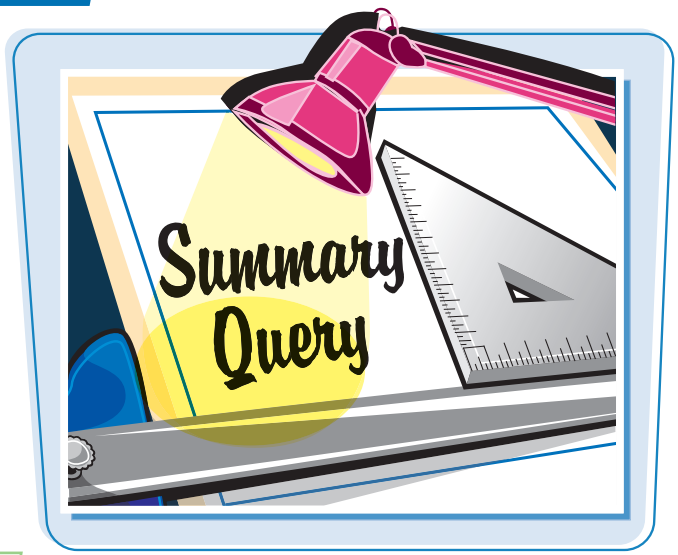
I viewed the query in Query Design view, and there is a weird extra field there that starts with "Year."

When you specify grouping by a date range, the Simple Query Wizard adds a formula that represents the interval. Its syntax can be quite complex; that is why it is best to create such fields with the wizard. Widen its column in the grid to see the entire formula at once.



Create a Summary Query in Query Design View

You can also create a summary query in Query Design view by specifying the fields manually. If you know exactly what you want, and if the syntax you need is not complicated, it can be faster to use this method than the wizard.



Create a Summary Query in Query Design View

1. On the Create tab, click **Query Design**.

   A new query design window opens, and the Show Table dialog box opens.

2. Double-click a table to include in the query. Repeat as needed.

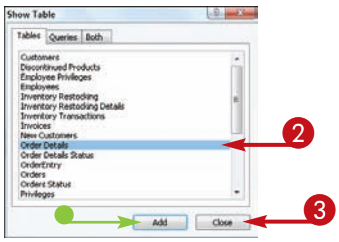
   - You can also click a table and click **Add**.

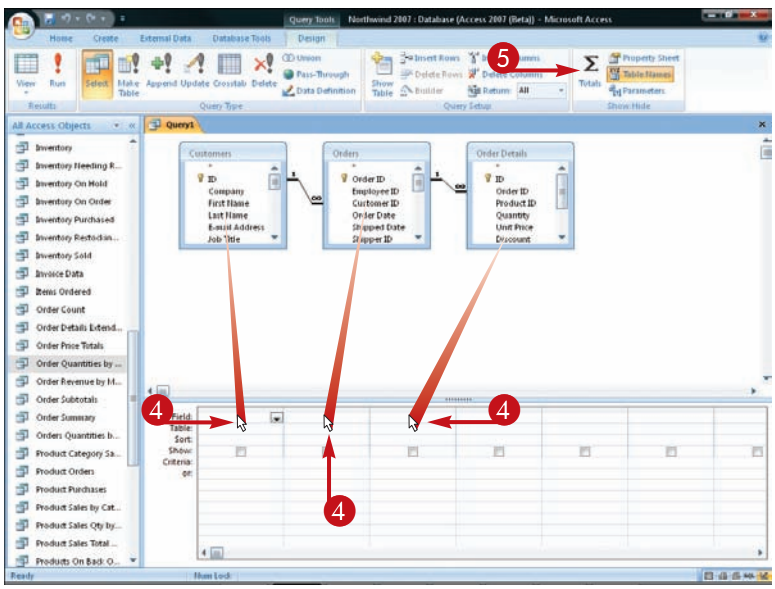
3. Click **Close**.

   The selected tables (or queries) appear as field lists in the top part of the window.

4. Drag the fields that you want on to the grid.

5. Click **Totals**.



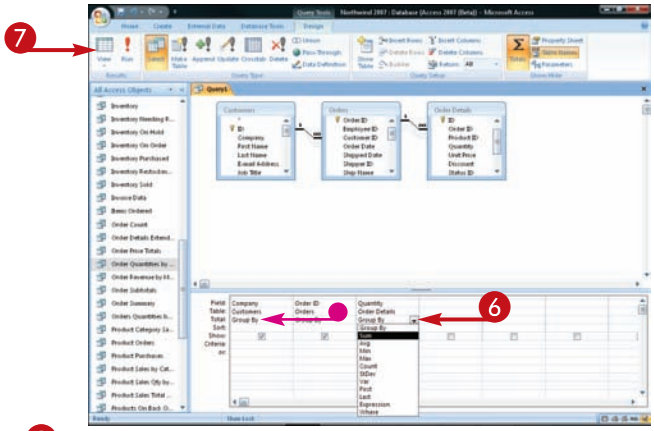


The Total row appears on the grid.

6 For each field, click here and select the calculation to perform.

- Leave one field set to **Group By**; these groups will form the rows of the results.

7 Click **View**.



The query results appear in a datasheet.

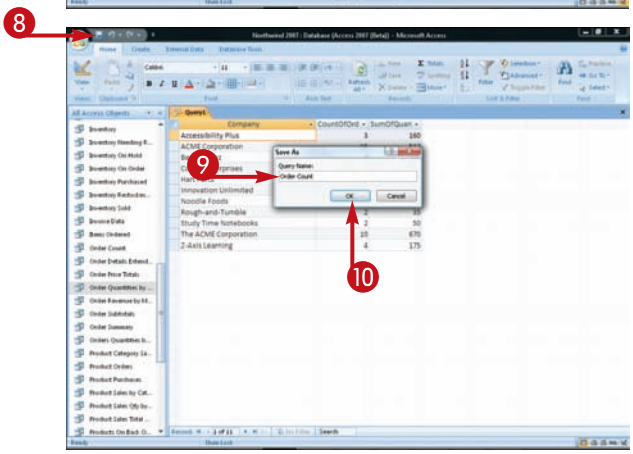
8 Click .

The Save As dialog box opens.

9 Type a name for the query, replacing the default name.

10 Click **OK**.

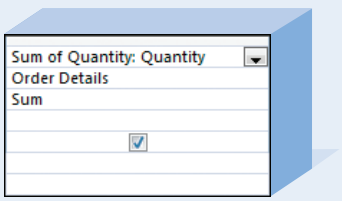
The query is saved.



TIPS

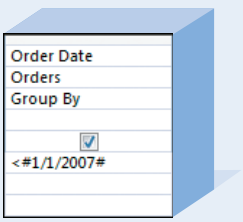
How can I rename the column headings?

Use an alias, as you learned to do in Chapter 7. In Query Design view, type an alias and a colon in front of the field name in the Field row.



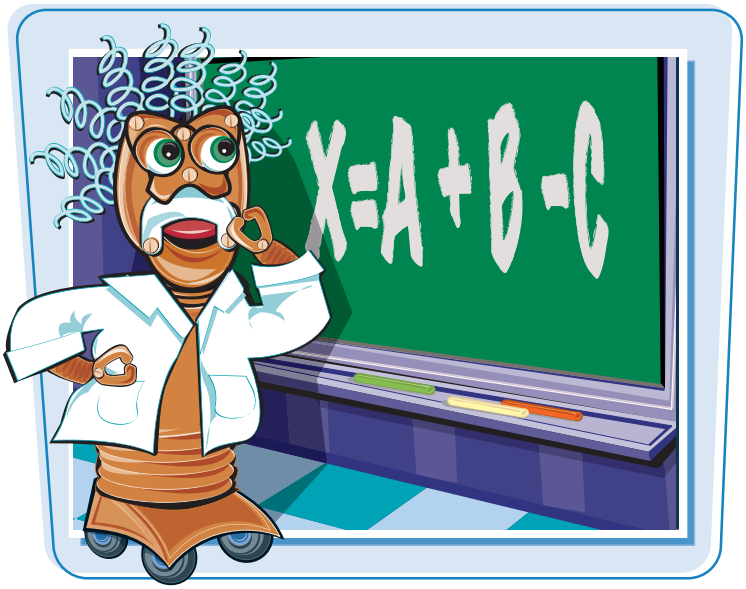
Can I sort and use filter criteria in a summary query?

Yes. A summary query is just like a detail query in most respects. You can even include a field in the query that does not appear in the query results, just for filtering.



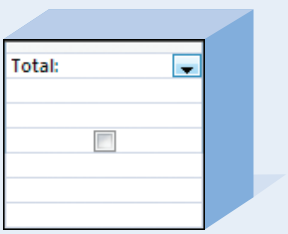
Understanding Calculated Fields

You can use queries to generate new columns on-the-fly that calculate values based on the contents of other fields. For example, you could create a Cost column in the query that multiplies Quantity x Unit Price.



Assign a Column Name

Use the same technique for naming the new column that you did with aliasing in Chapter 7, but do it in a blank column. Type the new name at the beginning of the Field box, and follow it with a colon.



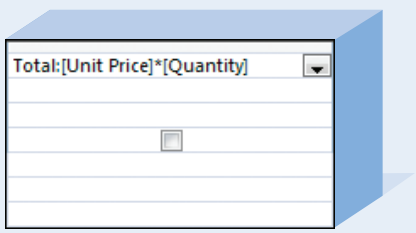
Write the Expression

After the colon, write the expression — that is, the math formula — using standard math operators, with field names enclosed in square brackets. For example, to multiply the Unit Price by the Quantity, type the following:

[Unit Price]*[Quantity]

Here are the math operators that Access recognizes:

Addition	+
Subtraction	-
Multiplication	*
Division	/
Exponentiation	^



Create a Calculated Field

You can use calculated fields to generate information about each record. For example, you can test the effect of increasing prices by 20% by creating a new column that multiplies the existing unit price by 1.2.

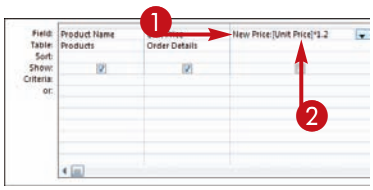


Create a Calculated Field

CREATE THE CALCULATED FIELD

1. In Query Design view in the Field row for a blank column, type a title for the new column followed by a colon (:).
2. Type the formula to calculate.

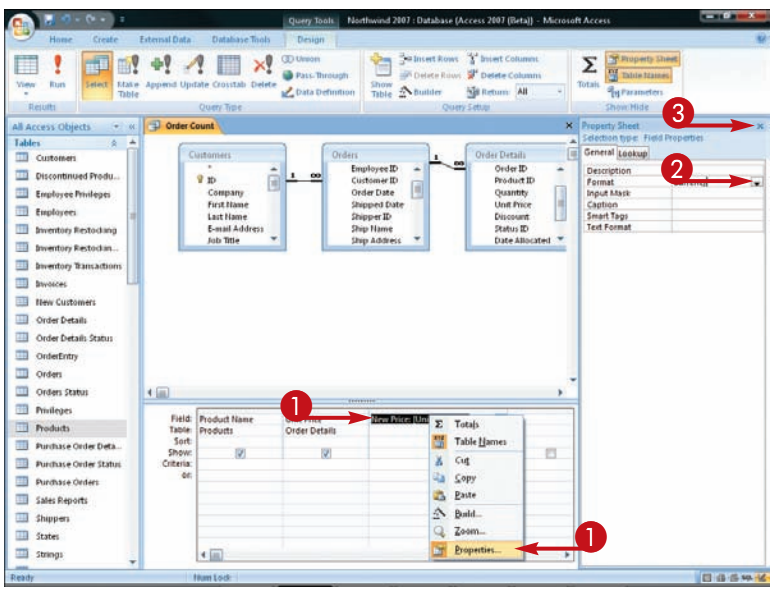
Note: *Remember to enclose field names in square brackets.*



SET A NUMBER FORMAT FOR THE CALCULATED FIELD

1. Right-click the calculated field and click **Properties**.

   The Property Sheet opens.
2. Click here and select the number format for the calculated field.
3. Click here to close the Property Sheet.



Understanding Action Queries

Action queries modify records based on criteria that you specify. Unlike a select query (the type of query you have worked with so far), an action query makes permanent changes to the table.



Types of Action Queries

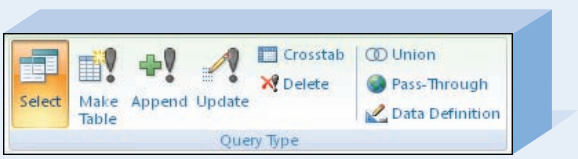
In Query Design view, the Query Type group has buttons for the various types of queries. The action queries represented there are the following:

Make Table: Creates a new table; it is a means of moving records from one table to a new one.

Delete: Deletes records from the table based on criteria that you specify.

Append: Adds records to the end of an existing table. This is a means of moving records from one table to an existing one.

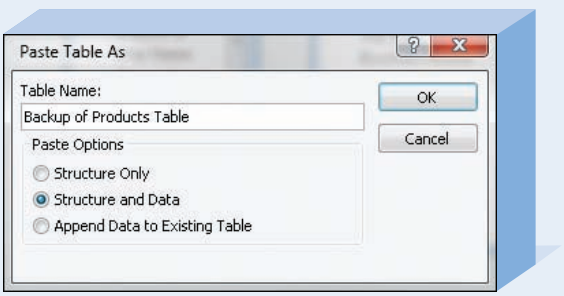
Update: Changes values across the entire table based on criteria that you specify. For example, you can increase prices by a certain percentage.



Be Careful!

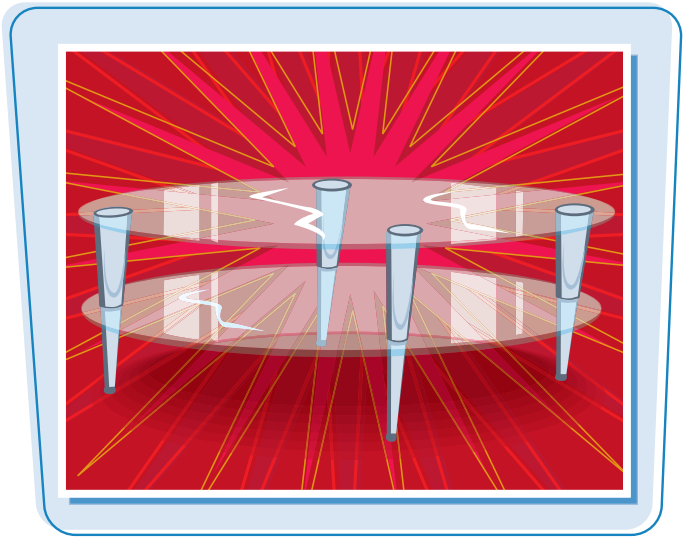
Because action queries make permanent changes to tables, you should back up a table before running an action query on it. One way is to copy the table by pressing Ctrl + C and then paste it by pressing Ctrl + V. In the Paste Table As dialog box, specify a name for the copy and make sure that Structure and Data is selected as the Paste option.

To avoid accidentally rerunning an action query later, either delete it when you are finished with it from the Objects list or hide it there by right-clicking it and choosing **Hide Table**.



Run a Make Table Query

A Make Table query creates a new table. You can use this query to archive old records, for example, or to split a table into two separate tables based on the status of a certain field.



Run a Make Table Query

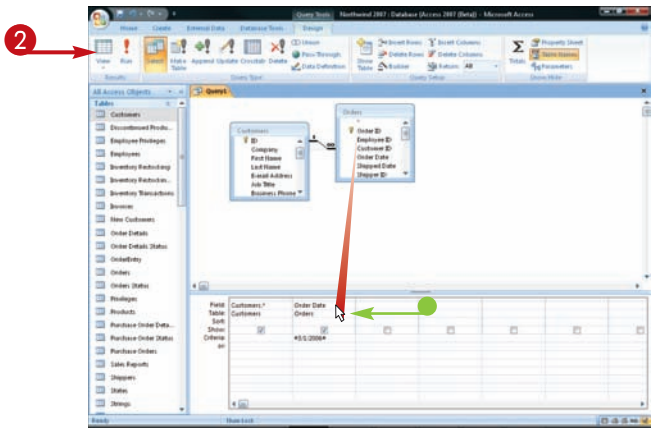
1. Create the query as you would any other query in Query Design view.

   Make sure that you include all the fields that the new table should contain. Also make sure that your criteria capture the needed records.

   - To include all the fields for a table, drag * from the field list to the grid.

2. To check your work before running the query, click **View**.

   Click **View** again to return.



3. On the Design tab, click **Make Table**.

   The Make Table dialog box opens.

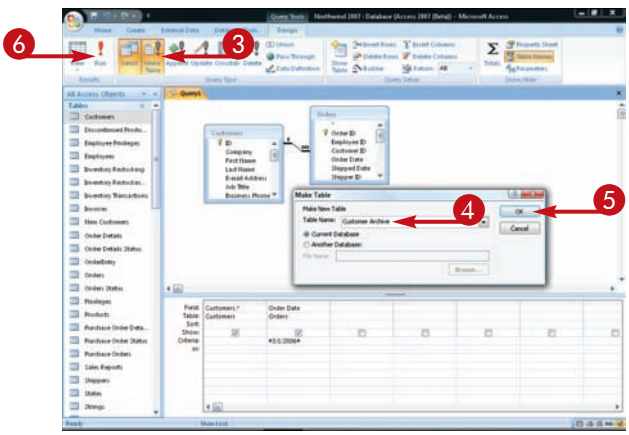
4. Type a name for the new table.

Note: *You can optionally choose to save the new table in another database.*

5. Click **OK**.

6. Click **Run**.

   The new table is created.



Run a Delete Query



A Delete query removes records that match the criteria you specify.

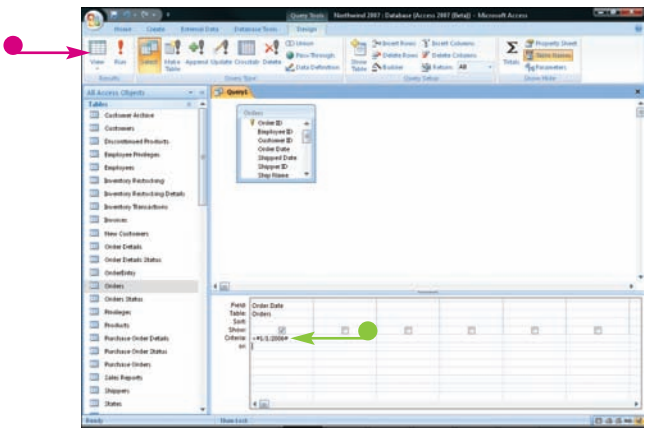
Delete queries are useful whenever you need to purge a table of a certain type of record. For example, you can use a Delete query to remove products from a supplier that has gone out of business.

Run a Delete Query

1. Create the query as you would any other query in Query Design view.
   - Include criteria that identifies the records to be deleted.

***Note:** This query will act on entire records, regardless of the fields you include. Therefore, you need include only fields by which you want to set up criteria.*

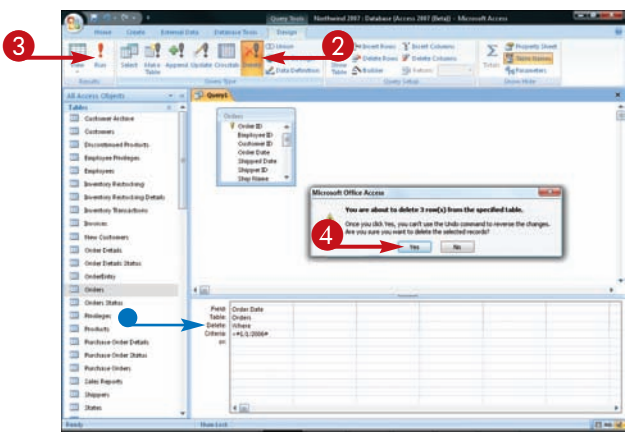
   - To check your work before running the query, click **View**. Click **View** again to return.



2. On the Design tab, click **Delete**.
   - The rows in the grid change. The Sort and Show rows disappear, and a Delete row appears.
3. Click **Run**.

   A warning appears.
4. Click **Yes**.

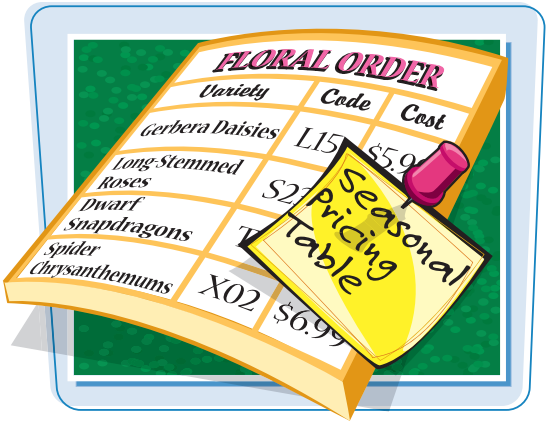
   The records are deleted.



Run an Append Query

You can use an Append query to copy records from one table to another table.

The receiving table must have the same fields as the original table. You can use the Make Table query to create a new table with the same structure, or you can copy the table and include only the structure in the copy, as shown in Chapter 3.



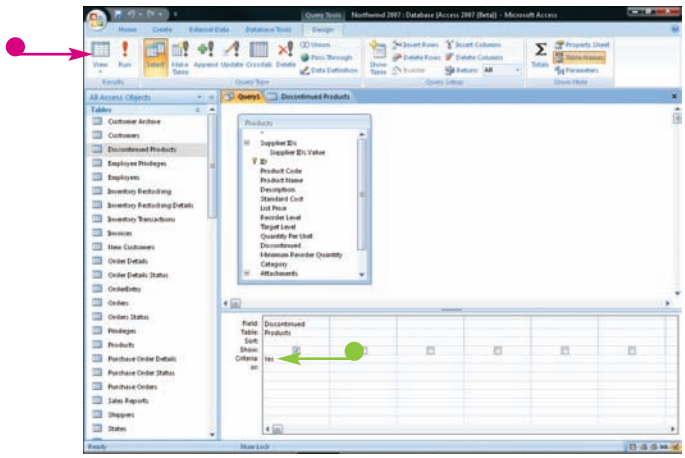
Run an Append Query

1. Create the query as you would any other query in Query Design view.
   - Include criteria that identifies the records to be appended to another table.

     All fields for the records will be appended; you need specify only the field(s) containing the criteria. However, including all fields makes it easier to check your work.

***Note:** Appending records does not remove them from the original source.*

   - To check your work before running the query, click **View**. Click **View** again to return.



2. On the Design tab, click **Append**.

   The Append dialog box opens.

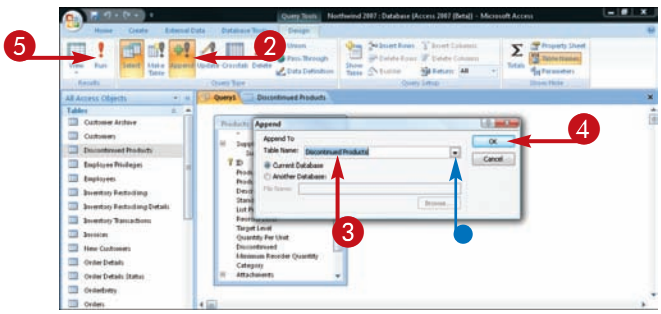
3. Click here and type the table to which to append.
   - You can click here to select from a list of tables in the current database.

4. Click **OK.**

   The dialog box closes.

5. Click **Run**.

   A warning appears.



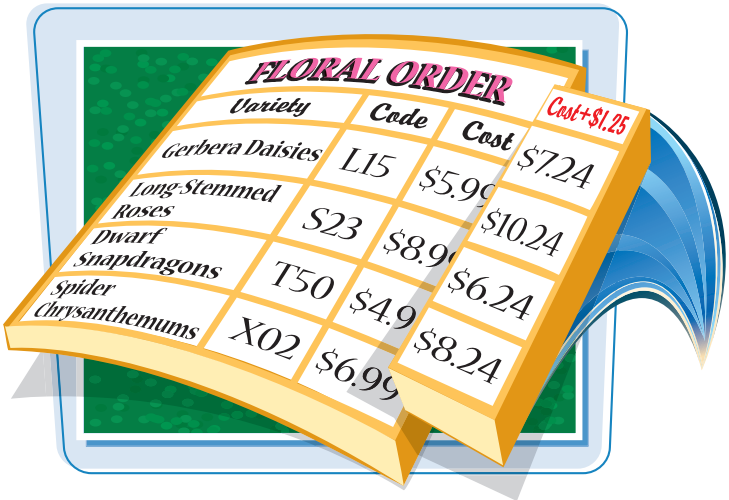


6. Click **Yes**.

   The records are appended, except where it would violate data integrity rules such as duplicate records not being allowed for a certain field.

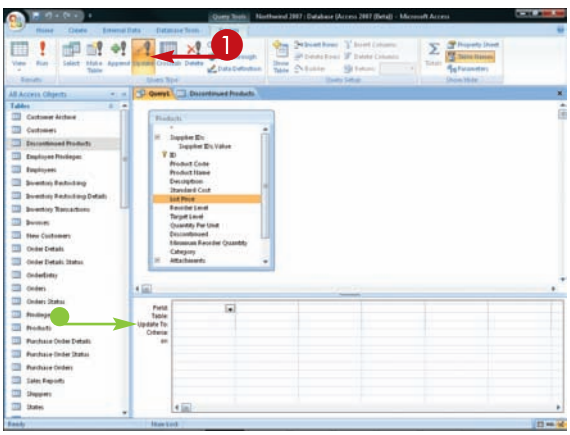
Run an Update Query

An Update query does not add or remove records from the table. Instead, it changes the value in a particular field for all records across the board. For example, you can use an update query to increase or decrease the prices of products by a fixed amount, using addition, or by a percentage, using multiplication.

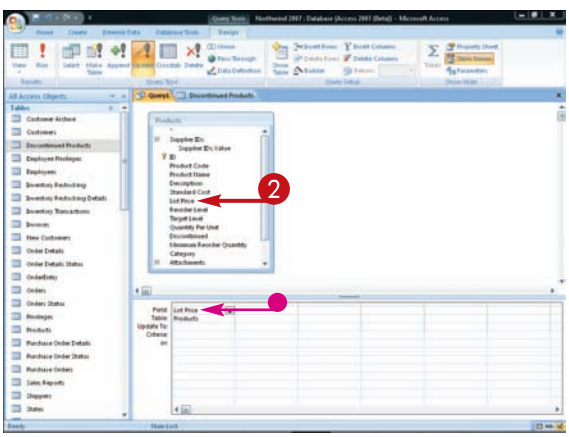


Run an Update Query

1. In Query Design view, click **Update**.
   - An Update To row appears in the grid.



2. Double-click the field to update.
   - The field is placed into the grid.



3 In the Update To row, type the formula to use for the update.

Note: *A 10% increase in List price is shown here.*

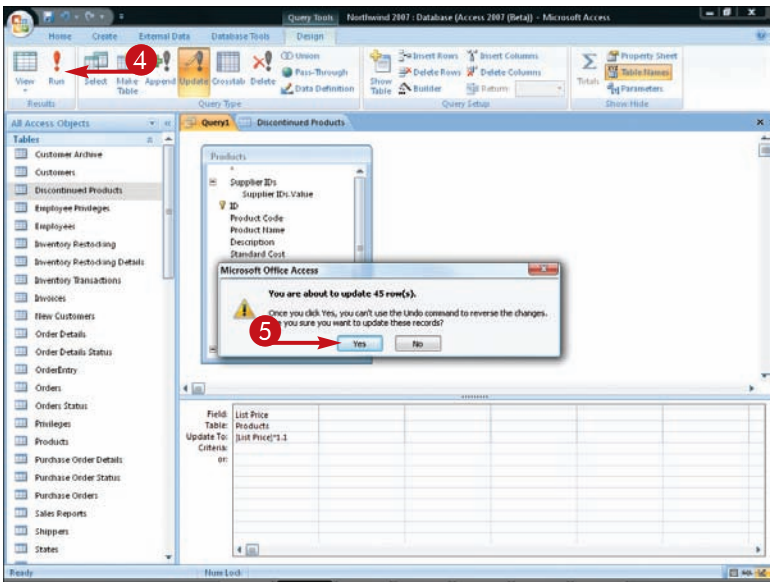


4 Click **Run**.

A warning dialog box appears.

5 Click **Yes**.

The query runs and updates the values.



TIPS

What is the correct syntax for an Update To formula?

Enclose field names in square brackets and use standard math operators:



+ Addition
- Subtraction
* Multiplication
/ Division
^ Exponentiation

Do not use any currency symbols; express numbers as plain digits.

What are some examples of formulas?

Here are some examples:



To increase Price by $2: **[Price]+2**

To decrease Price by 5%: **[Price]*0.95**

To decrease Price by one-third: **[Price]/3** or **[Price]*0.66**

To multiply Price by itself: **[Price]*[Price]** or **[Price]^2**

Prompt the User for a Parameter

Instead of creating many similar queries, you can create one query that will prompt the user for a value to use as a variable. For example, if you use the same query to look up addresses in different states, you can create a parameter that asks for the state each time that the query is run.

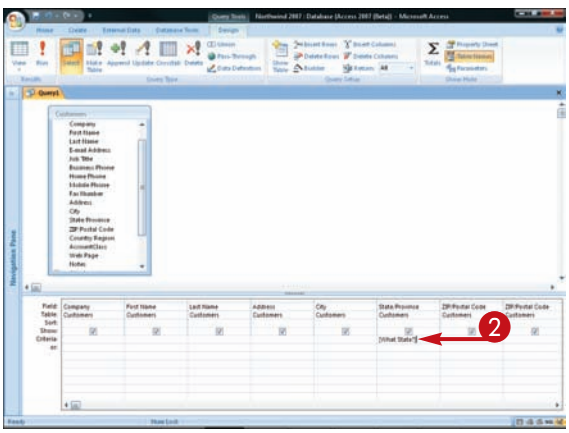


Prompt the User for a Parameter

CREATE THE PROMPT

1. Create the query as you normally would in Query Design view.
2. In the Criteria row, type the prompt message in square brackets.

Note: *You can be brief, as shown here, or you can provide much more direction than that. For example, you could clarify the instruction with* **[Please type the two-character state abbreviation:]**.



TEST THE PARAMETER

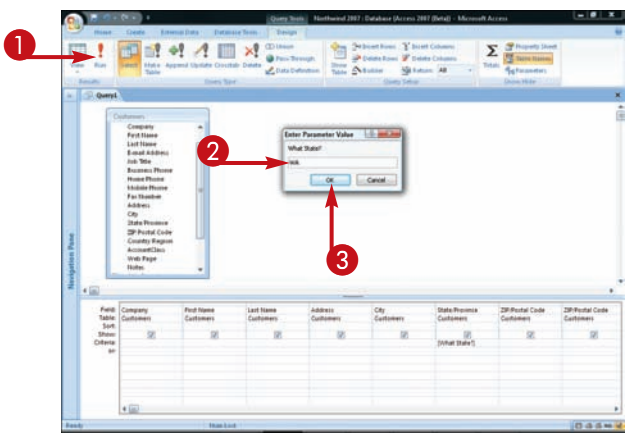
1. Click **Run**.

Note: *Because this is a select query, there is no difference between Run and View. You can use either one.*

The prompt for the parameter appears.

2. Type the variable in the text box.
3. Click **OK**.

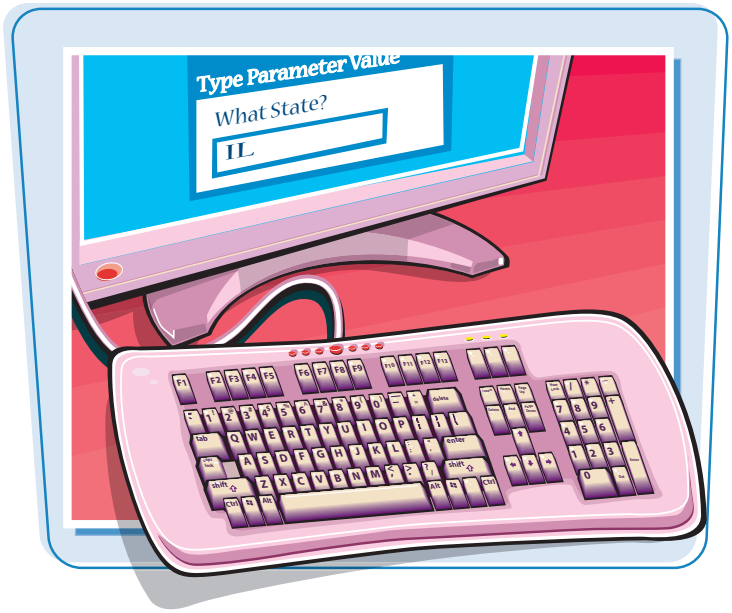
The datasheet opens with just the records that match the variable.



Note: *If you want to rerun the prompt from Datasheet view without returning to Design view, press* Shift + F9 .

Understanding Parameter Syntax

One of the difficulties in creating a parameter prompt is making it easy for users to enter the values that they want without generating an error or unwanted results. To help with this, you can modify the basic prompt and combine it with other criteria to permit a variety of responses.



Here are some examples that use the state prompt from the preceding section as their basis:

Entry in Criteria	*Permissible Responses*
[Which State?]	Entire state abbreviation.
Like [Which State?]	Entire state abbreviation
	OR
	Any portion of field contents with a wildcard.
	For example, use **C*** to see CA, CO, and CT or ***A** to see CA, IA, PA, and WA.
Like [Which State?] or Is Null	Entire state abbreviation
	OR
	Any portion of field contents with a wildcard
	OR
	Press Enter or click **OK** without entering anything to display all records.
Like [Which State?] & "*"	Entire state abbreviation
	OR
	Any portion of field contents with a wildcard, where the wildcard applies to the value in any position.
	For example, ***A** displays all values with *A* anywhere in their name.
	OR
	Press Enter or click **OK** without entering anything to display all records.

CHAPTER



Creating Forms



Forms provide an easy-to-use interface for data entry and editing. Forms are especially helpful for databases that will have less-experienced users assisting you because onscreen forms can mimic familiar paper forms. In this chapter, you will learn how to create forms, group and arrange fields on them, and define their tab order.

Understanding Forms 160
Create and Save a Form.....162
Create a Form with the Form Wizard 164
Create a Form in Layout View 168
Create a Form in Design View 170
Delete a Field from Design View 171
Arrange Fields on a Form 172
Group Fields Together 174
Define the Tab Order on a Form 175

Understanding Forms

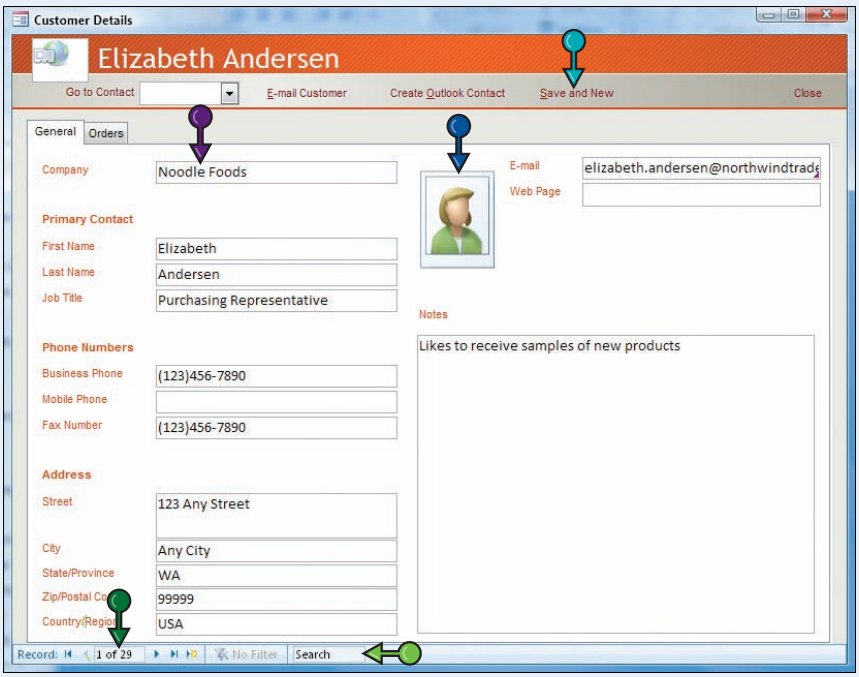
A form is a view of one or more tables that is designed to be used for data entry and editing. By creating forms, you can make your database more user-friendly for inexperienced users who are likely to need to enter and edit records in it.

One record at a time

The default type of form shows the fields as fill-in boxes for one record at a time. This makes it easier for users to enter a new record without getting confused by the multiple rows and columns of a datasheet.

Object display

In Datasheet view, imported objects such as graphics appear as text names, but on a form, depending on the data type, Access might be able to display them as they actually appear. For example, pictures of employees can be displayed with each employee's record.



Form header

A form can have a running header that appears the same no matter which record is displayed. You can put anything you want in this header. In this example, hyperlinks to other forms appear, making it easy for the user to navigate between forms.

Record navigation

To move between records, users can use the Record navigation buttons. These are the same as in a datasheet, but they are more useful here because you cannot see other records without them.

Search

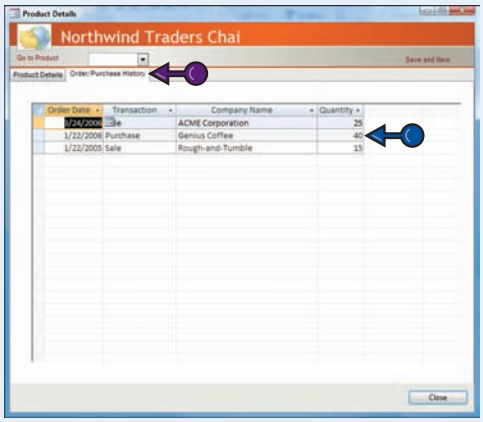
To search for a particular record, a user can type a word or phrase in the Search box and press Enter. The records are filtered so that only records that contain that word or phrase appear when the user scrolls through them with the record navigation controls. Click **No Filter** to remove the filter.

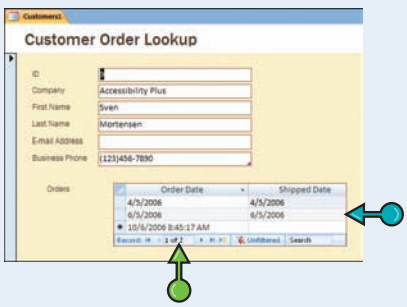
Multitabbed forms

A form can consist of multiple tabbed pages, with different form controls on each tab.

Datasheet-style forms

There are several design styles for forms besides the standard one shown on the preceding page. For example, a form can resemble a datasheet, and can show multiple records at once.





Two sets of navigation controls

A subform has its own navigation controls by default, but your users might find it less confusing if you suppress their display. You can do that from the subform's properties.

Subforms

A subform shows the records from a different table or query that are related to the main record shown. For example, here the orders for a particular customer are being pulled from the Orders table, depending on which customer is chosen in the main form.

Create and Save a Form

Access 2007 makes it very easy to create several simple types of forms based on a table or query. Just one click will do it.



You can create three types of forms this way: a plain form; a split form, showing both the datasheet and the form at once; and a multiple-item form, showing multiple records.

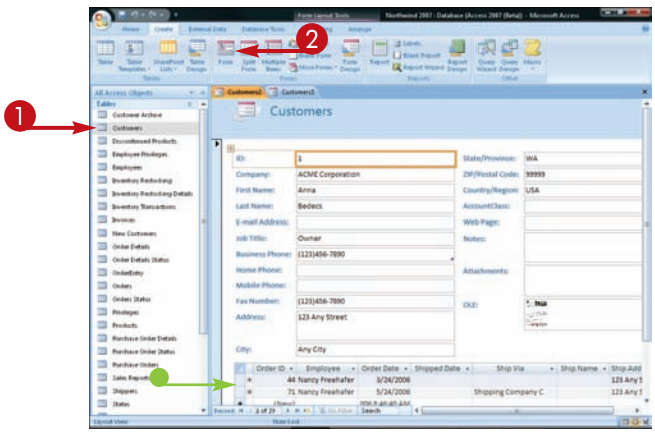
Create and Save a Form

CREATE A BASIC FORM

1. In the Objects pane, click the table or query to use.
2. On the Create tab, click **Form**.

   The form appears.

   - A subform appears showing a related table if any usable relationships exist.

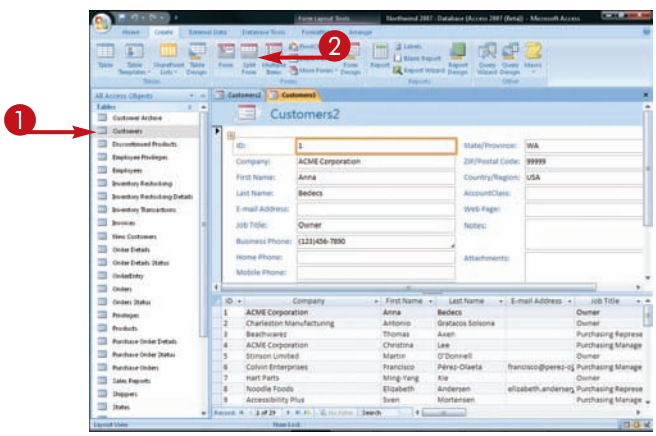


CREATE A SPLIT FORM

1. In the Objects pane, click the table or query to use.
2. On the Create tab, click **Split Form**.

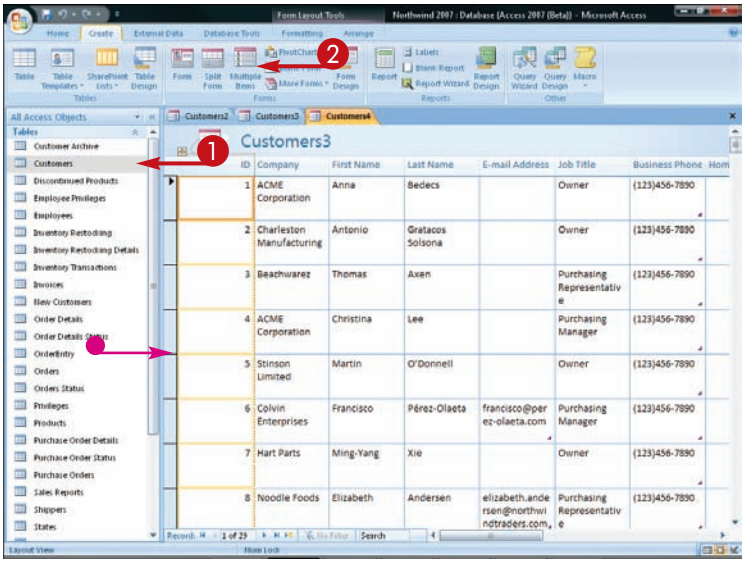
   The form appears in the lower part of the screen.

   The datasheet for the table or query appears in the upper part of the screen.



CREATE A MULTIPLE-ITEM FORM

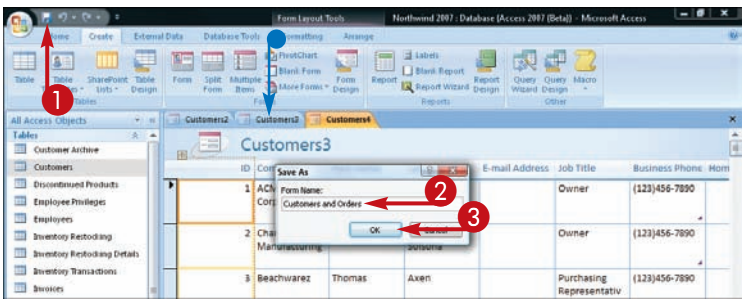
1. In the Objects pane, click the table or query to use.
2. On the Create tab, click **Multiple Items**.
   - A form appears with multiple records visible at once.



SAVE A FORM

1. Click .

   The Save As dialog box opens.
2. Type a name for the form.
3. Click **OK**.
   - You can right-click the form tab and click **Close** to close the form.

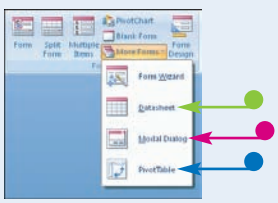


TIPS

What other form types can I create?

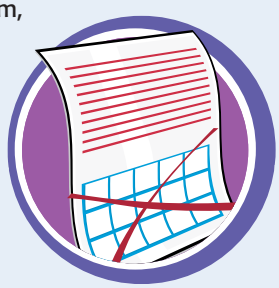
From the More Forms button, you can create:

- **Datasheet**
  Looks just like a regular datasheet, but it is actually a form. This is useful when you want to show a datasheet on a subform, for example.
- **Modal Dialog**
  Looks just like a dialog box, but it is actually a form. This is useful for creating navigational menu systems.
- **PivotTable**
  This is a configurable PivotTable view of the data. You will learn more about this in Chapter 12.



What if I do not want a subform on a form created with the Form button?

You can delete it easily. Select the subform, so a thick border appears around it, and press Delete on the keyboard.



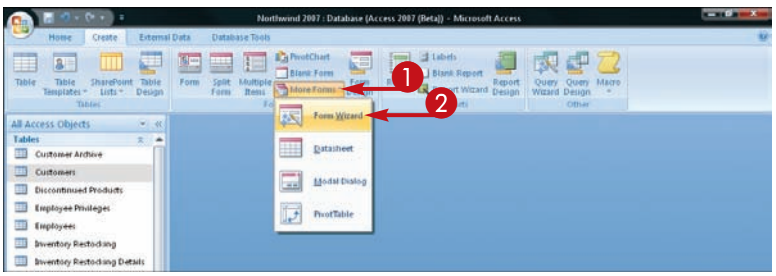
Create a Form with the Form Wizard



The Form Wizard enables you to create a form based on more than one table or query, not necessarily using all the available fields from them.

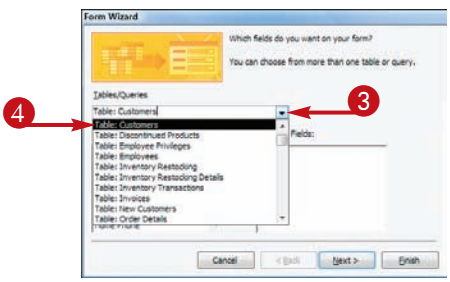
With the Form Wizard, you gain some flexibility without having to do all the form design work from scratch yourself.

Create a Form with the Form Wizard



1. On the Create tab, click **More Forms**.
2. Click **Form Wizard**.

The Form Wizard starts.



3. Click here to open a menu of tables and queries.
4. Click the table or query from which to pull fields.

5 Click a field.

6 Click here to move it to the Selected Fields list.

Note: *Add fields in the order in which you want them to appear on the form.*

- If you make a mistake, remove a field by clicking here.

7 Repeat step **5** to add more fields from the chosen table or query.

8 Repeat steps **3** to **7** for other tables or queries if needed.

Note: *If you choose fields from more than one table or query, they must be related.*

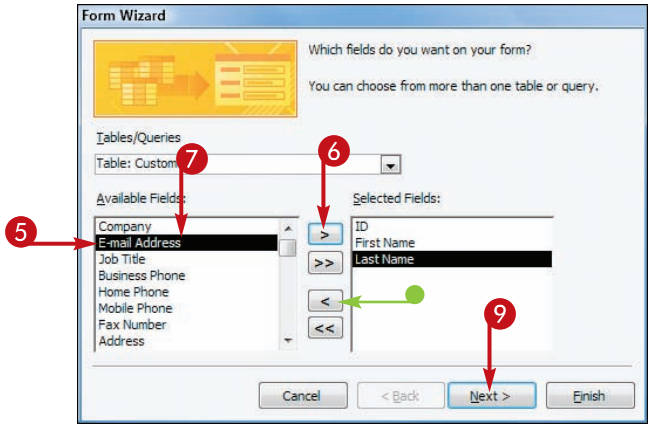
9 Click **Next**.

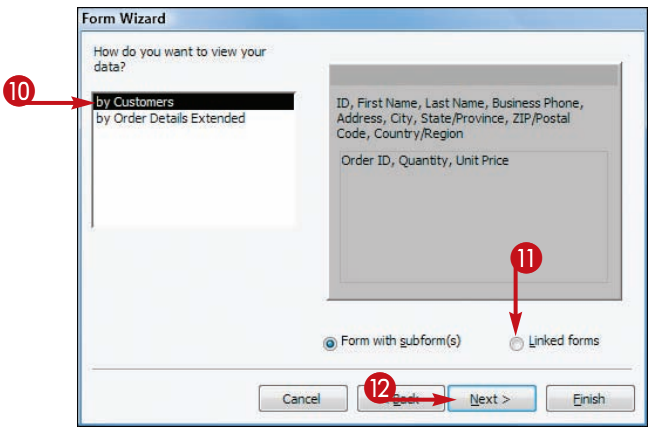
If you chose fields from two different tables/queries, you are asked which one should be the subform.

10 Click the option that best represents the layout that you want.

11 If you would rather have a linked form than a subform, click here (changes to).

12 Click **Next**.

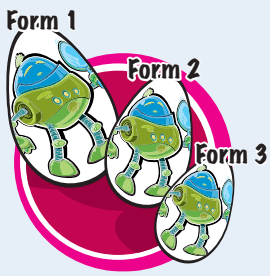




TIPS

Can I use fields from more than two tables/ queries?

Yes, but you are not prompted for subform information. Instead, all the fields appear on a single form. It is possible to create subforms within subforms with Form Design view, but not with the wizard.



Is it okay to not use all the fields from the table(s)?

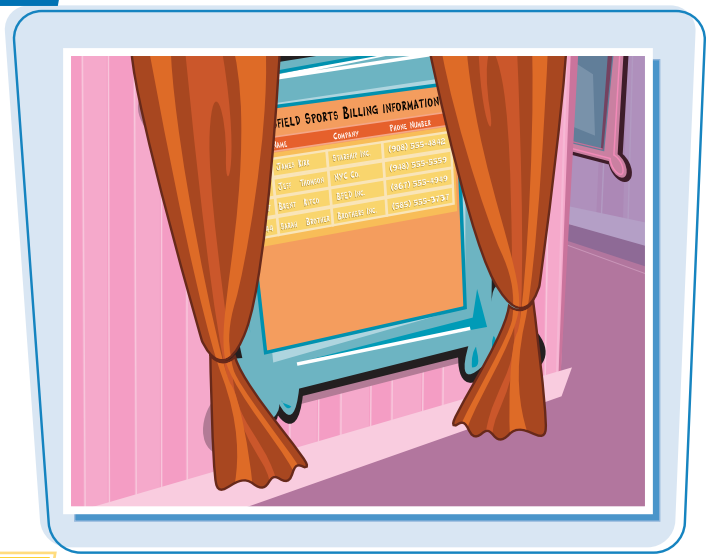
Yes, but keep in mind that users filling out that form will have no way of entering values into the fields that do not appear on the form. With an AutoNumber field, that is not a problem because the user cannot enter that anyway, but any other field will be blank if it is not on the form.



continued

Create a Form with the Form Wizard *(continued)*

The Form Wizard is useful not only for selecting the exact fields to include, but also for choosing a format and appearance for the form. You can change those things later, in Form Design view, but it is often easier to specify upfront what you want via the wizard.

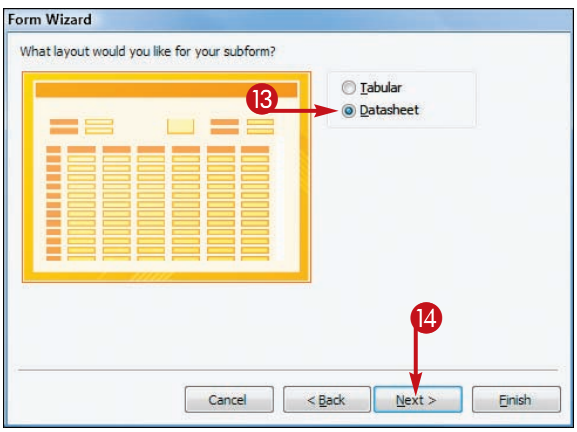


Create a Form with the Form Wizard *(continued)*

13 Click the layout for the form (changes to).

Note: *If you are creating a form with a subform, this screen asks you to choose the layout for the subform, rather than the main form. For a form/subform layout, the main form is always Columnar when constructed by the wizard.*

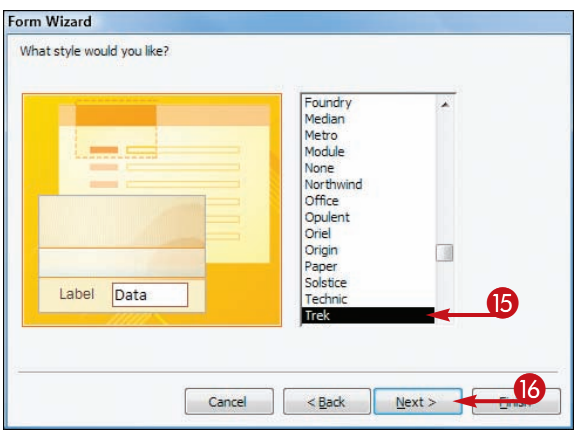
14 Click **Next**.



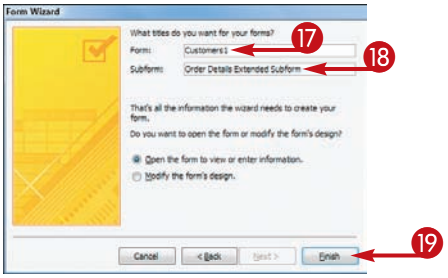
15 Click the AutoFormat style that you want.

Note: *You can click the various styles to see previews of them before deciding on one.*

16 Click **Next**.

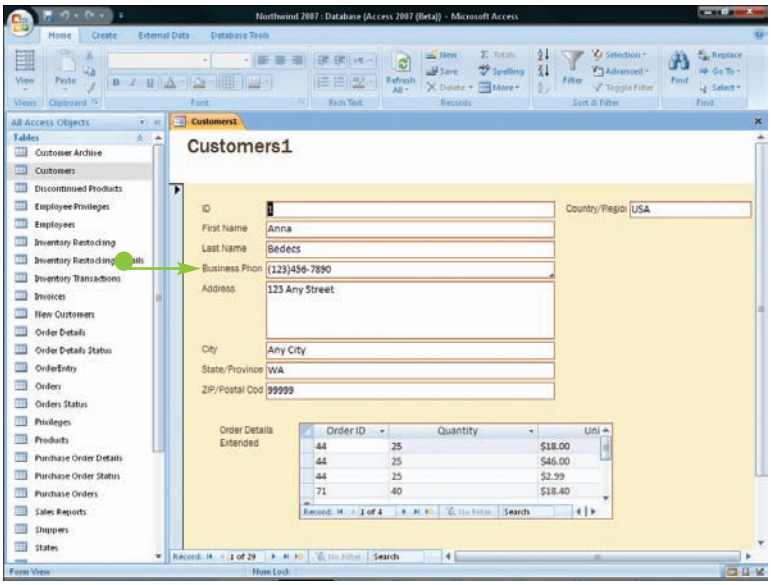


17. Type a name for the form, replacing the default name.
18. If you created a subform, type a name for the subform, replacing the default name.
19. Click **Finish**.



The form appears in Form view.

- Some of the labels may appear truncated; you can fix this in Form Design view later; see "Arrange Fields on a Form" for more information.



TIPS

Do I need to save the form before I close it?

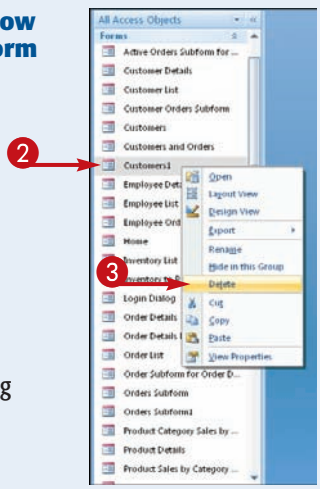
No, when you specify a name in step **17** and optionally in step **18**, you are supplying the filenames to be used. Access automatically saves the form and subform, if applicable, using those names.



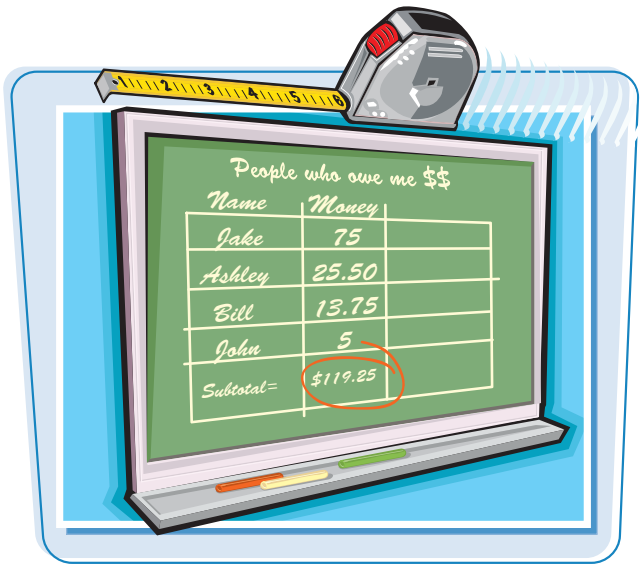
I made a mistake; how do I get rid of the form I just created?

Delete the form as you would any other object:

1. Locate it in the Objects list.
2. Right-click it.
3. Click **Delete**.
4. In the warning dialog box, click **Yes**.



Create a Form in Layout View



Layout view, new in Access 2007, lets you create a form by dragging and dropping fields on to a blank page. It is not as flexible as Form Design view, but it is much easier because you do not have to worry about fields and labels lining up correctly or using consistent spacing.

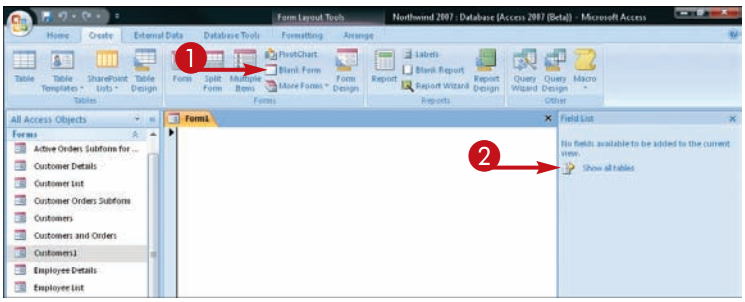
Create a Form in Layout View

CREATE THE FORM

1. On the Create tab, click **Blank Form**.

   A blank form appears, along with a Field List pane.

2. Click **Show all tables**.



   A list of all the tables appears.

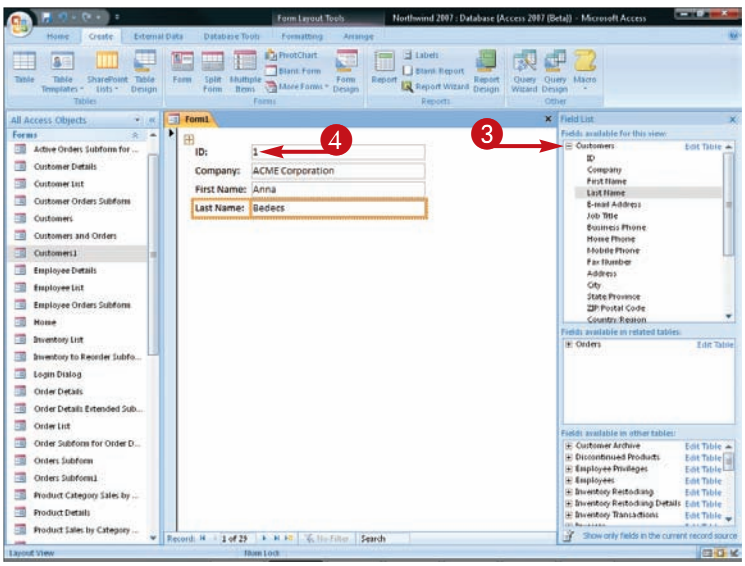
3. Click + next to a table.

   A list of the fields in the table appears, and + changes to –.

4. Drag a field from the Field List onto the form.

5. Repeat step **4** to add more fields.

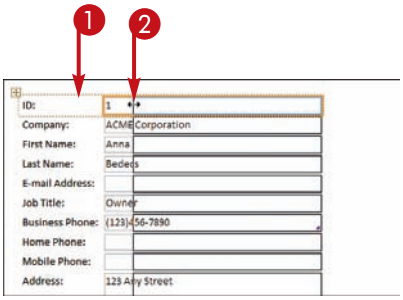
   The space allotted for the field labels increases as fields with longer labels are added, so no labels are truncated.



ADJUST THE SPACING BETWEEN LABELS AND FIELDS

1. Position the mouse pointer between a field and its label.
2. Drag to the left or right to change the spacing.

   The change affects all fields, not just the one that you dragged.



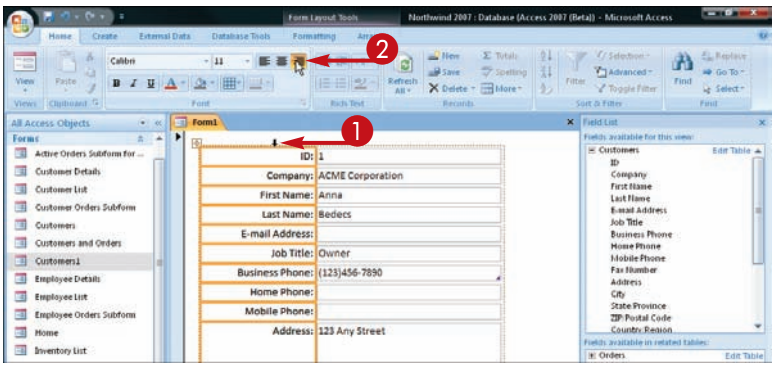
ADJUST LABEL ALIGNMENT

Note: *By default, labels are left-aligned. You can make them right-aligned with the fields if you prefer.*

1. Position the mouse pointer above the top label, so a black arrow appears, and click.

   The entire column is selected.
2. On the Formatting tab, click the Align Right button.

   All the labels are right-aligned.



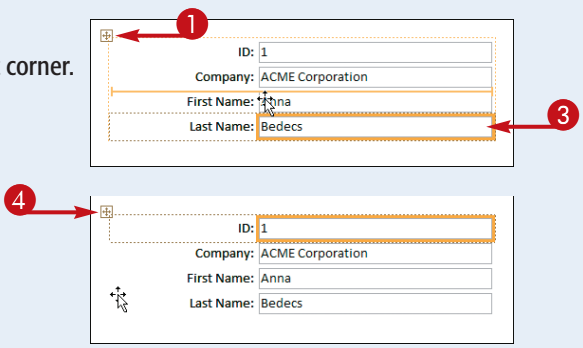
TIP

Can I rearrange fields after placing them on the layout?

Yes. Select a field and drag it up or down to reorder the fields. To position individual fields away from the default single-column list, you must remove the layout template:

1. Select the layout by clicking the four-headed arrow in its upper-left corner.
2. On the Arrange tab click **Remove**.
3. Click a field to move.

   Each field now has its own four-headed arrow button.
4. Drag the four-headed arrow for that field to move the field.



Create a Form in Design View

Design view provides the most flexibility for creating forms. You can create a form in Design view that arranges the fields and labels in exactly the way you want them. Fields and labels are not restricted in their placements, as they are in Layout view.



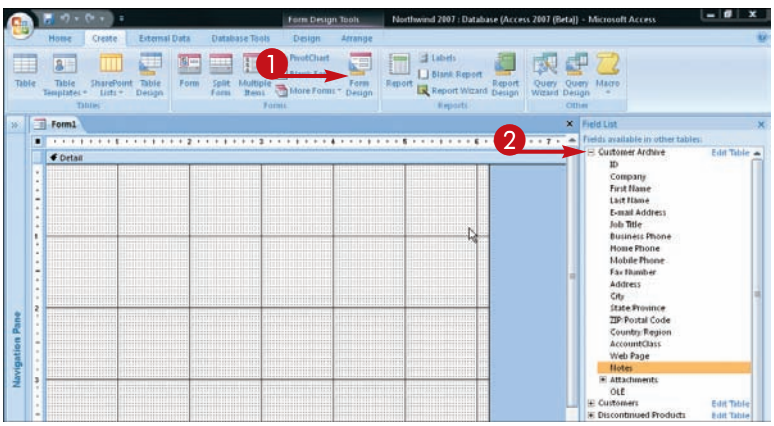
Create a Form in Design View

1. On the Create tab, click **Form Design**.

   A new form appears in Form Design view.

2. On the Field List, click + next to the table from which to select fields.

Note: *If the Field List does not appear, click* ***Add Existing Fields*** *on the Design tab.*



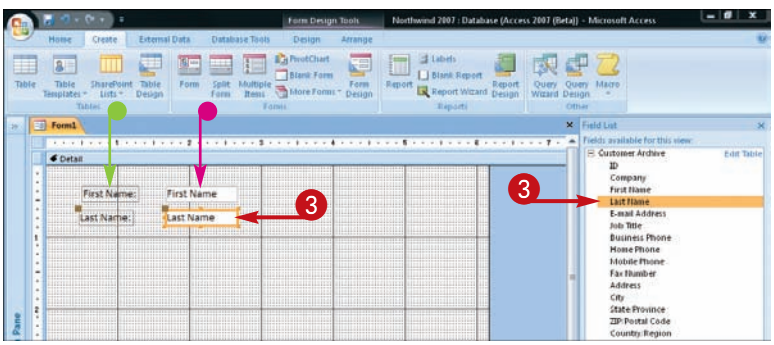
   + changes to –, and the list of fields appears.

   Both the field and an associated label appear.

   - This is the field label.
   - This is the field.

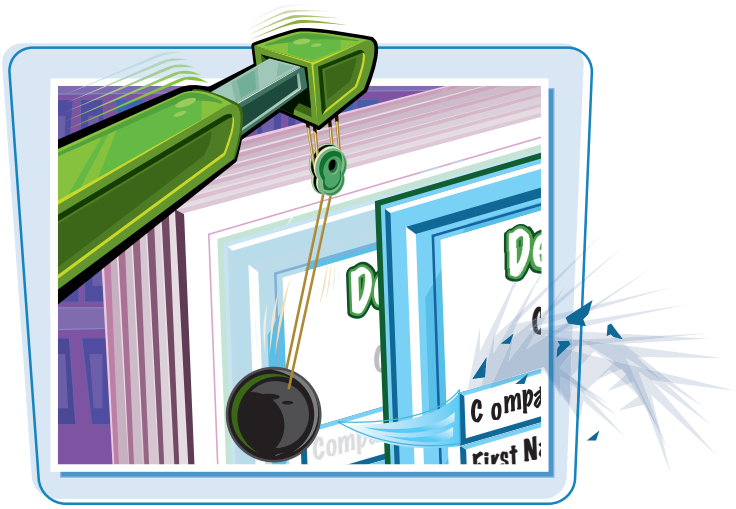
3. Drag and drop more fields on to the form.

Note: *You can drag more than one field at once by selecting multiple fields on the Field List before dragging.*



Delete a Field from Design View

You can either remove an entire field including its label, or you can remove only the label. Doing the latter enables the field to remain on the form, label-less. This can be useful, for example, when you want a single label such as Name followed by two different fields such as FirstName and LastName. It can also be useful when fields on the form are obvious and do not need labels to name them, such as Notes or Memo.



Delete a Field from Design View

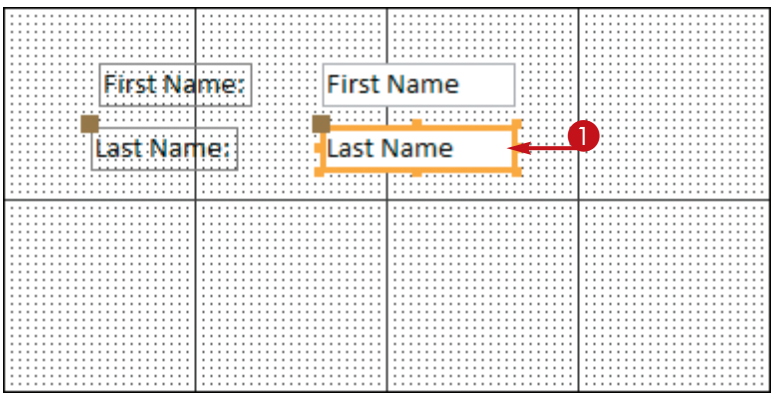
DELETE A FIELD

1. Click the field – not its label – to select it.

   A dark selection box appears around the field.

2. Press Delete.

   Both the field and its label are deleted.



DELETE A FIELD LABEL

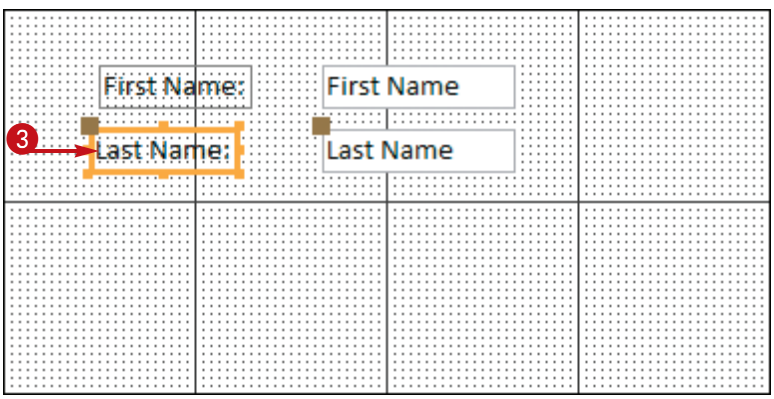
3. Click the field label – not the field itself – to select it.

   A dark selection box appears around the label.

4. Press Delete.

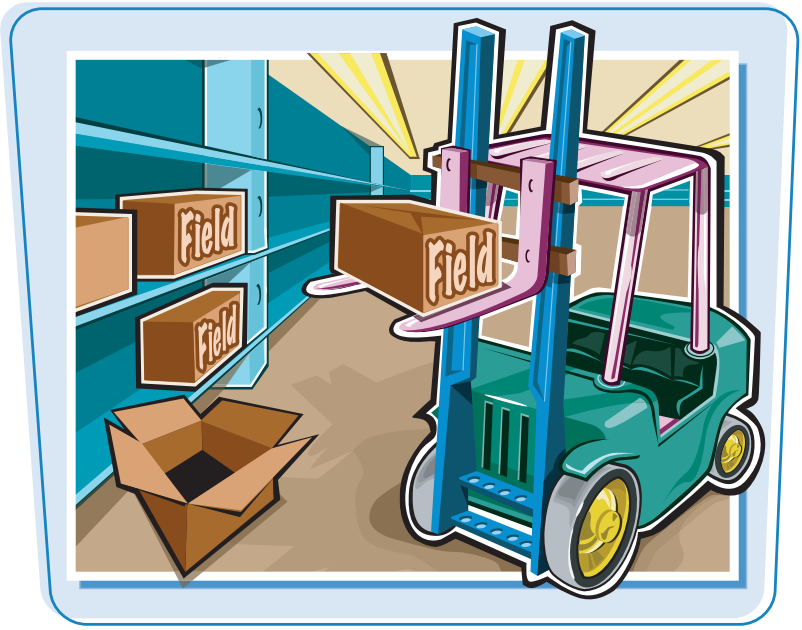
   The label is deleted, but the field remains.

Note: *You cannot do the opposite; you cannot delete the field but leave its label. You can, however, place freestanding labels on a form; see Chapter 10 for more information.*



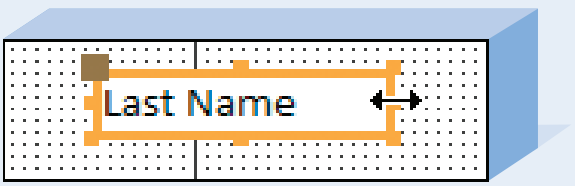
Arrange Fields on a Form

One advantage of working in Form Design view, as opposed to Layout view, is the flexibility in arranging fields. You can drag a field around on the grid freely or make it align and/or conform in size with other fields.



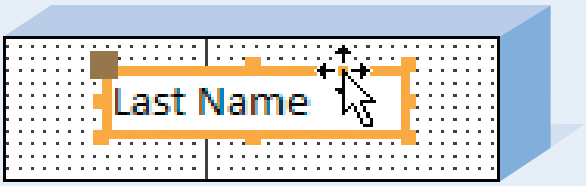
Resize a Field or Label Box

When you hover the mouse pointer over a selection handle on a selected field or label, the mouse pointer turns into a two-headed arrow. If you drag at this point, the field or label box will be resized.



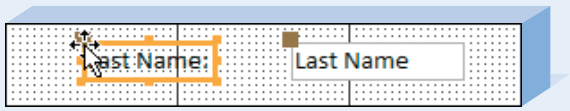
Move a Field

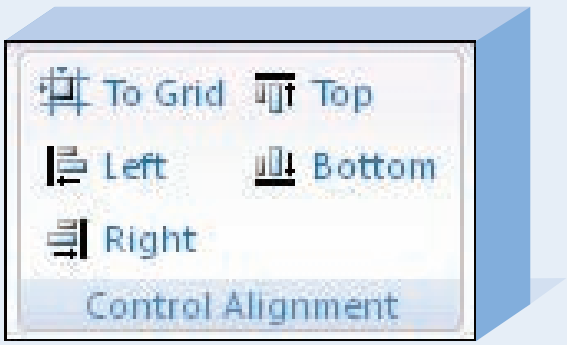
When you move a field, its label travels with it. To move a field, position the mouse pointer over the border of the field, but *not* over a selection handle, so the pointer turns into a four-headed arrow. Then drag.



Move Only the Field or Only the Label

Each field and each field label has a larger selection handle in its upper-left corner. If you drag the box by that selection handle, it moves separately from its associated objects. So, for example, you can move a label independently of its field, or vice versa. This can be useful to place the label closer to the field or above the field.

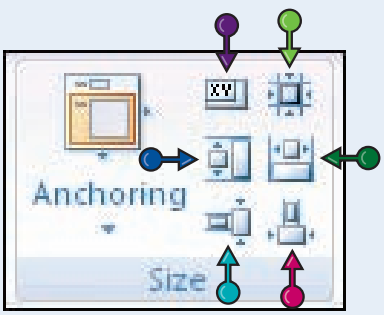




Align Fields and Labels

It is often useful to right-align or left-align a series of fields or field labels. The Arrange tab's Control Alignment group has buttons for this purpose. You can select several fields and then click one of these buttons to make the fields align neatly with one another.

Make Field Sizes Consistent



Sometimes a form looks best when all the fields are the same size. You can select multiple fields and then use the controls in the Size group on the Layout tab to standardize on a size:

Size to Fit

Size to Tallest

Size to Shortest

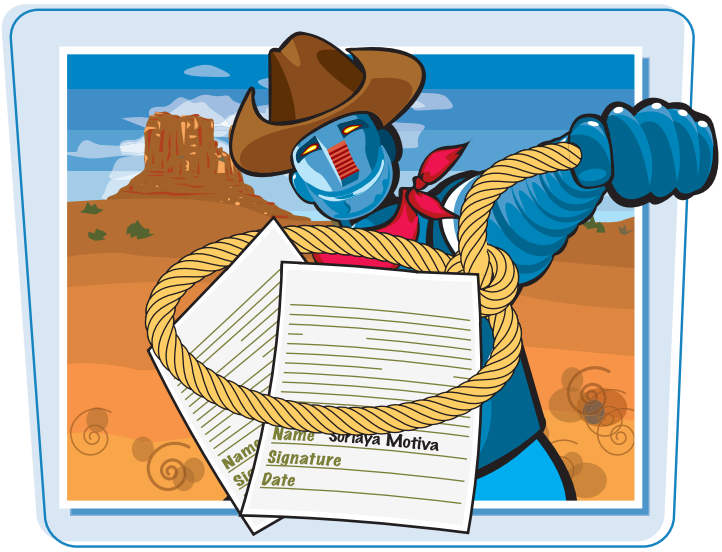
Size to Grid

Size to Widest

Size to Narrowest

Group Fields Together

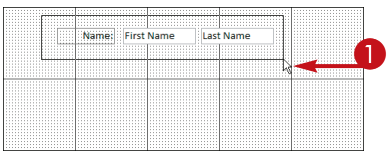
When moving fields around, it can be easier to work with a block of fields than to select and move each one individually. You can group several fields together so that any actions you perform on the group are applied to all individual fields within that group.



Group Fields Together

1. In Form Design view, drag a lasso around a group of fields to select them.

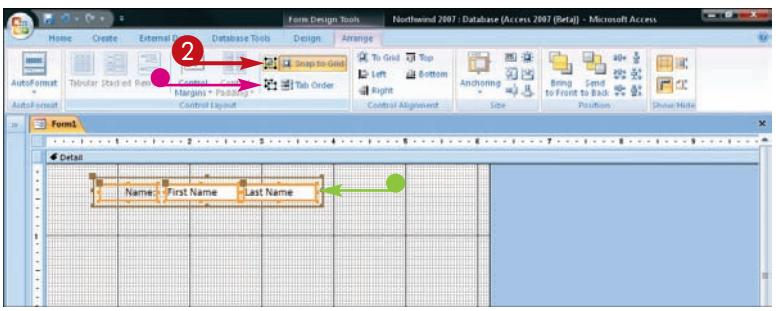
Note: *To lasso, drag an imaginary box from a spot above and to the left of the fields to a spot below and to the right.*



OR

Hold down the Shift key and click each field that you want to select.

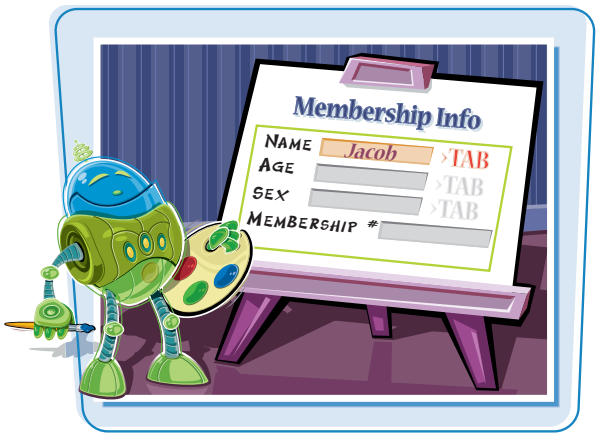
2. On the Arrange tab, click the Group button.



- A box appears around the selected fields, indicating that they are grouped.
- To ungroup the fields, click the Ungroup button.

Define the Tab Order on a Form

The tab order is the order in which the insertion point moves from one field to another when the user presses Tab. The default tab order is the order in which the fields were added to the form. You can change this, however, to any order that you prefer.

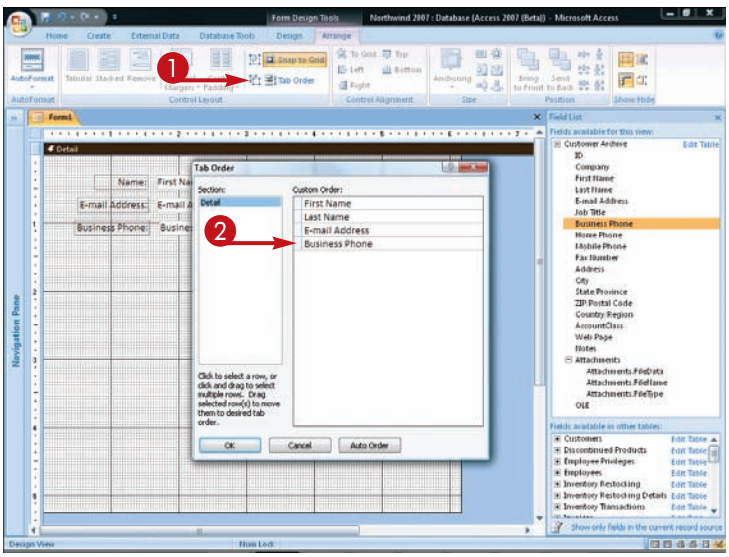


Define the Tab Order on a Form

1. In Form Design view on the Arrange tab, click **Tab Order**.

   The Tab Order dialog box opens.

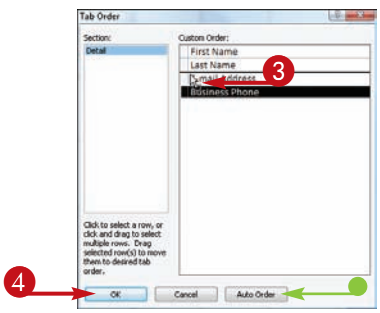
2. Click to the left of a field name to select it.



3. Drag the selected field name up or down in the list.

   - Alternatively, you can click **Auto Order** to set the tab order based on the positions on the form.

Note: *Auto Order orders fields from top to bottom. If two fields have the same vertical position, it orders them from left to right.*



4. Click **OK**.

   The dialog box closes, and the new tab order goes into effect.

CHAPTER

10

Modifying and Formatting Forms



The basic forms that you created in Chapter 9 can be improved by applying formatting and using special sections such as headers and footers. In this chapter, you will learn how to use formatting and design features to make forms easier to use and more attractive.

Display the Header and Footer 178
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Display the Header and Footer



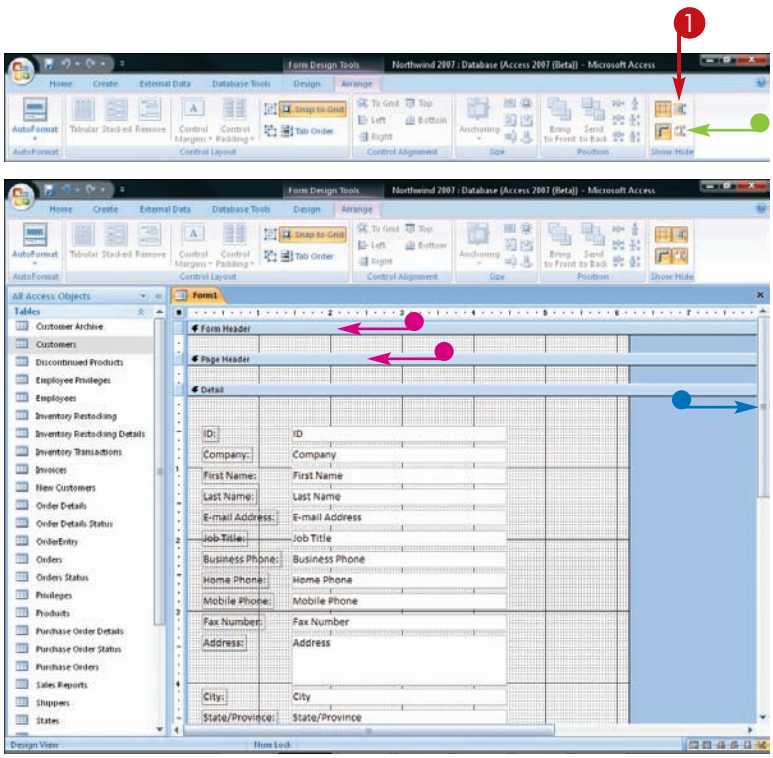
Each form can optionally have a header and a footer, where you can place information that should be the same regardless of which record is displayed. This can include a title, buttons that open other forms or hyperlinks, and so on.

There are two header/footer sets: Form and Page. The form header/footer appear on every form onscreen; the page header/footer apply to each printed page when you print the form.

Display the Header and Footer

1. In Form Design view on the Arrange tab, click the Form Header/Footer button.
   - To display the page header/footer instead (or in addition), you can click the Page Header/Footer button.

***Note:** The buttons are toggles; click one again to turn the header/footer display off.*

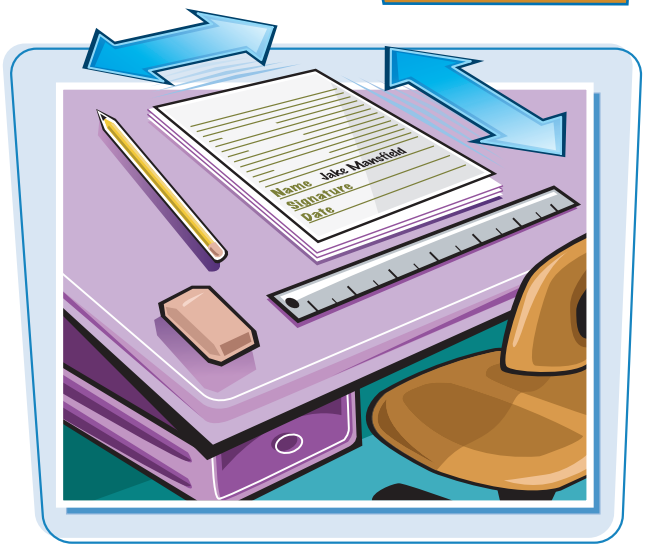


   - The header(s) appear at the top of the form, with their own title bars.
   - Scroll down if needed to see the footer(s).

Size Sections of a Form

Header and footer sections start out small vertically, but you can enlarge them as much as is needed to hold the content that you want to place there. You can also resize the main section of the form, the Detail section, to accommodate the fields there.

It is also sometimes helpful to temporarily enlarge a section so that you have more room to work and then tighten it back up again when its content is finalized.



Size Sections of a Form

1. In Form Design view, position the mouse pointer at the bottom edge of a section of the form.

   For example, to enlarge the Form Header section, position the mouse pointer at the top of the section divider below it.

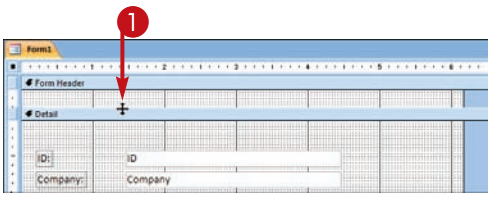
   The mouse pointer changes to a vertical double-headed arrow.

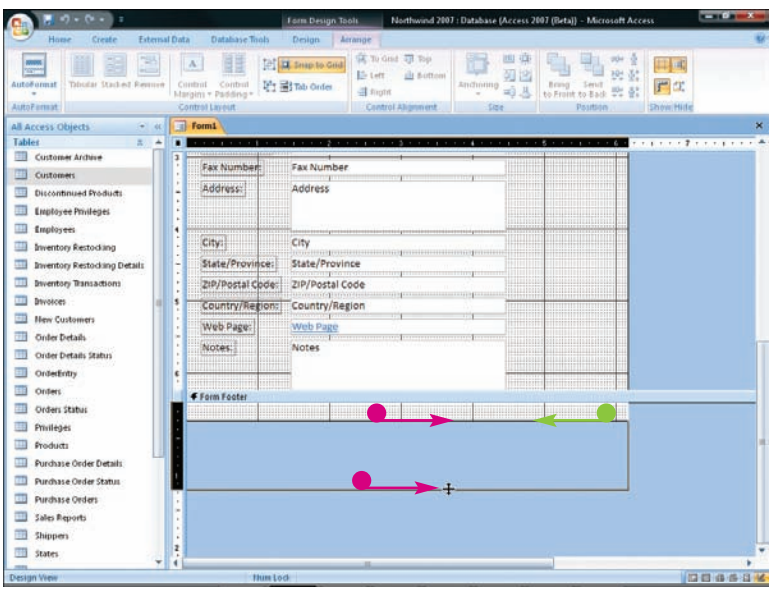
2. Drag up or down to change the height of that section of the form.

- The form footer does not have a divider below it.
- To enlarge the form footer, drag its bottom border down.

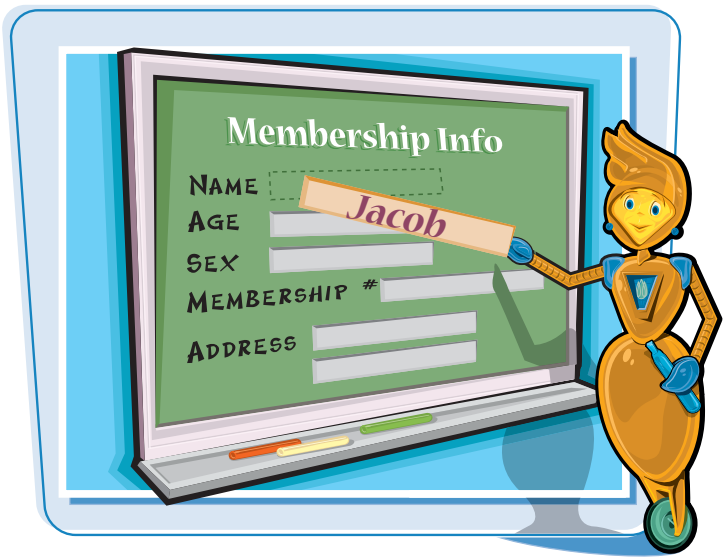
Note: *If you want only the header but not the footer, or vice versa, resize the unwanted section so that it takes up no space at all.*

Note: *If you do not want the header and footer at all, turn them off as described in the preceding section.*





Select Sections of a Form



After turning on headers and footers, you have a multisection form. Each section can be separately selected and acted on. For example, you can apply AutoFormats, which are covered later in this chapter, to individual sections.

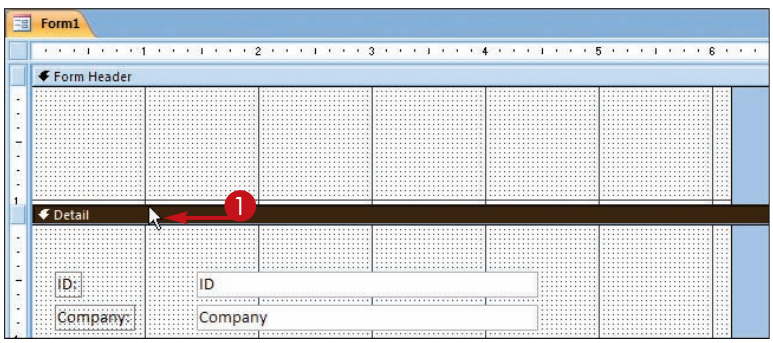
To make sure that formatting applies to the correct section(s), you must learn how to select a section and how to select an entire form.

Select Sections of a Form

SELECT AN INDIVIDUAL SECTION

1. Click the title bar of the section that you want.

   The title bar turns black, indicating that the section beneath it is active.

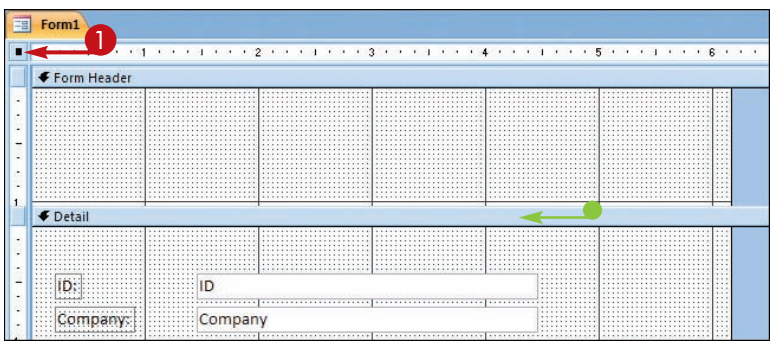


SELECT AN ENTIRE FORM

1. Click the square in the upper-left corner of the form.

   A small black square appears within the square, indicating that the form is selected.

- Any individual section title bars that were previously selected become unselected.



Add a Form Title

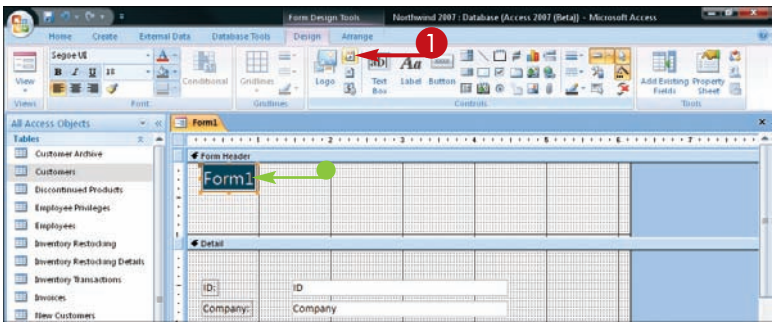
A form title appears in the form header and provides a name for the form. If the form header does not already appear when you insert it, Access turns on the form header.



You can create a form title manually by adding a label text box to the form header area, but Access makes it easy by providing a button on the Design tab specifically for this purpose.

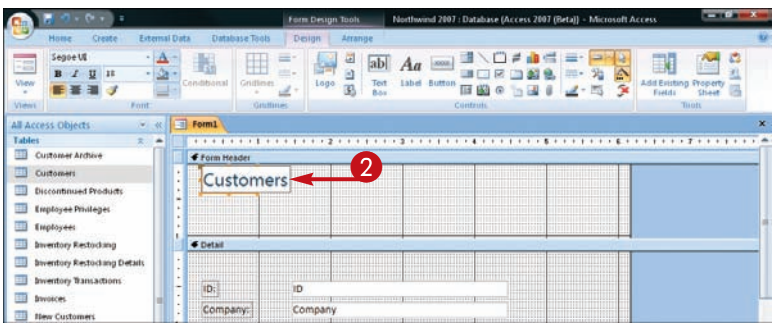
Add a Form Title

1. In Form Design view on the Design tab, click the Title button.
   - If the form header did not already appear, it appears, and a box appears in it with dummy text, such as "Form1."



2. Type the text for the title.

   Because the dummy text was already selected, typing new text replaces it.



Apply an AutoFormat Preset

An AutoFormat is a preset collection of formatting that you can apply to your form, like a style or theme in a word-processing document. You can choose an AutoFormat preset to easily change the colors and fonts used on the form.

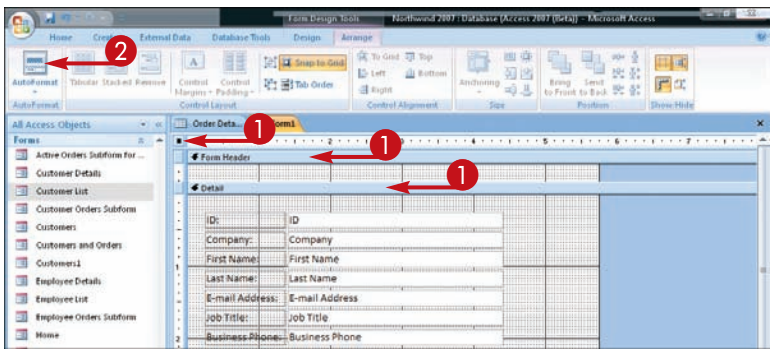


Apply an AutoFormat Preset

1. In Form Design view, select the section of the form to affect or select the entire form.

Note: *See "Select Sections of a Form" earlier in this chapter for details.*

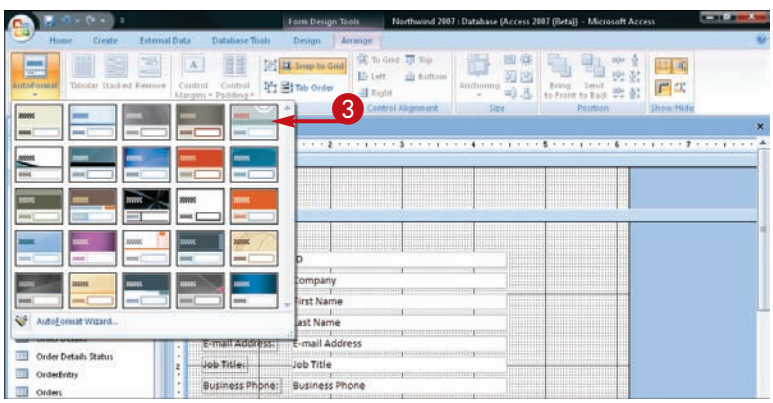
2. On the Arrange tab, click **AutoFormat**.



A gallery of formats appears.

3. Click the format that you want.

Note: *Most presets contain a contrasting color band at the top. If you apply the preset to the entire form with a header displayed, the band is placed in the header. If the header is not displayed, the band appears in the Detail section. If you apply the preset to any other section than a header, the band does not appear.*



Apply an AutoFormat Style

When you use the Form Wizard to create a form, you have the opportunity to select a formatting style. These same styles are also available to apply to a form from Form Design view.

The styles are the same as the ones in the presets, but there are more options. You can choose to exclude certain parts of the format, for example, such as the fonts or colors.



Apply an AutoFormat Style

1. In Form Design view, select the section of the form to affect or select the entire form.

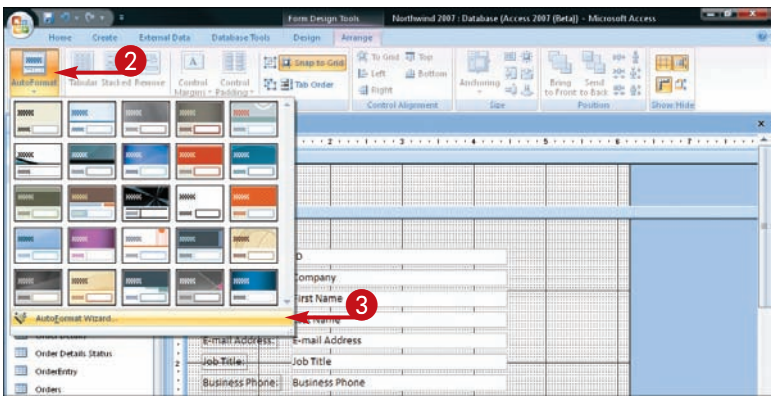
Note: *See "Select Sections of a Form" earlier in this chapter for details.*

2. On the Arrange tab, click **AutoFormat**.

   A gallery of formats appears.

3. Click **AutoFormat Wizard**.

   The AutoFormat dialog box opens.



4. Click the style that you want.

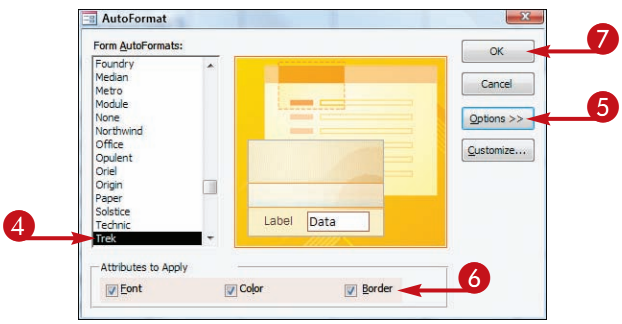
   You can click a style name to see a preview of it.

5. Click **Options**.

   The Attributes to Apply section appears in the dialog box.

6. Clear the check box for any part of the style you do not want to apply.

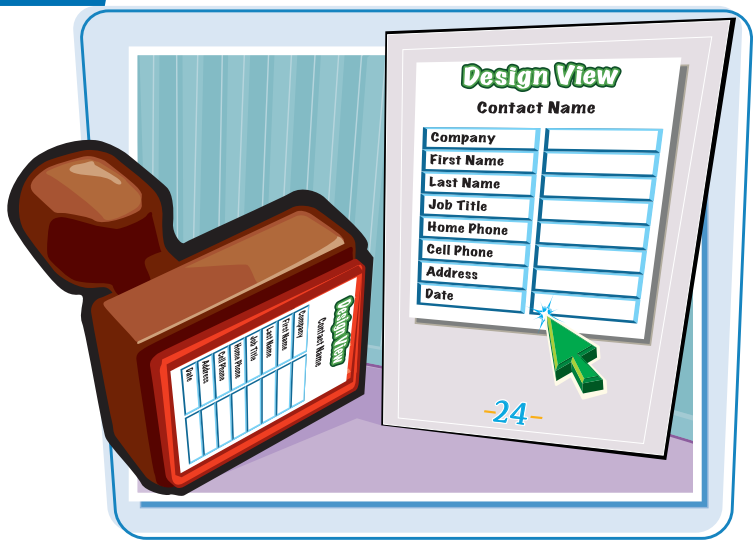
7. Click **OK**.



Note: *Choose* ***None*** *as the style to remove all styles. To remove only the background graphic, right-click the form's tab and choose* ***Properties*** *and then delete the* ***(image)*** *from the Picture property.*

Create an AutoFormat Style by Example

You can create your own AutoFormat styles. First format a form the way you want it, including the borders, colors, and fonts, and then define the current form's settings as a new style.



Create an AutoFormat Style by Example

1. In Form Design view, apply the color, border, background image, and font formatting that you want to the form.

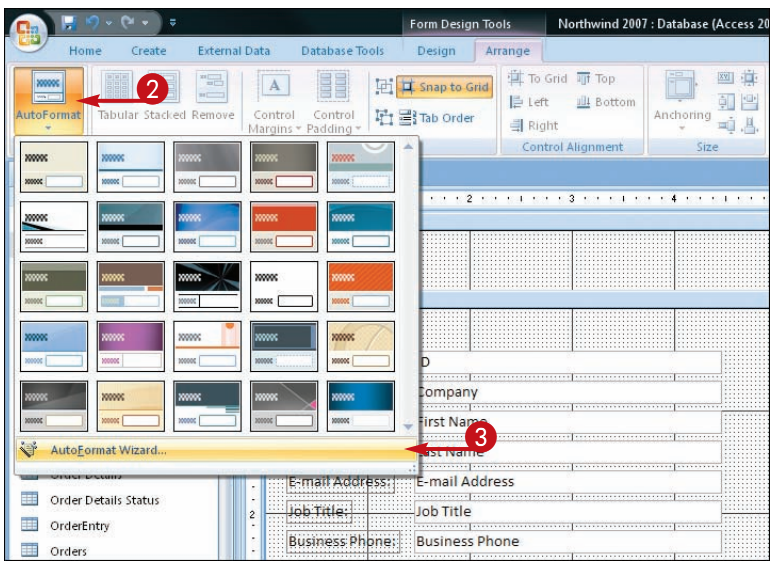
Note: *See the later sections of this chapter for details.*

Note: *You can start with an existing style and then make a change to it.*

2. On the Arrange tab, click **AutoFormat**.

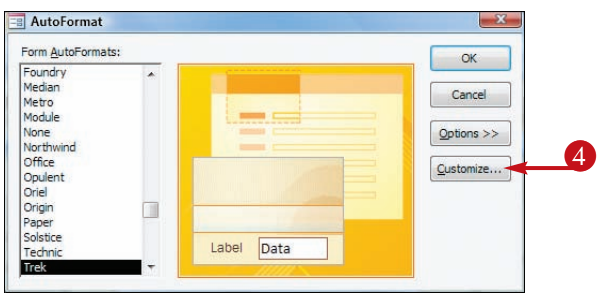
   A gallery of formats appears.

3. Click **AutoFormat Wizard**.



   The AutoFormat dialog box opens.

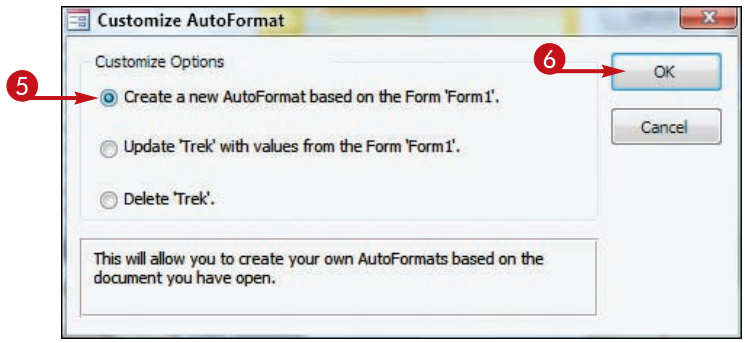
4. Click **Customize**.



The Customize AutoFormat dialog box opens.

5 Click **Create a new AutoFormat based on the Form {formname}** (changes to).

6 Click **OK**.



The New Style Name dialog box opens.

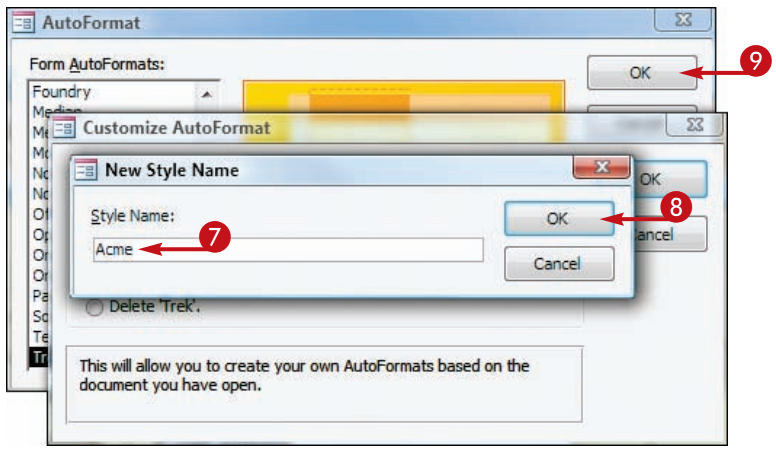
7 Type a name for the form.

8 Click **OK**.

The form appears in the list in the AutoFormat dialog box.

9 Click **OK**.

The AutoFormat dialog box closes.



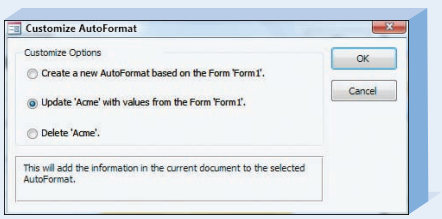


How can I change an existing style?

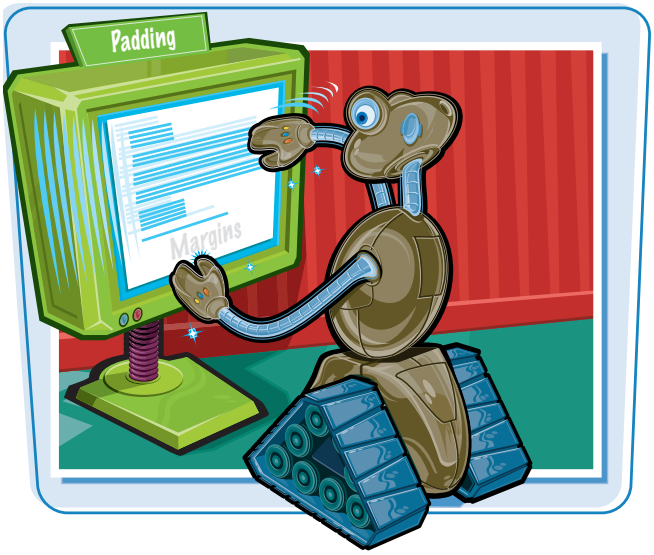
In the AutoFormat dialog box, make sure that the style you want is selected before clicking the **Customize** button. Then in the Customize AutoFormat dialog box, click **Update {stylename} with values from the Form {formname}**.

How can I delete a style?

In the AutoFormat dialog box, click the style you want to delete and then click **Customize**. Then in the Customize AutoFormat dialog box, click **Delete {stylename}**.



Adjust Internal Margins and Padding

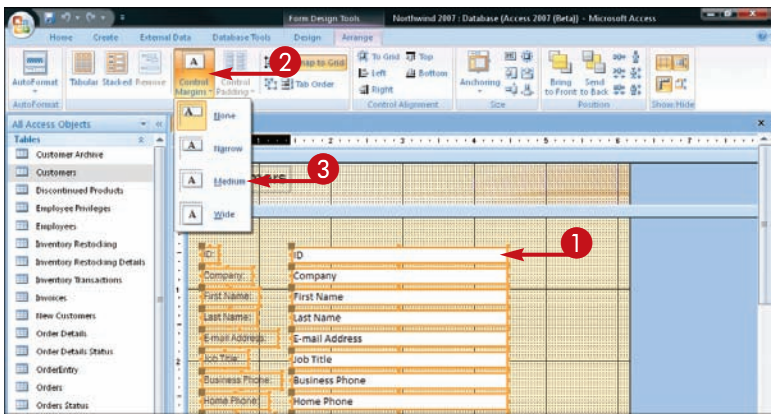


The *margin* setting for a field is the amount of space inside its box between the edge and the text. You can adjust the margins for individual fields, but forms look better if all the fields have the same margins.

The *padding* setting is the amount of space *outside* the box. When you adjust the padding, you change the amount of space between fields and between a field and its label.

Adjust Internal Margins and Padding

CHANGE THE MARGINS

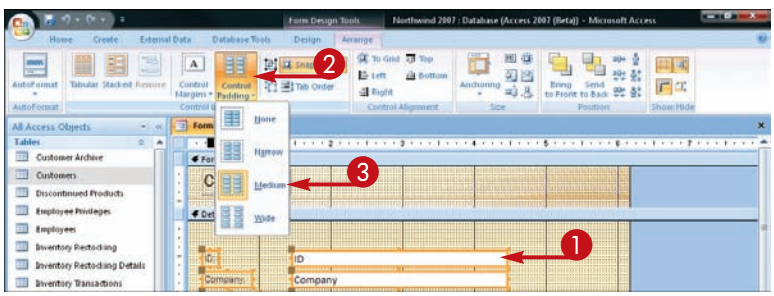


1. In Form Design view, select the field(s) to affect.

   Selecting the section bar will not select the fields; you can lasso the fields you want, however.

2. On the Arrange tab, click **Control Margins**.
3. Click the margin setting that you want.

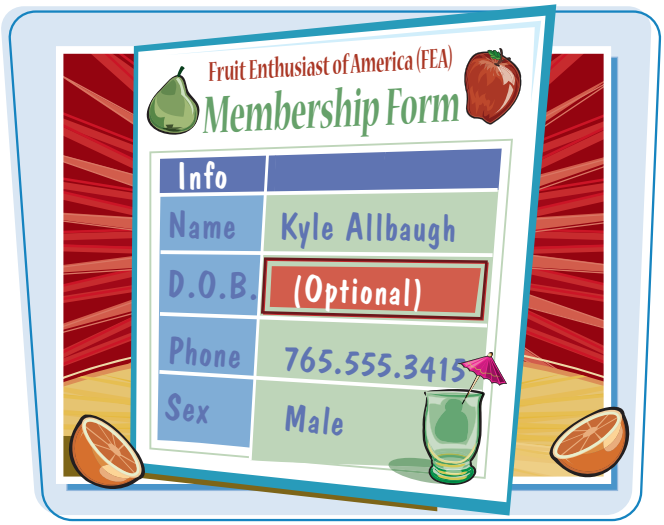
CHANGE THE PADDING



1. In Form Design view, select the field(s) to affect.
2. On the Arrange tab, click **Control Padding**.
3. Click the padding setting that you want.

Add a Label

A *label* is a text area that is not connected to a field or function. It exists on a form purely for informational purposes.



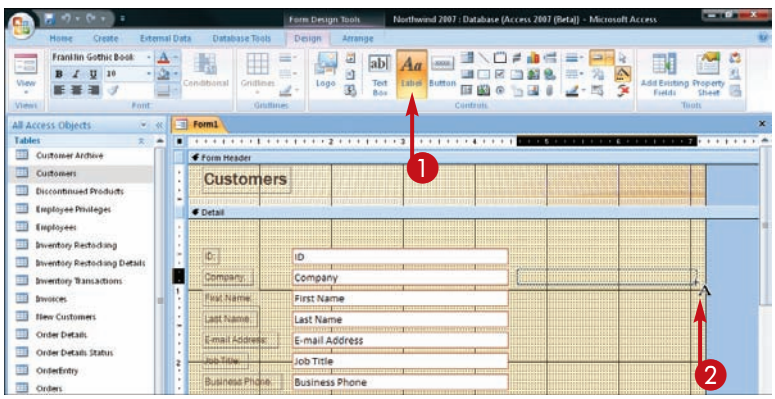
Earlier in the chapter, you learned how to create a form title, which is a type of label. You can also manually create other labels anywhere you like, in any section of the form.

Add a Label

1. In Form Design view on the Design tab, click **Label**.

   The mouse pointer changes to $^{+}\mathbf{A}$.

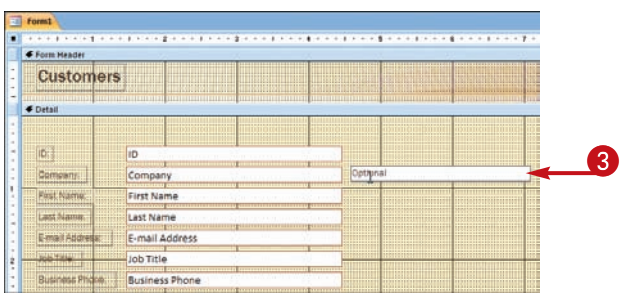
2. Drag a box where you want the label to be and release the mouse button.



   A label box appears with the insertion point flashing in it.

3. Type the label text.

4. Click away from the label when finished.



Format Label Text

You can apply some of the same types of formatting to a label as you would to text in a word-processing program, such as changing the font and size and using bold, italics, and underline.



The main difference is that in Access, text formatting is available only when the outer frame of the label is selected; you cannot select different formatting for certain characters than for others within a single label box.

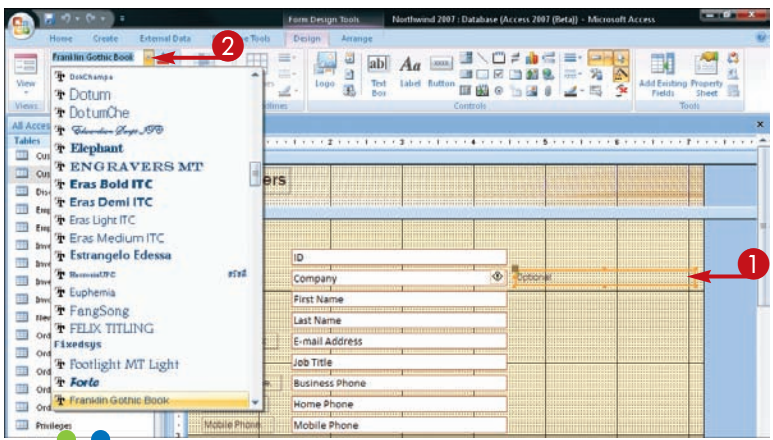
Format Label Text

1. In Form Design view, click the frame of the label to be formatted.

   You can select multiple labels at once by holding down Shift as you click each one.

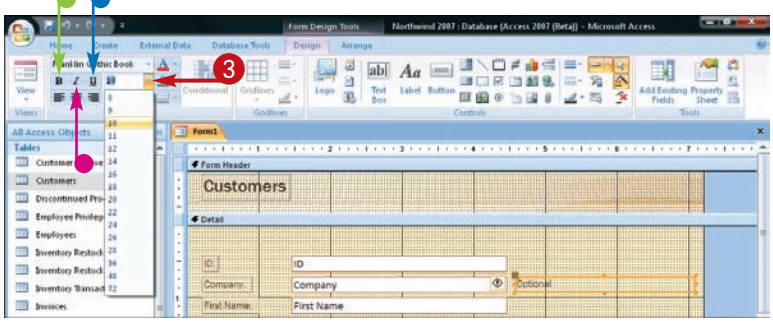
   You can format both labels you have created yourself and labels that are associated with fields.

2. On the Design tab, click here to open the font list and click a font.

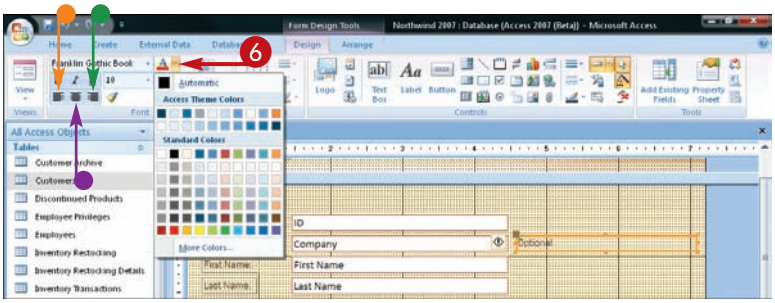


3. Click here to open the Size list and click a size.

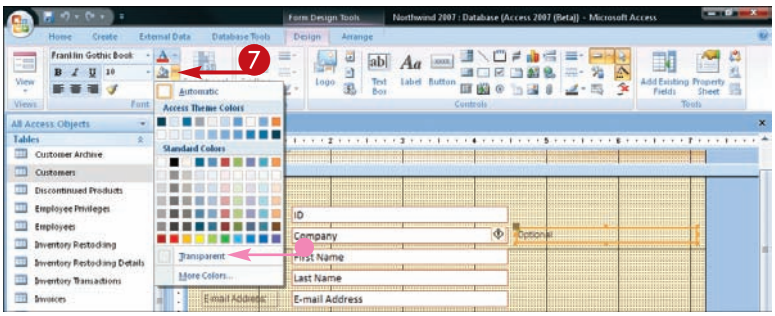
4. Click one or more of these buttons to apply its formatting:
   - Bold
   - Italic
   - Underline



5. Click an alignment button:
   - Left
   - Center
   - Right
6. Click here to open the Font Color list and click a color.



7. To place a colored background in the label box, click here and click a color.
   - You can click **Transparent** to remove the colored background.



TIPS

Can I format the text in a field?

Yes, just select a field instead of a label and apply the formatting as you learned in this section. It works exactly the same way.

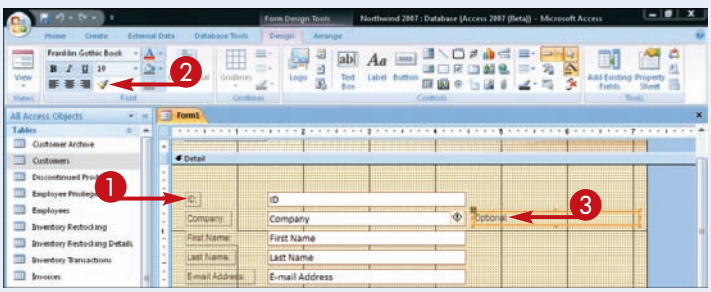


What is the paintbrush button on the Design tab?

This is the Format Painter button. It copies formatting from one place to another. To use it:

1. Select a label or field that is already formatted correctly.
2. Click the Format Painter button.
3. Click the label or field to apply the formatting to.

   If you want to click more than one field or label in step **3**, double-click instead of clicking in step **2**.



Change the Background Color

You can set a background color for each section individually. That way, the form header, for example, could be in a contrasting color to the detail section. Alternatively, you can set all the sections the same color for a uniform appearance.



Change the Background Color

1. In Form Design view, click the title bar of the section.

   The title bar becomes black.

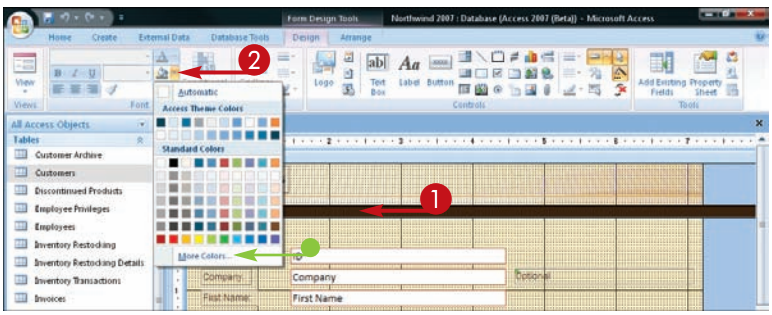
2. On the Design tab, click here and click the color that you want.

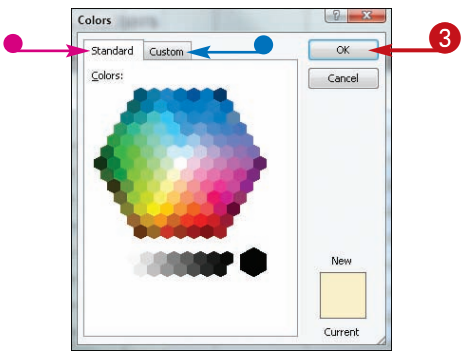
   - Alternatively, you can click **More Colors** to open a Colors dialog box.

   If you click **More Colors**, the Colors dialog box opens.

   - Click the **Standard** tab to choose from basic colors.
   - Click the **Custom** tab to define a color numerically.

3. Click **OK** when finished selecting a color.





Add a Hyperlink

Hyperlinks on a form are like labels, except that they are live links to the destinations they represent.



The hyperlinks you learn to create in this section exist only on the form; they are not stored in database fields. If you want to store hyperlinks in a table, use a Hyperlink field type.

Add a Hyperlink

1. On the Design tab, click the Insert Hyperlink button.

   The Insert Hyperlink dialog box opens.

2. Type the URL in the Address box.

Note: *A uniform resource locator (URL) is an Internet address, usually beginning with http://.*

- You can also click **Browsed Pages** and select a recently used URL.

3. Type the text that should appear on the form.

4. Click **ScreenTip**.

   The Set Hyperlink ScreenTip dialog box opens.

Note: *A* ScreenTip *is text that pops up when the user points at the hyperlink with the mouse.*

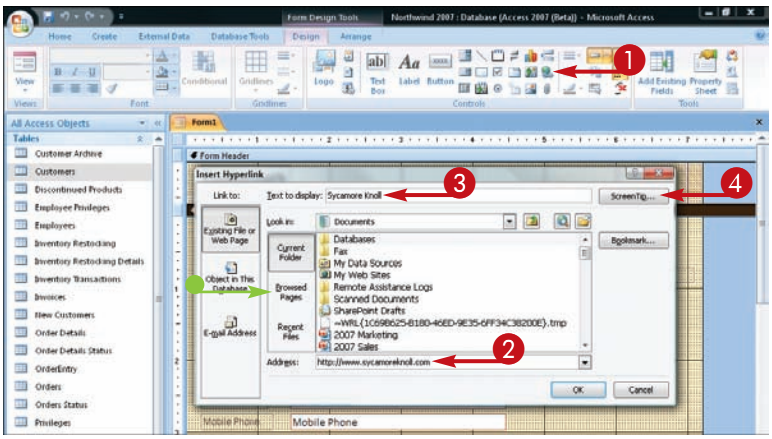
5. Type the ScreenTip to use.

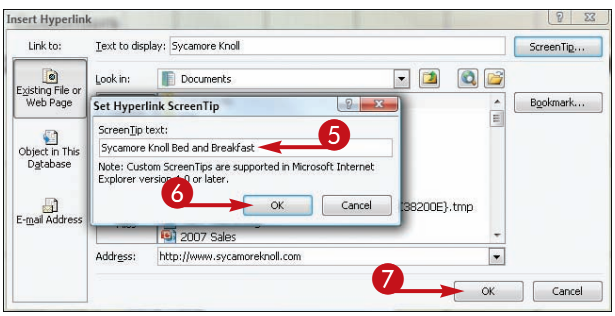
6. Click **OK**.

   You are returned to the Insert Hyperlink dialog box.

7. Click **OK**.

   The hyperlink is added to the form.





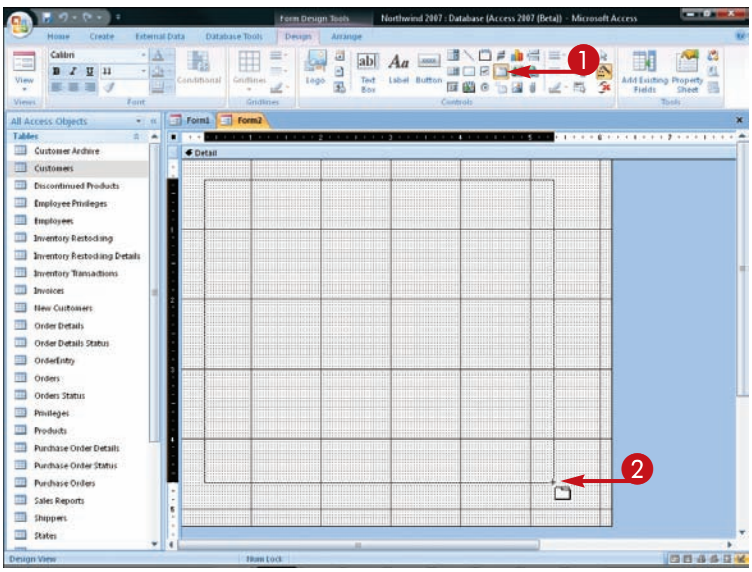
Add a Tabbed Section

When there are too many fields or labels to fit on a form at a usable size, you can use a tab control to create multiple tabs, or pages, on the form. Like the tabs on the Ribbon in Access, the tabs on the form can be clicked to switch to their associated set of fields and other controls.



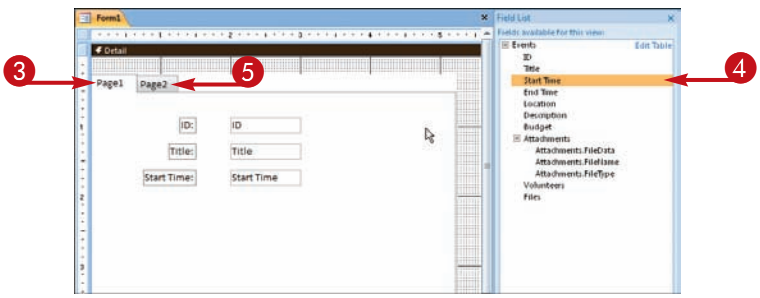
Add a Tabbed Section

ADD A TAB



1. On the Design tab, click the Tab Control button.
2. Drag on the form to create a rectangle representing the tab area and release the mouse button.

A tab control appears on the form with two tabs.



3. Click a tab.

A frame appears representing that tab's page.

4. Drag-and-drop fields from the Field List on to the frame.

If the Field List does not already appear, you can click **Add Existing Fields** to display it.

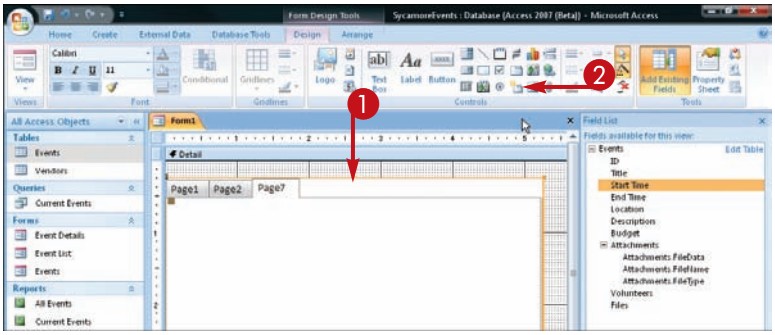
Note: *You can also add nonfield items such as labels and hyperlinks.*

5. Click the other tab to add fields to it.

ADD ANOTHER TAB

1. Click the outer frame of the tab control.
2. On the Design tab, click the Insert Page button.

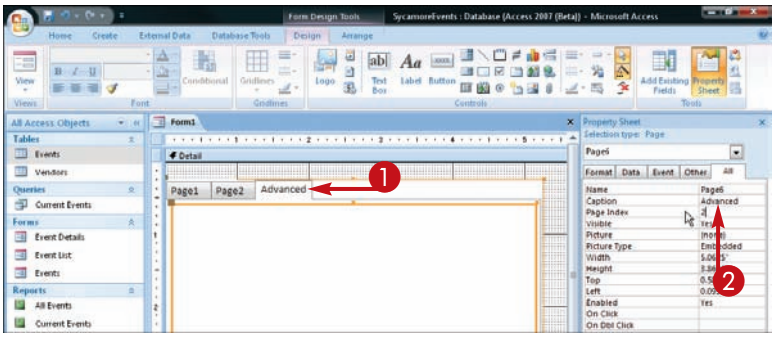
   Another tab appears in the tab control.



RENAME A TAB

1. Double-click the tab to rename.

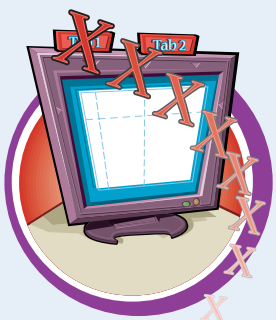
   The Property Sheet appears if it did not already.
2. In the Caption box, type the text that should appear on the tab.



TIPS

How do I delete a tab?

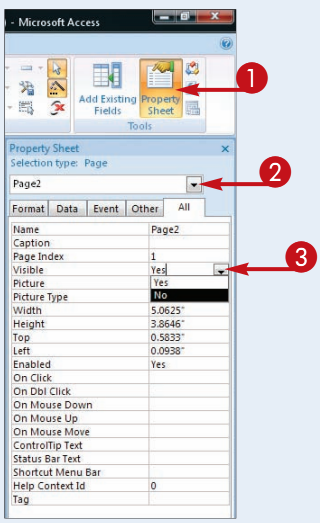
Right-click the tab and choose **Delete Page**.



How can I hide a tab without deleting it?

To hide a tab, set its Visible property to No:

1. On the Design tab, click **Property Sheet**.
2. Click here and select the tab page.
3. Click here and select **No**.



Insert a Logo or Image

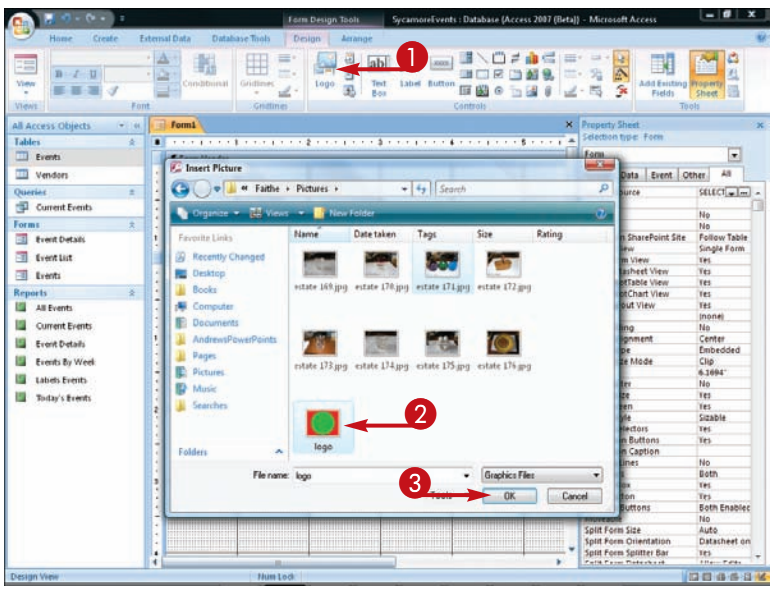
Just as the Title feature inserts a label in the form header, the Logo feature inserts a graphic in the form header.



If you want to insert a graphic anywhere else, you can use the Image feature. Images are like logos except that you can choose where to put them and you can define the size of the frame.

Insert a Logo or Image

INSERT A LOGO



1. On the Design tab, click **Logo**.

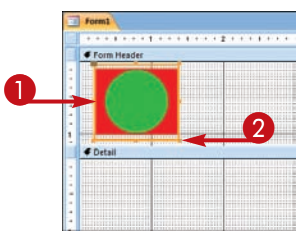
   The Insert Picture dialog box opens.

2. Click the picture to be inserted.
3. Click **OK**.

   The picture is inserted in the Form Header section.

   Depending on the resolution of the image file, it may cause the Form Header section to expand.

RESIZE A LOGO



1. Select the logo.
2. Drag a corner selection handle to resize the frame.

Note: *To maintain the frame's proportions, hold down* Shift *as you drag.*

Note: *If you do not maintain the proportions, extra blank space may appear on either the sides or the top and bottom, but the picture will not be distorted.*

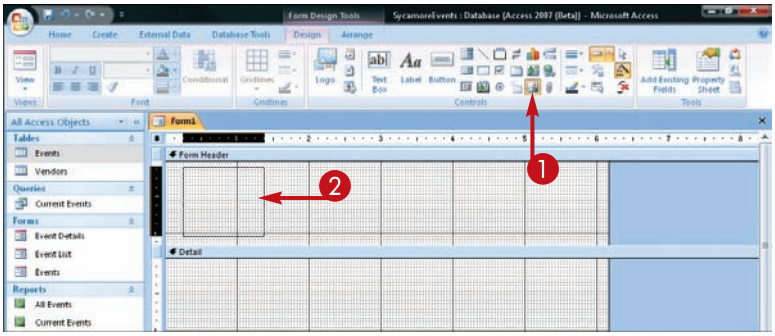
INSERT AN IMAGE

1. On the Design tab, click the Image button.

   The mouse pointer changes to .

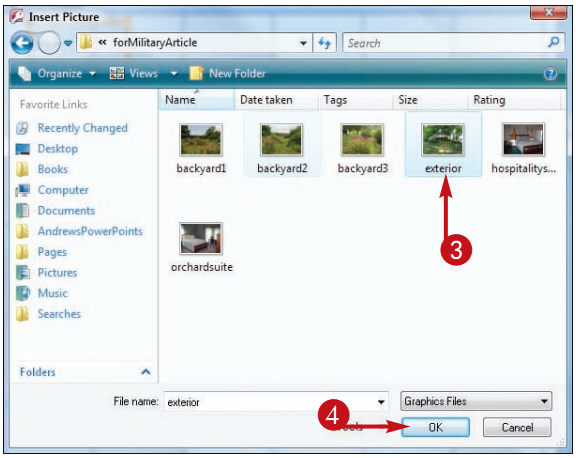
2. Drag to draw a box where and what size you want the image to be.

   When you release the mouse button, the Insert Picture dialog box opens.



3. Click the picture to insert.
4. Click **OK**.

   The picture is inserted in the frame.

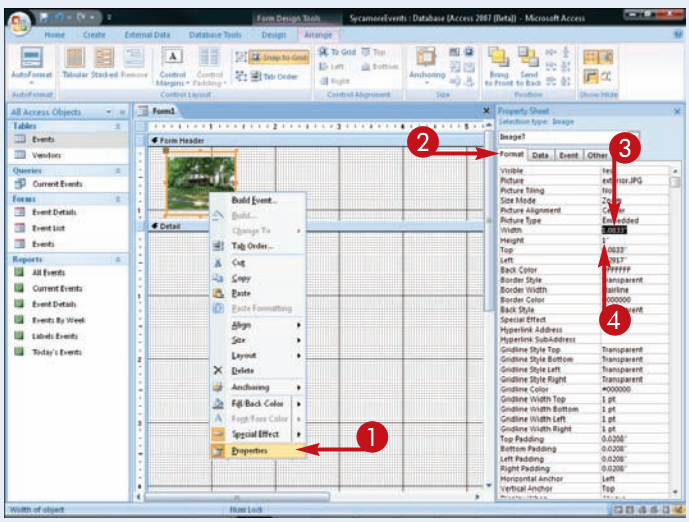




How can I make sure that a picture is a certain size exactly?

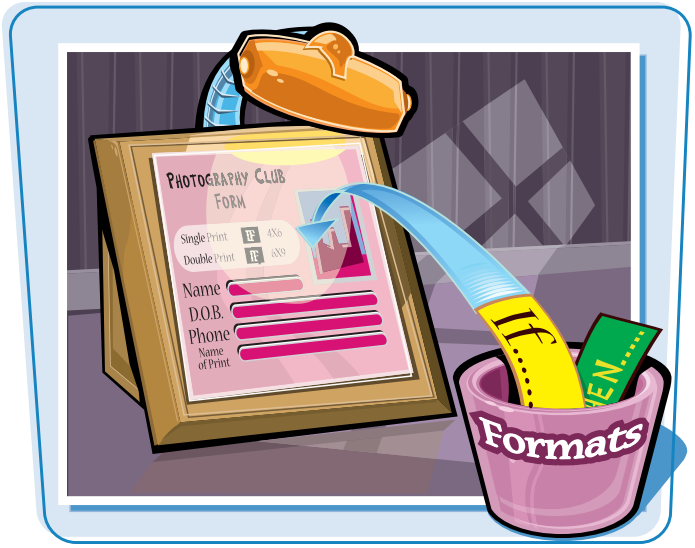
Set the picture's Height and Width properties:

1. Right-click the picture and click **Properties**.
2. On the Property Sheet, click the **Format** tab.
3. Click in the **Width** property and enter a value in inches.
4. Click in the **Height** property and enter a value in inches.



Set Conditional Formatting

Conditional formatting applies certain formatting if the data in a field meets a condition that you specify and other formatting if it does not. For example, you could set up a Balance field to display its value in red if the balance is negative.

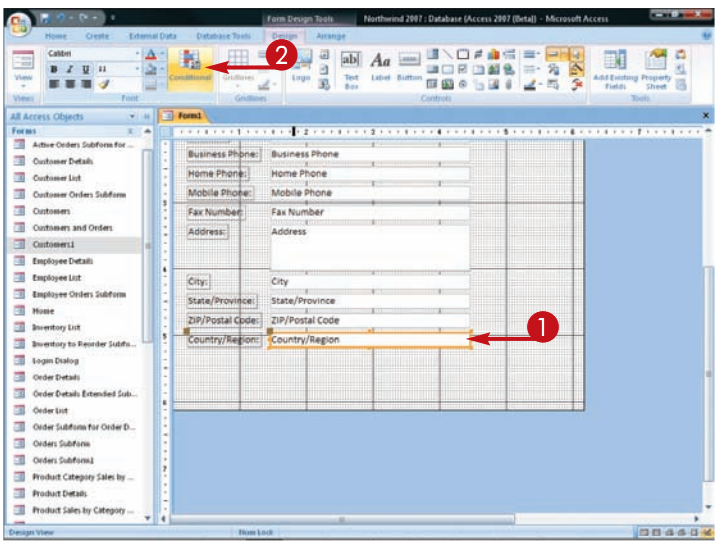


Set Conditional Formatting

1. Click the field to format.

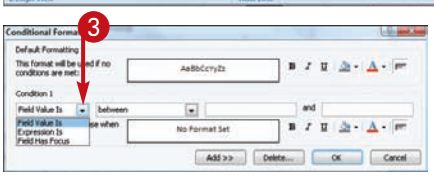
Note: *Make sure that you select the field, not its label.*

2. On the Design tab, click **Conditional**.

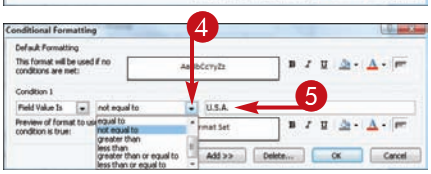


The Conditional Formatting dialog box opens.

3. Click here and select a condition.

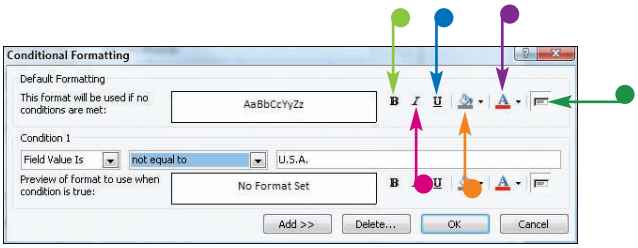


4. Click here and select a comparison operator.
5. Click here and type the value or text string.



6 You can select formatting in the Default Formatting area to define the formatting for records where the condition is not met:

- Bold
- Italic
- Underline
- Fill Color
- Text Color
- The Enabled/Disabled button toggles off the display of the formatting.



7 Use the Condition 1 area's controls to define the formatting for records where the condition is met.

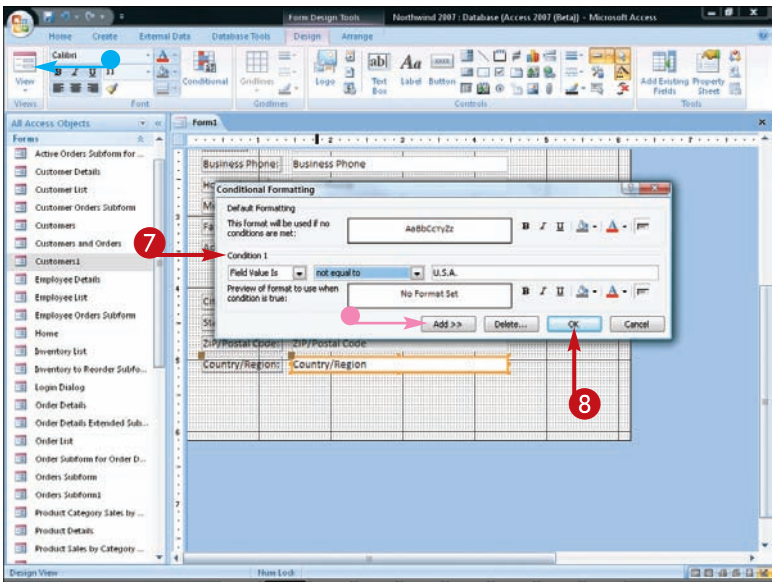
- To add another set of criteria, you can click **Add** and repeat steps **3** to **5** and **7**.

8 Click **OK**.

The conditions are applied to the field.

Note: *You do not see the results immediately because you are in Design view.*

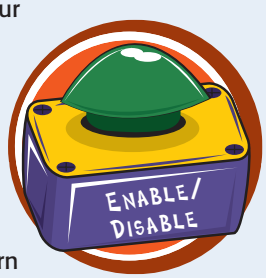
- You can click **View** to switch to Form view and scroll through a few records to check the condition.



TIPS

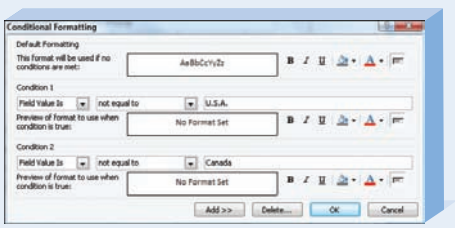
Why would I want to use the Enable/Disable button?

You can toggle off the conditional formatting with the Enable/Disable button for either Default Formatting or for any of your conditions in order to preserve your conditional settings without using them all the time. For example, perhaps you only want to use conditional formatting when a form is viewed onscreen, so you would turn it off before printing the form.



How do I delete one of the multiple conditions that I have set up?

To remove a condition, click **Delete** and then select the condition(s) to delete.



CHAPTER

11

Creating and Formatting Reports



Reports are views of your data, as are forms, queries, and table datasheets, but they have a special purpose: They are designed to be printed. A report can have more elaborate formatting and layouts than other objects you can print. You can create basic reports with default settings, or you can create custom layouts using the exact settings that work best for your situation.

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Set Page Margins.....214
Set Control Margins and Padding 215
Format Report Text 216
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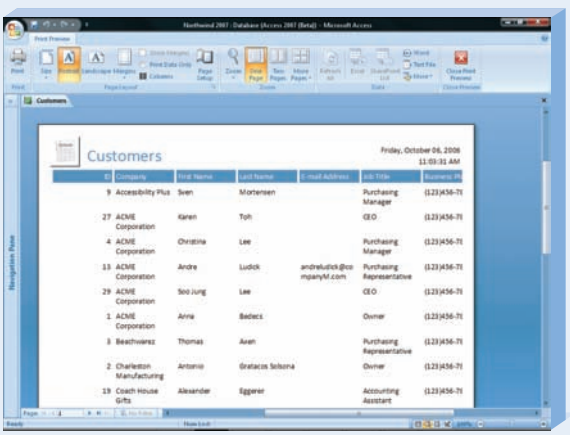
Understanding Report Views

You have several choices of views for working with reports. Each has a specific function for which it is best suited. Two of these views — Report view and Layout view — are brand new in Access 2007.



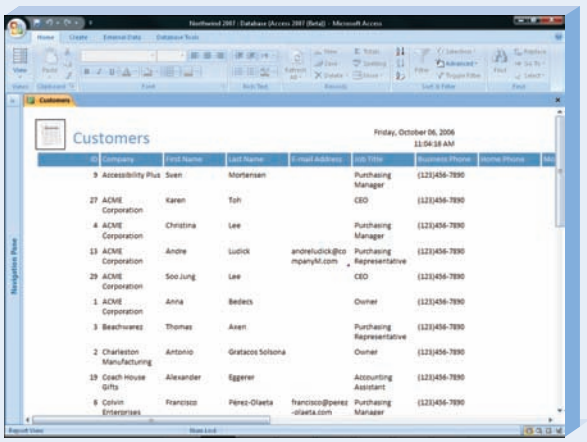
Print Preview

Print Preview shows the report exactly as it will be printed. It shows page margins by simulating the edges of the paper onscreen. If the report is too wide to fit on the paper, it is truncated where the page break would truncate it. You cannot edit the report in Print Preview.



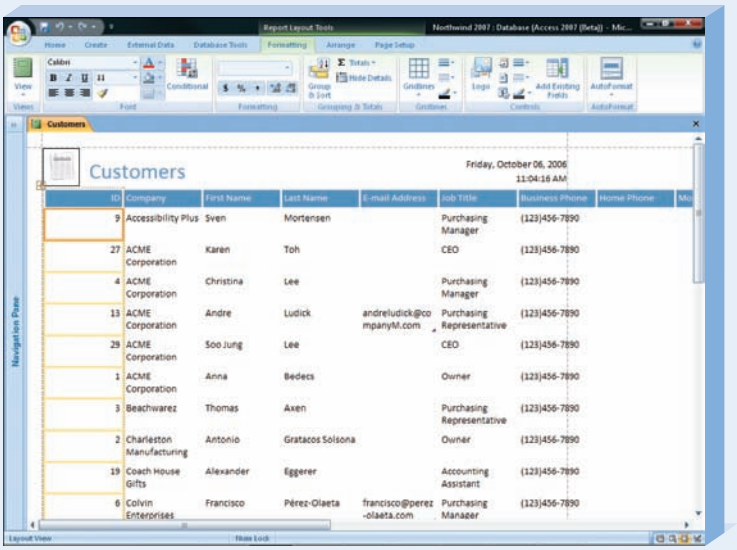
Report View

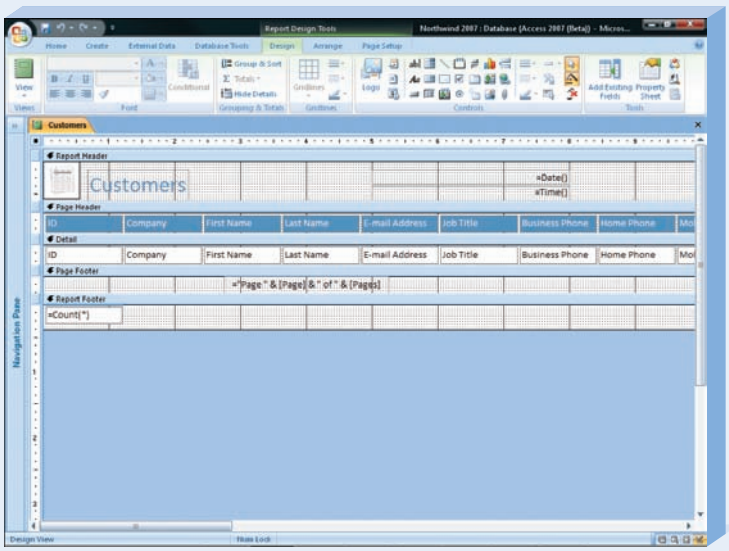
Report view shows the report approximately as it will be printed, but it does not simulate the edges of the paper onscreen, so you cannot see the actual margins that will be used. Even if the report is too wide to fit on the paper, it still appears onscreen as one whole. You cannot edit the report in Report view.



Layout View

Layout view enables you to configure the overall formatting and layout of the report, but not to change individual elements such as individual text boxes. You can add grouping and sorting levels, totals, and other information, and apply AutoFormat styles.





Design View

Design view is where you can fine-tune the fields and labels to be included on the report. Only in this view can you add and remove fields and add nonfield controls such as labels.

The report in Design view often bears little layout resemblance to the finished product. For example, compare the Design view shown here with the Layout view shown above; the Layout view shows how the fields will appear, reasonably close to the actual printout — as shown in Print Preview. Design view, on the other hand, shows items according to section and does not always place everything where it will actually be. As you are learning to use Design view, it is often best to begin the report using the Report Wizard or another automated method to get help setting up the fields.

Create a Simple Report

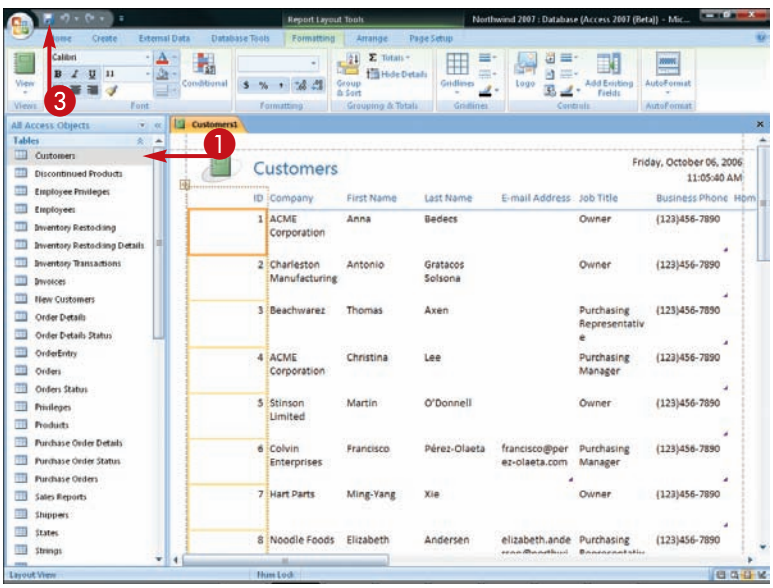
Rather than print a form or datasheet, you may prefer to generate a report. By using the default settings, you can create a report very quickly. You can then save the report for later reuse if needed or simply re-create it again the next time that you need it.



Create a Simple Report

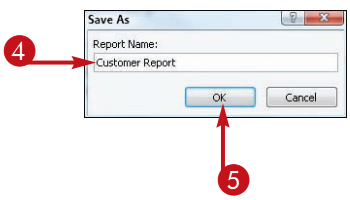
1. Click the table or query in the Objects list.
2. On the Create tab, click **Report**.

   The report appears in Layout view.
3. To save the report, click .



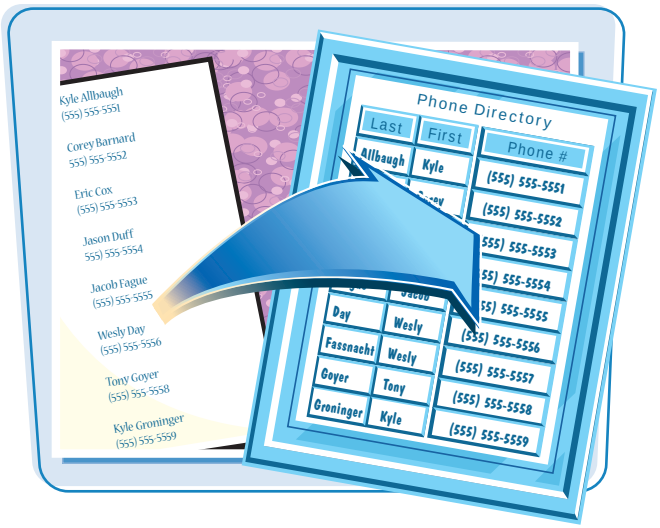
   The Save As dialog box opens.
4. Type a name for the report.
5. Click **OK**.

   The report is saved.



AutoFormat a Report

AutoFormat works the same for reports as for forms; see Chapter 10. You can use AutoFormat to quickly apply a consistent formatting theme to a form so that it matches other forms or matches a company specification.



AutoFormat a Report

1. In Layout view on the Formatting tab, click **AutoFormat**.

Note: *You can also do this from Design view, and click* ***AutoFormat*** *on the Arrange tab.*

A gallery of AutoFormat presets appears.

2. Click the preset that you want.

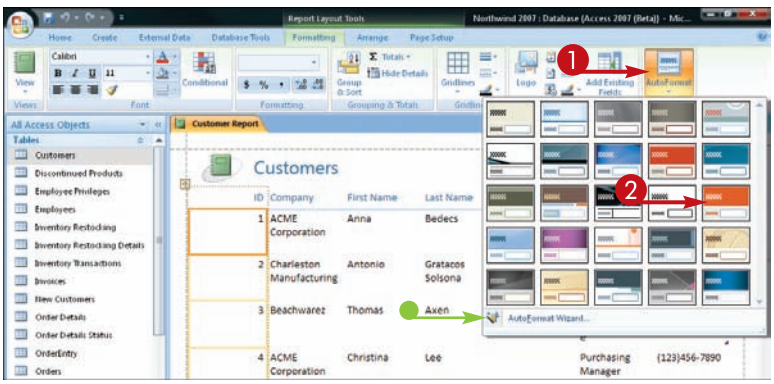
- You can also click **AutoFormat Wizard** and apply an AutoFormat style.

If you click **AutoFormat Wizard**, the AutoFormat dialog box opens.

3. Click the style that you want.
4. Click **OK**.

The AutoFormat setting is applied.

Note: *You can also create your own AutoFormat style, as shown in Chapter 10.*





Preview and Print a Report

After creating a report, you will probably want to print it. You can check the report first in Print Preview to make sure that it is the way you want it, or you can print it directly from any other view.

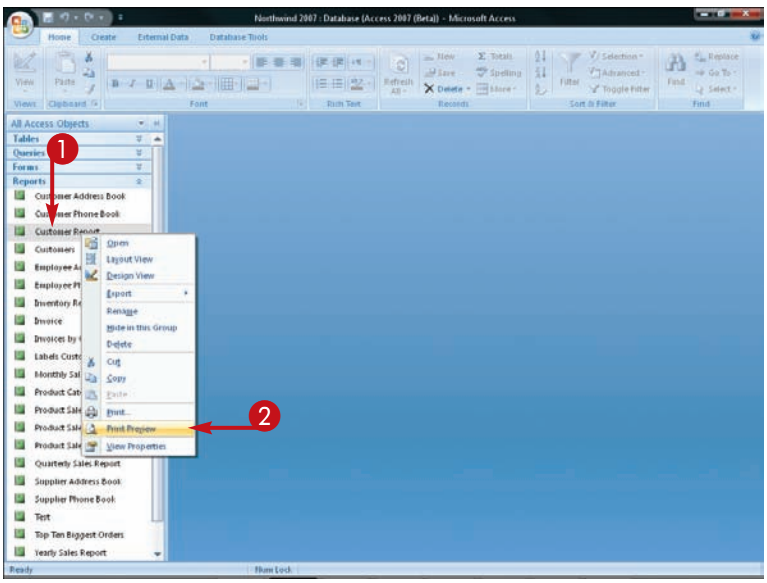


Preview and Print a Report

OPEN A REPORT IN PRINT PREVIEW

1. If the report is not open already, in the Objects pane, right-click the report.
2. Click **Print Preview**.

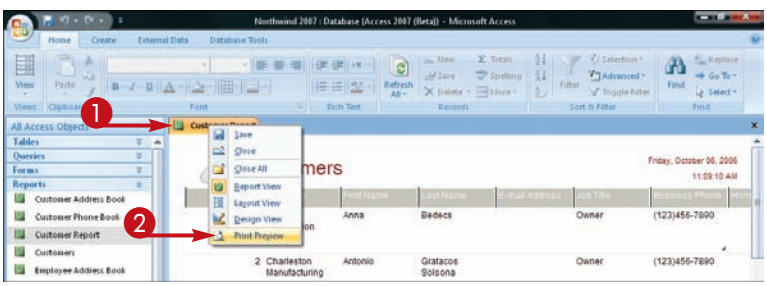
   The report appears in Print Preview.



SWITCH AN OPEN REPORT TO PRINT PREVIEW

1. Right-click the report's tab.
2. Click **Print Preview**.

   The report appears in Print Preview.



PRINT A REPORT FROM PRINT PREVIEW

1. On the Print Preview tab, click **Print**.

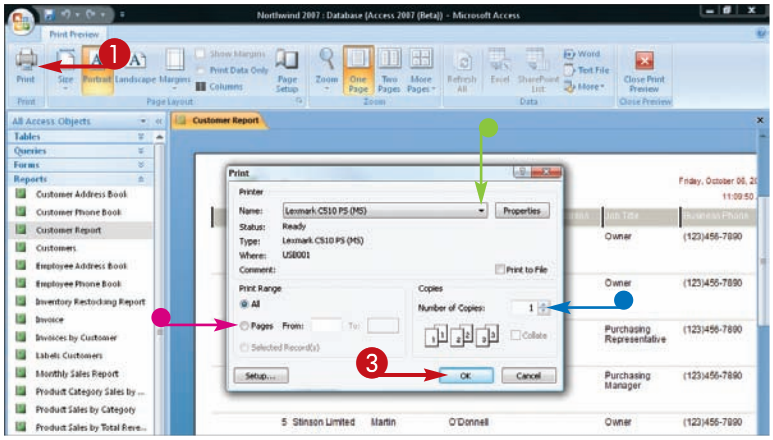
   The Print dialog box opens.

2. Change any print settings, if necessary:

   - Click here and choose a different printer.
   - Click here and set a page range (changes to).
   - Click here and set a number of copies.

3. Click **OK**.

   The report is printed.



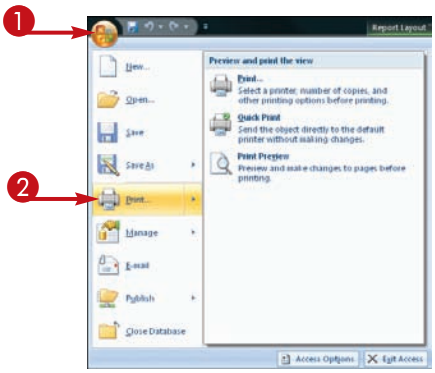
PRINT A REPORT FROM OTHER VIEWS

1. Click .
2. Click **Print**.

   The Print dialog box opens.

3. Perform the preceding steps **2** to **3**.

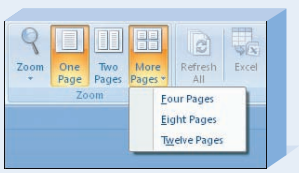
   One copy of the entire report is printed on the default printer.



TIPS

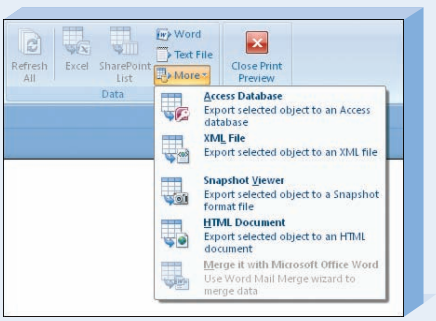
How can I see more of the report at once?

The Preview group on the Print Preview tab contains buttons for One Page, Two Pages, and More Pages. If you click **More Pages**, you can choose a 4-, 8-, or 12-page display.

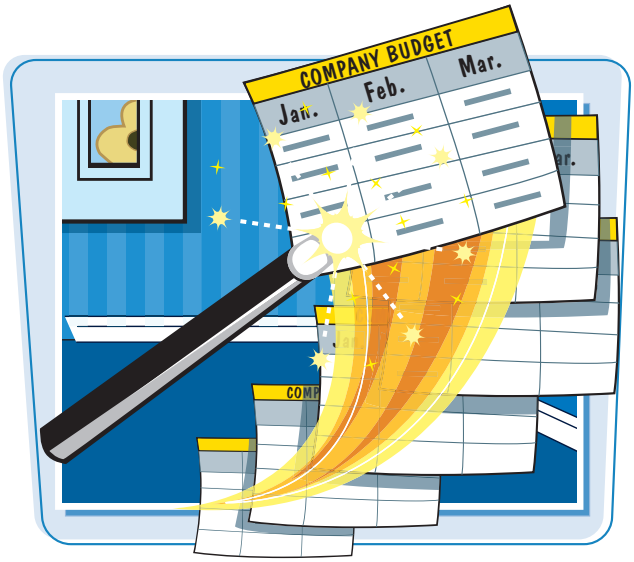


How can I export the report?

The Data group on the Print Preview tab contains buttons for exporting to Microsoft Word (in rich text format), to a text file, to an Excel file, and to several other formats.



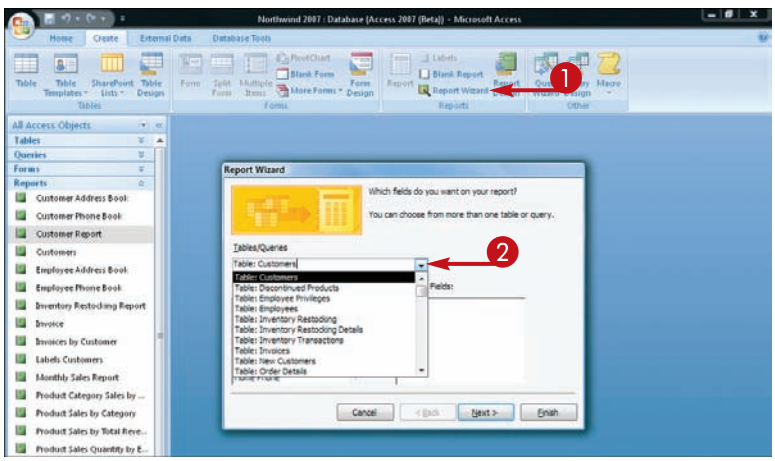
Create a Report with the Report Wizard



You can use the Report Wizard to create a report without having to manually design it, while still having some options in its layout and formatting.

After creating a report this way, you can then optionally edit it in Report Design view to fine-tune its appearance.

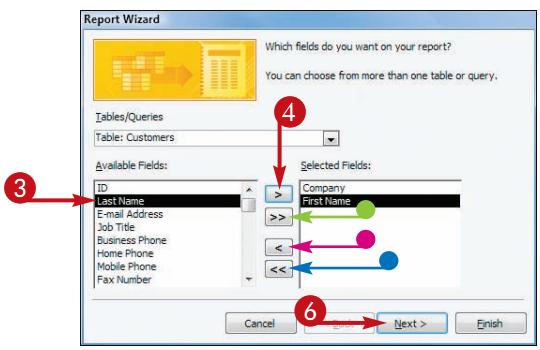
Create a Report with the Report Wizard



1. On the Create tab, click **Report Wizard**.

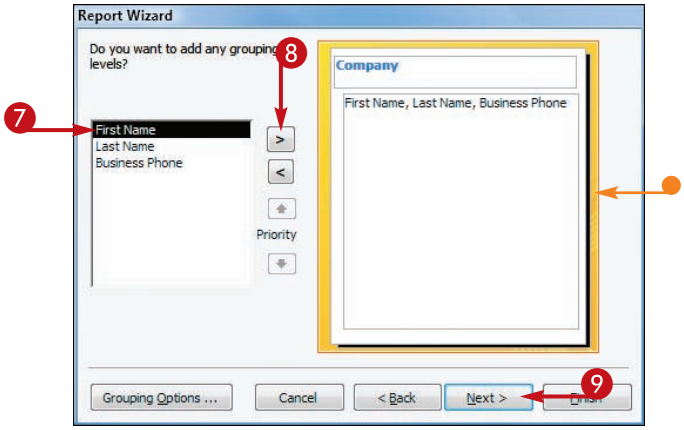
   The Report Wizard dialog box opens.

2. Click here and click the table or query on which to base the report.

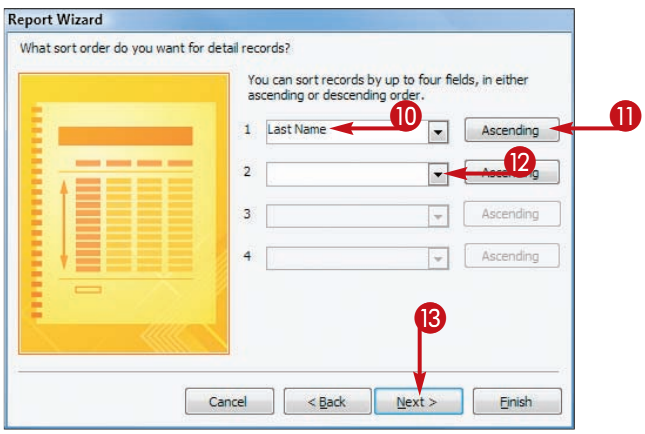


3. Click a field.
4. Click here to move the field to the Selected Fields list.
5. Repeat steps **3** to **4** for all the fields that you want to include.
   - Click here to add all the fields at once.
   - Click here to remove a field.
   - Click here to clear the Selected Fields list.
6. Click **Next**.

7. You can click a field by which to group.
8. Click here to group by the chosen field if you chose one in step **7**.
   - The sample changes to show grouping by that field.
9. Click **Next**.



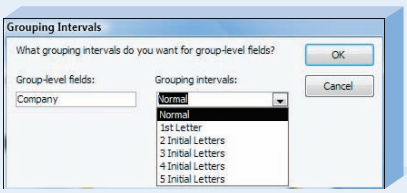
10. You can click here and select a field by which to sort.
11. You can click here to switch between an Ascending and a Descending sort.
12. You can define additional sort levels, if needed.
13. Click **Next**.



TIPS

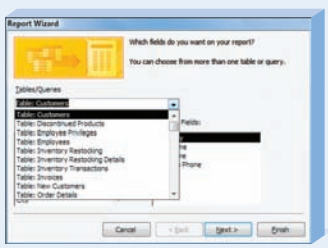
How can I group by something other than unique values?

You can click **Grouping Options** after step **8** in this section to access a Grouping Intervals dialog box. From there, you can define a grouping interval. For text, you can group by the first letters of the entry. For numeric values, you can group by numbers (such as 10s or 100s).



Can I have fields from more than one table or query in the same report?

Yes, just repeat step **2** in this section to select another table or query. As long as the tables or queries are related in some way, Access will pull data from them, just as it does when you create a query.



continued

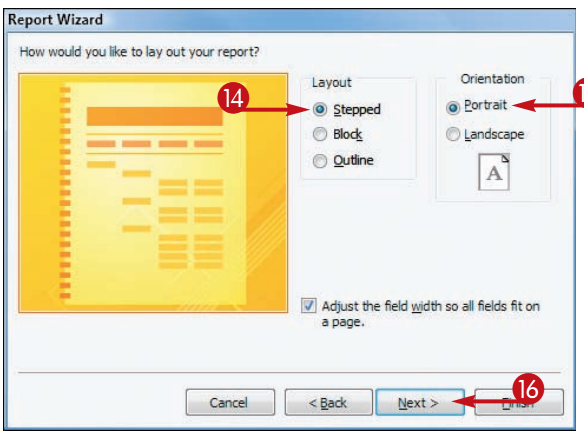
Create a Report with the Report Wizard *(continued)*

The Report Wizard not only lets you specify what fields and grouping you want, but also the report layout, orientation, and formatting. You can later fine-tune this formatting in Design view if needed.

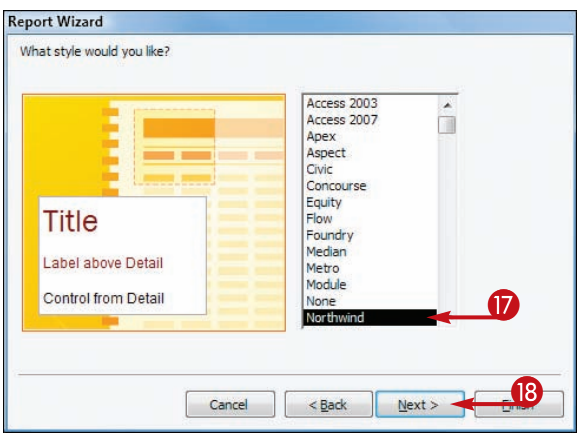


Create a Report with the Report Wizard *(continued)*

14. Click the layout to use (◎ changes to ◉).
15. Click the page orientation that you want (◎ changes to ◉).
16. Click **Next**.



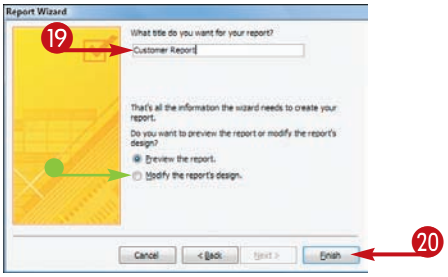
17. Click a style for the report.
18. Click **Next**.



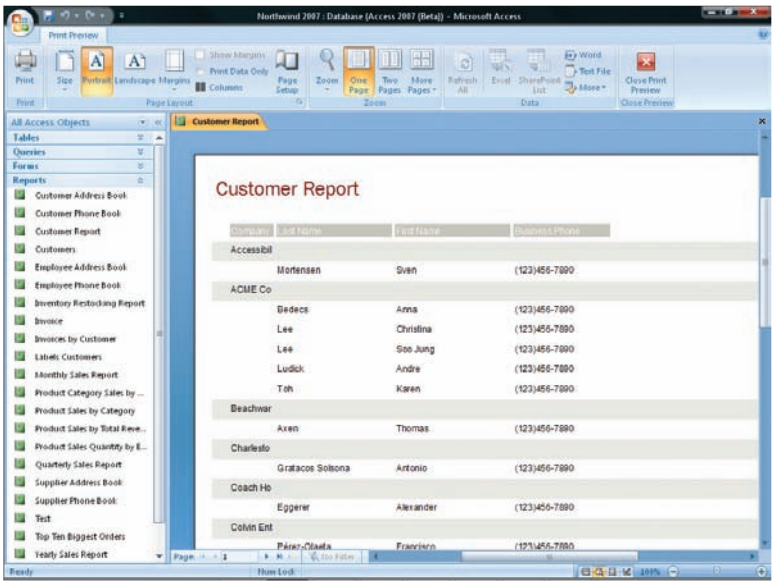
19 Click here and type a name for the report, replacing the generic name that appears.

- If you want to edit the report in Design view, click here (changes to).

20 Click **Finish**.



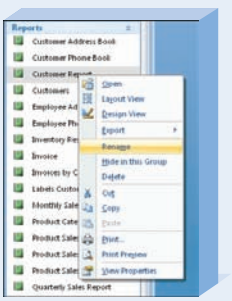
The report appears in Print Preview.



TIPS

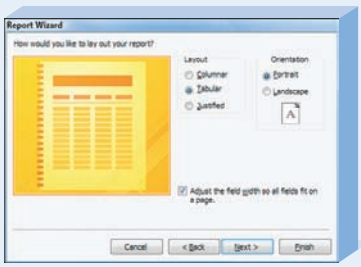
How can I change the name of a report after creating it with the Report Wizard?

First, close the report. Then from the Objects list, right-click it and click **Rename**. Then type a new name and press Enter.



How can I make the report extend to multiple pages horizontally if the fields do not fit on a single page width?

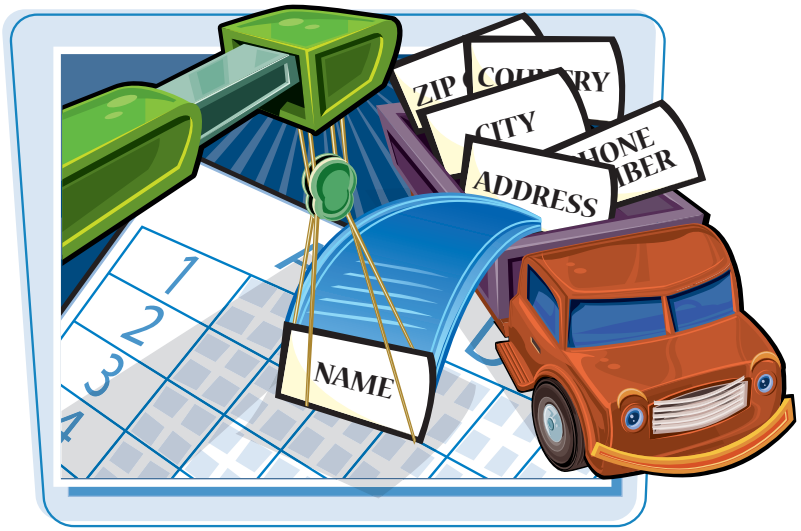
Before step **16**, clear the **Adjust the field width so all fields fit on a page** check box. The report will then expand horizontally to fill as many pages as needed so that all the fields are at their original sizes.



Create a Report in Layout View

You can design your own reports from scratch using either Layout view or Design view. However, Layout view is much easier because it is closer to how the report will actually appear.

Because you can switch between views freely, you can do the initial layout in Layout view and then fine-tune it in Design view.



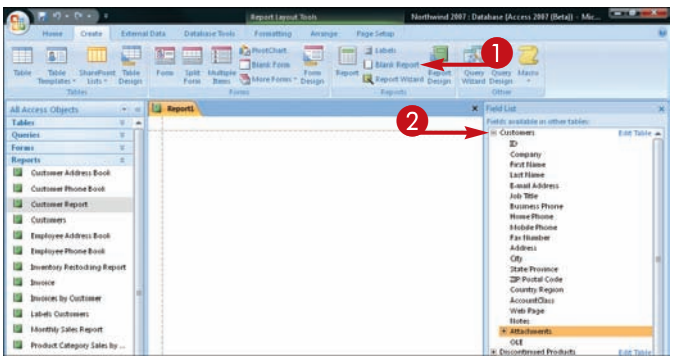
Create a Report in Layout View

1. On the Create tab, click **Blank Report**.

   A blank report window appears in Layout view.

2. In the Field List, click + next to the table or query from which to pull fields.

Note: *If the Field List does not appear, click* ***Add Existing Fields*** *on the Formatting tab to display it.*

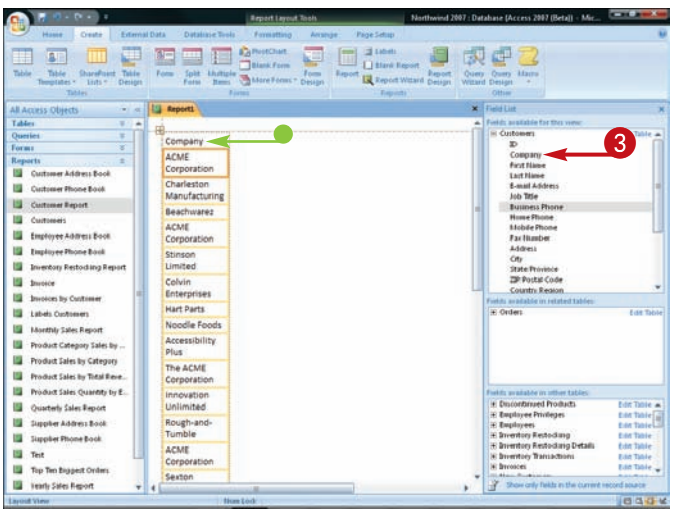


3. Drag a field on to the report.

- The field name appears at the top, and records from the table appear beneath it.

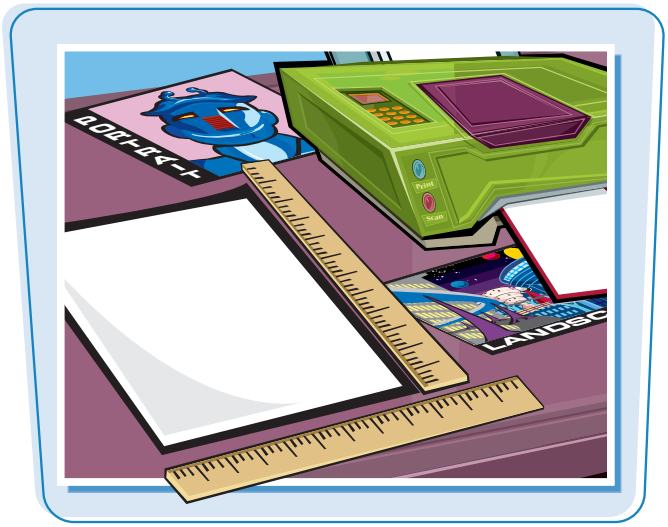
4. Repeat step **3** to add other fields to the report as needed.

Note: *You can drag fields to the right or left to rearrange them.*



Set the Page Size and Orientation

The default page size for a report is the Letter size, which is 8.5" x 11". You can set the page size to any size you like, as well as switch between portrait and landscape orientation.

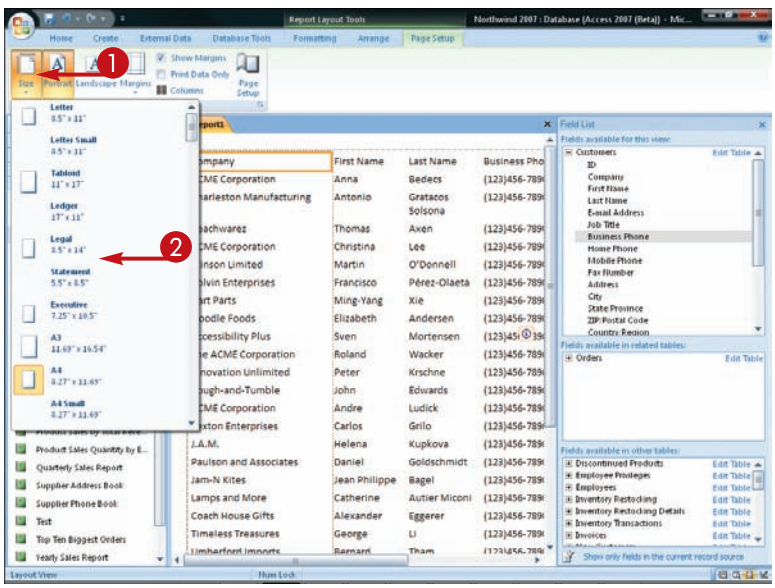


Set the Page Size and Orientation

SET THE PAGE SIZE

1. In Design or Layout view on the Page Setup tab, click **Size**.
2. Click a paper size.

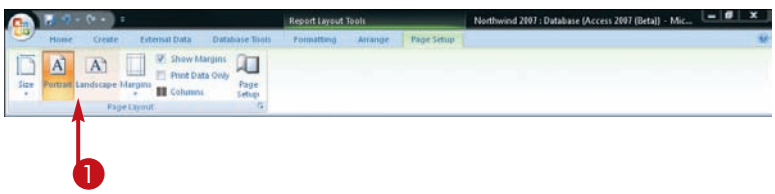
   The page is resized.



SET THE PAGE ORIENTATION

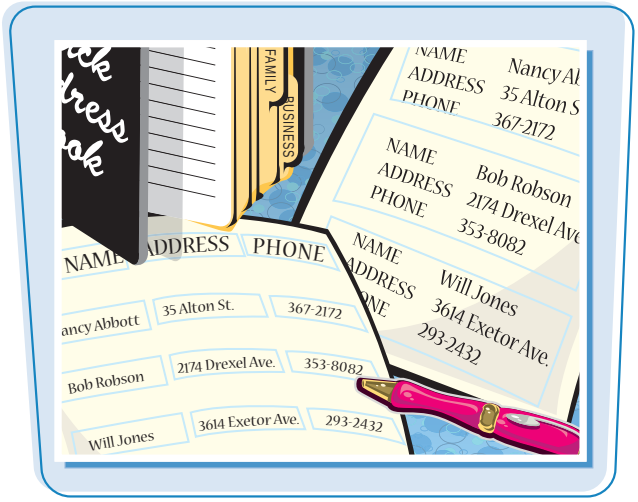
1. In Design or Layout view on the Page Setup tab, click **Portrait** or **Landscape**.

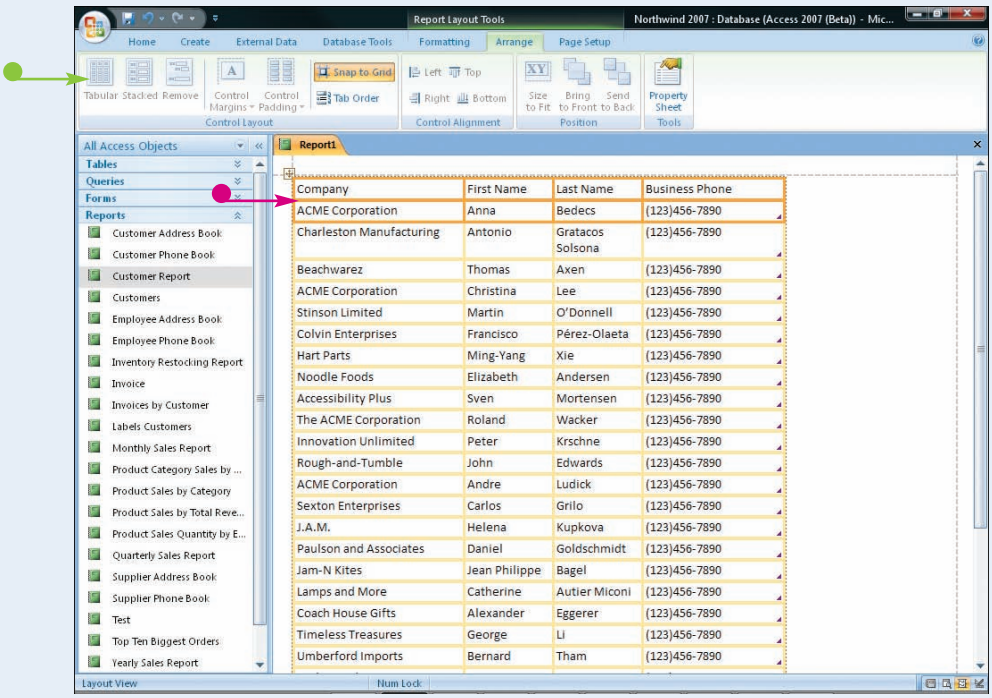
   The page orientation changes to the setting that you chose.



Change the Report Layout Type

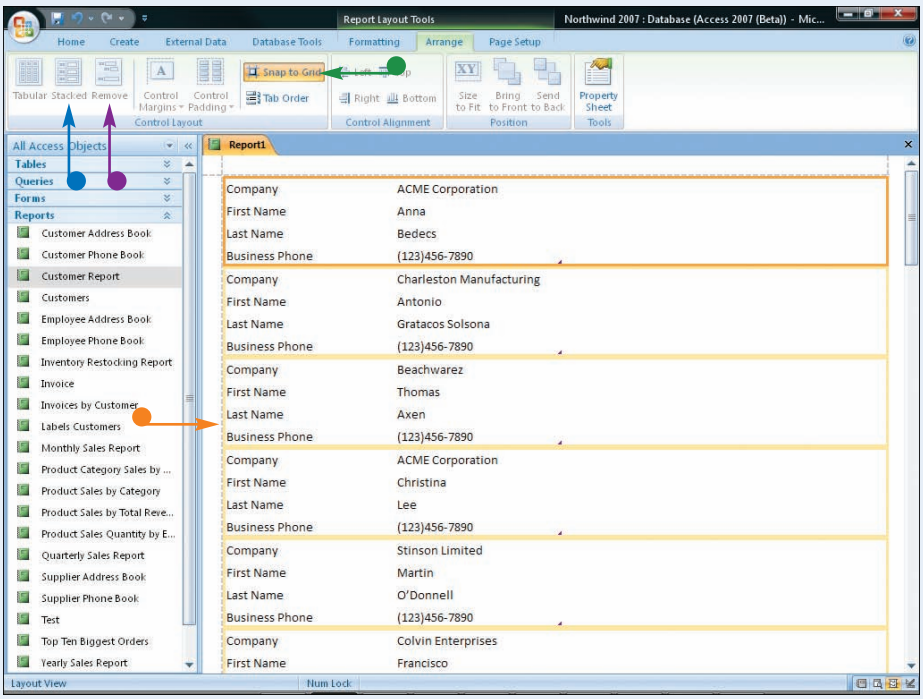
You can choose to make a report either tabular or stacked. A tabular report resembles a table (a datasheet), with records in rows and fields in columns. A stacked report shows each record in a separate self-contained section.





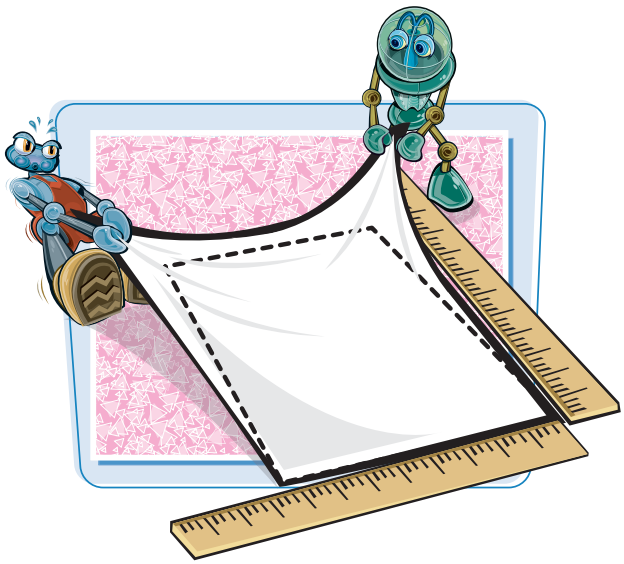
- The default type of report created in Layout view is Tabular.
- Tabular layout places each field name across the top row with the individual records beneath.

- Click here to change to a Stacked layout.
- A Stacked layout places each record in its own area, one on top of the other, with all its fields in one place.
- The Remove option frees selected fields from the layout, so you can drag them freely around on the page. Click a field and then click **Remove** to do this.
- To further free up fields so that they can be precisely positioned, click here to deselect **Snap to Grid**.



Set Page Margins

You can set page margins for your report; these refer to the overall white space around the outside of the report on the printed page.



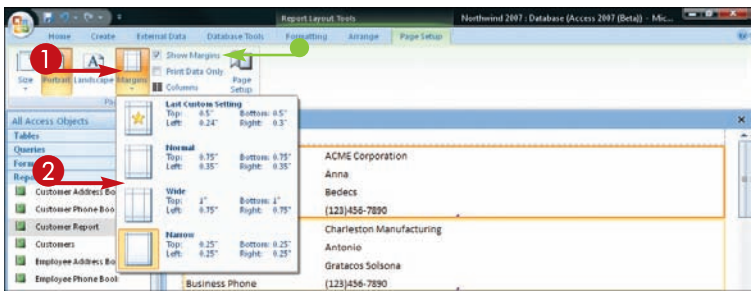
Set Page Margins

USE A PAGE MARGIN DEFAULT

1. In Design or Layout view on the Page Setup tab, click **Margins**.
2. Click a margin setting.

   The margin setting is applied.

- By default, margins appear onscreen in Print Preview. If you do not want this, clear the **Show Margins** check box.

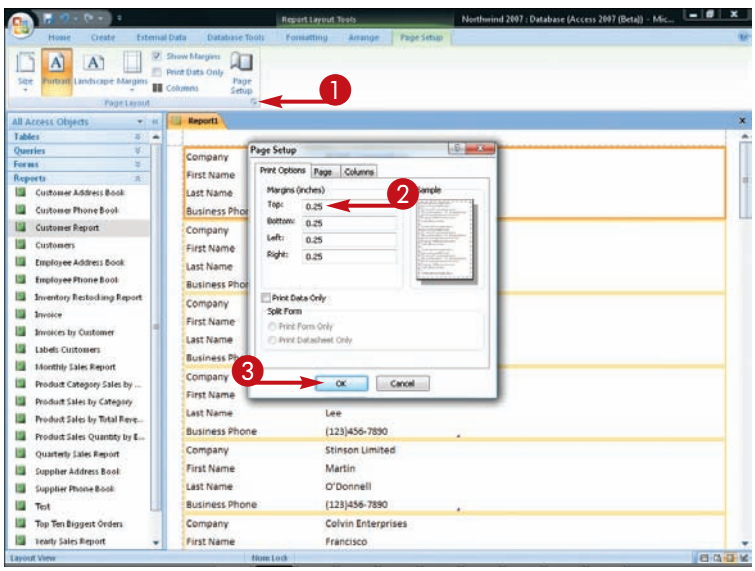


SET CUSTOM PAGE MARGINS

1. On the Page Setup tab, click the dialog box launcher.

   The Page Setup dialog box opens.
2. Click a text box and type a margin setting for that side of the page.
3. Click **OK**.

   The margin setting is applied.



Set Control Margins and Padding

You can also set margins for the individual controls on the form. The margin controls for individual items are for the text within the text boxes or label frames.

You can also set an amount of padding for one or more controls. Padding is like margins, but it refers to the space between fields – that is, the extra white space on the *outside* of a text box or other control.



Set Control Margins and Padding

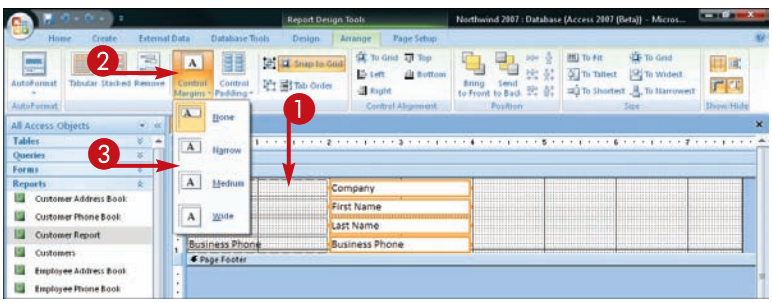
SET CONTROL MARGINS

1. In Design view, select the controls to affect.

Note: *Hold down the* Shift *key and click multiple controls to select them or drag a lasso around them.*

2. On the Arrange tab, click **Control Margins**.
3. Click the setting that you want.

   The control margin setting is applied.



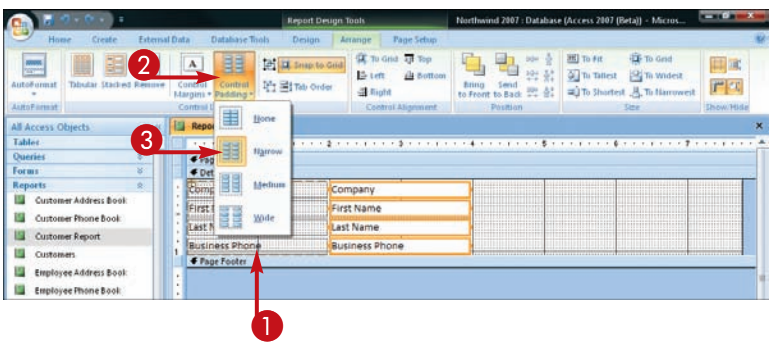
SET THE CONTROL PADDING

1. In Design view, select the controls to affect.

Note: *Hold down the* Shift *key and click multiple controls to select them.*

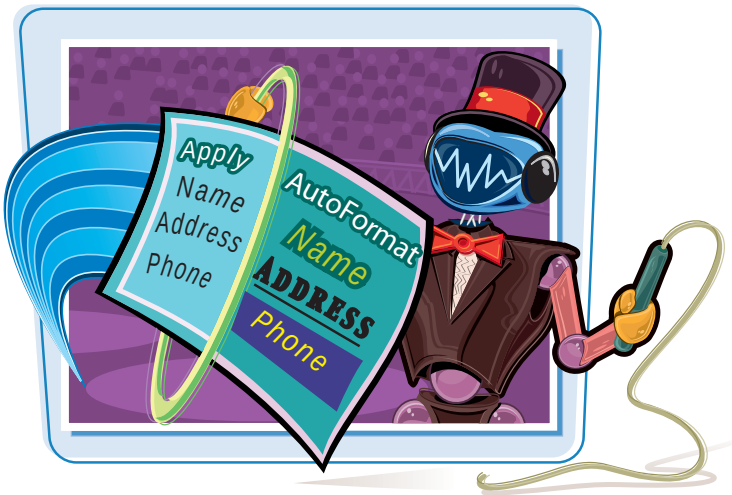
2. On the Arrange tab, click **Control Padding**.
3. Click the setting that you want.

   The control padding setting is applied.



Format Report Text

When you apply AutoFormatting to a report, the font formatting is applied automatically. You can modify this formatting, selecting specific fonts, sizes, colors, and text attributes as needed.



As with forms, font formatting on reports applies to entire boxes only, not to individual characters. Therefore, if you want characters formatted differently from others, they must be in separate controls or labels.

Format Report Text

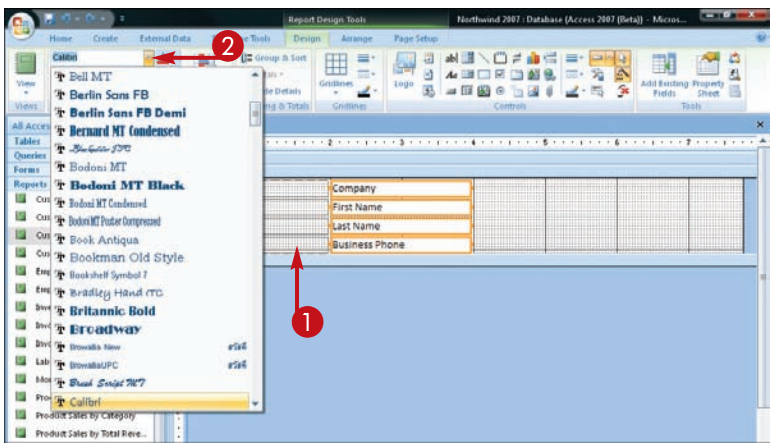
SET THE FONT

1. In Design view, click the label or field to be formatted.

   To select more than one, hold down Shift as you click them.

2. On the Design tab, click here and click the font that you want.

   The font is applied.

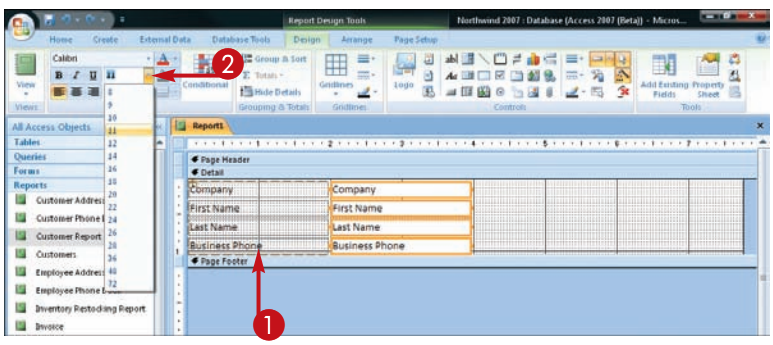


SET THE FONT SIZE

1. Click the label or field to be formatted.
2. On the Design tab, click here and click the font size.

Note: *If you choose a larger size, the text may appear truncated. Enlarge its box if needed, moving other boxes to make room.*

Note: *To automatically resize a box to accommodate its entry, double-click a selection handle in the direction to expand. For example, to expand to the right, double-click the right selection handle.*



SET THE FONT ATTRIBUTES

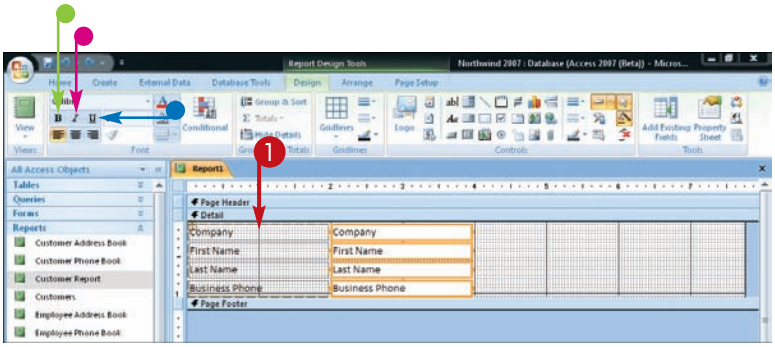
1. Click the label or field to be formatted.

   To select more than one, hold down Shift as you click them.

2. On the Design tab, click the button for the attributes that you want:

   - Bold
   - Italic
   - Underline

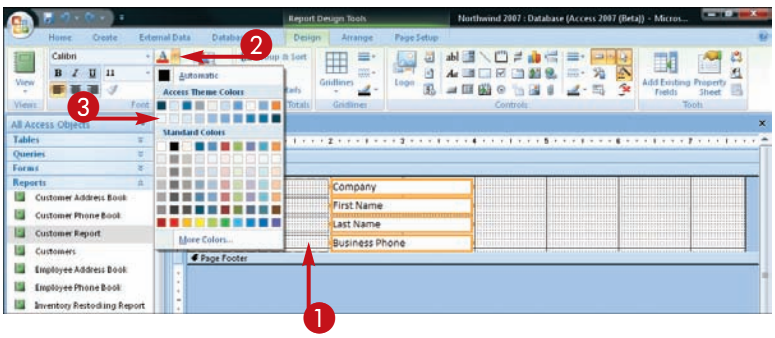
   The font attributes are applied.



SET THE FONT COLOR

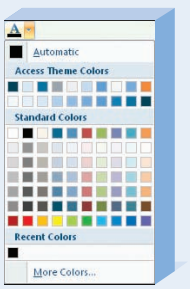
1. Click the label or field to be formatted.
2. On the Design tab, click here to open the Font Color palette.
3. Click the color that you want.

   The color is applied.



TIPS

What is the difference in the color sections of the Font Color palette?

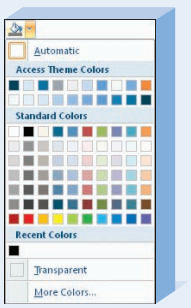


Access Theme Colors refers to the color themes you can apply throughout Office applications in Office 2007. These colors shift when you apply a different theme.

Standard Colors are fixed colors that do not change with the color theme.

Recent Colors are colors you have already applied in this database. Using one of these ensures consistency across objects.

What does the Fill Color button do?



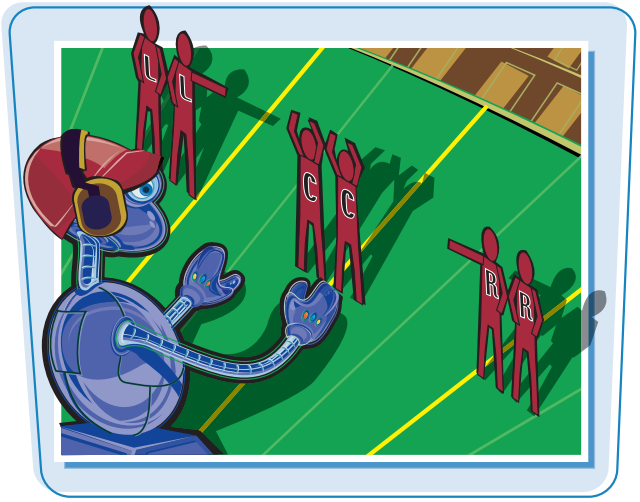
The Fill Color button applies background fill to controls. You may want to use a colored background for certain labels, for example. If you use a dark fill color, remember to set the text color to white (or a light color).

Size and Align Report Fields

As you design your report, you may need to adjust the sizing and alignment of the fields and their labels.

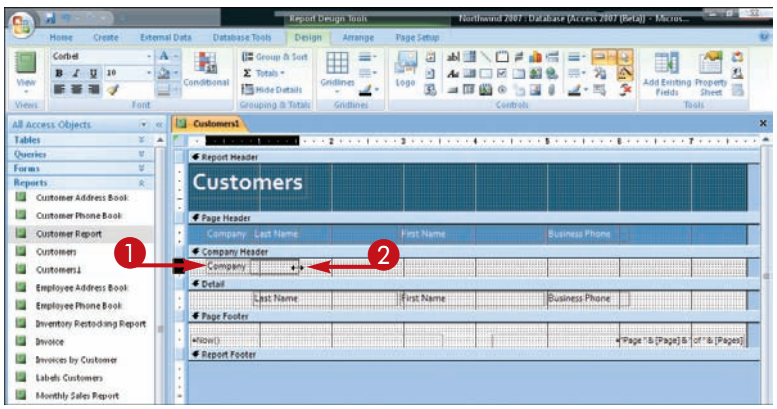
When more than one control is selected, you can align the fields to one another so that they appear neatly arranged.

In Design view, when you change the width of a field, its label width also changes automatically, and fields to its right shift automatically to make room or to tighten up the space.



Size and Align Report Fields

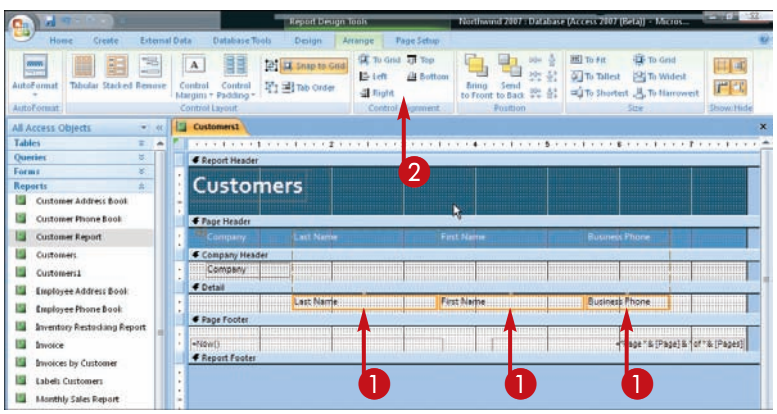
SIZE A FIELD



1. In Design view, click the label or field to be sized.
2. Position the mouse pointer over the right edge of the control and drag to the right or left.

   The field is resized, and any fields to its right are moved.

ALIGN FIELDS WITH ONE ANOTHER



1. In Design view, select the controls to be aligned.

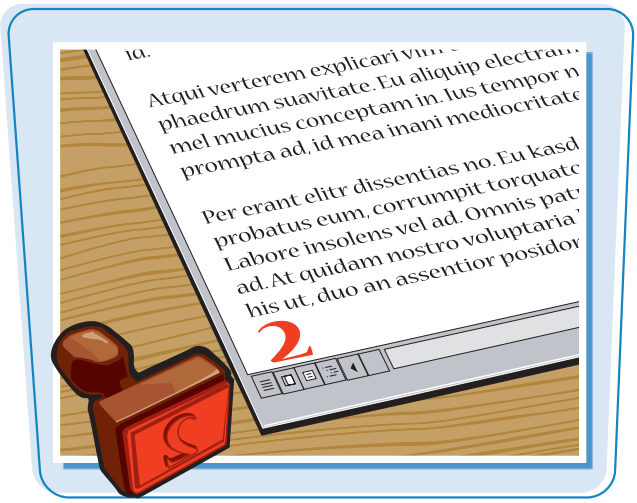
Note: *Hold down* Shift *as you click each one.*

2. On the Arrange tab, click the button for the alignment that you want.

   For example, to top-align some fields that are adjacent in the Detail section, you may click **Top**.

Insert a Page Numbering Code

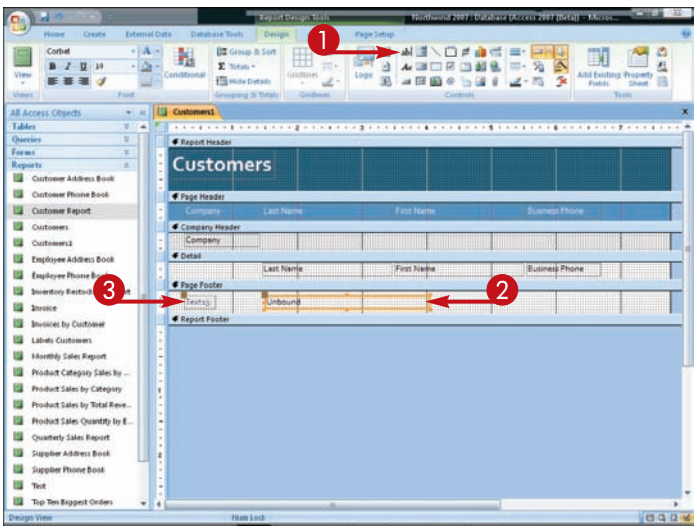
Because reports are designed to be printed, they should include page numbering codes. Reports generated via the Report Wizard or other quick methods contain a page numbering function in the Page Footer section. In reports you generate from blanks, you must insert your own page numbering codes.



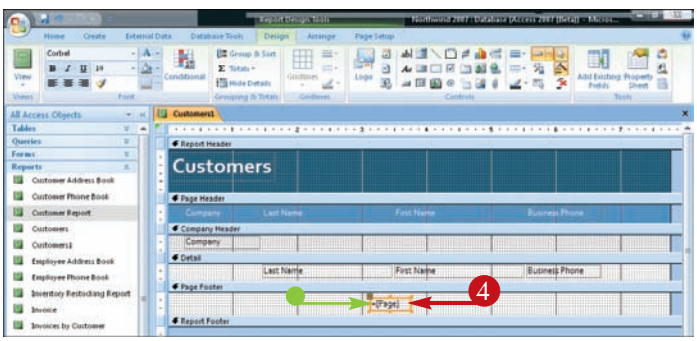
Insert a Page Numbering Code

Note: *These steps are for forms that do not already contain page numbering.*

1. In Design view on the Design tab, click the Text Box button.
2. Draw a text box in the page footer area.
3. Select the label for the new text box and press Delete.



4. Click in the text box and type **=[Page]**.
5. Move and size the text box as needed.
   - For example, if the page number should be centered at the bottom of each page, center the field in the Page Footer area.



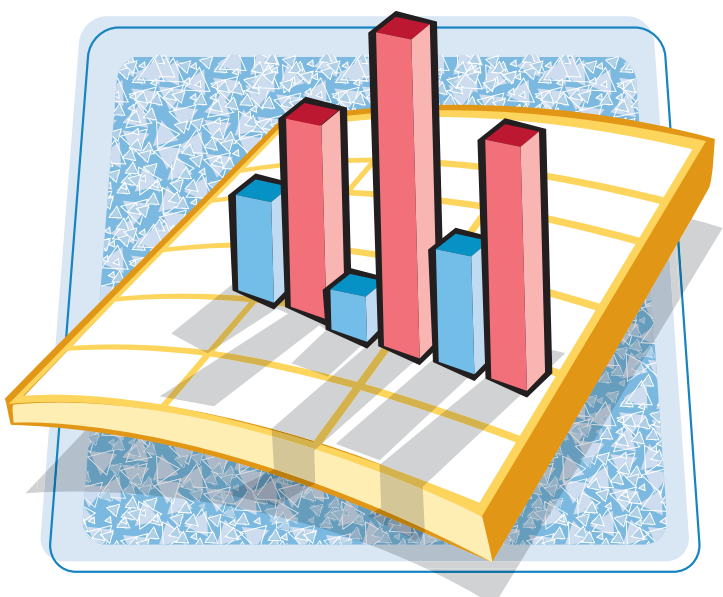
Note: ***=[Page]*** *shows the current page number, and* ***=[Pages]*** *shows the total number of pages.*

Note: *To concatenate text strings with fields, put the text in quotation marks and use & to combine strings — for example,* ***="Page "&[Page]&" of "&[Pages]****.*

CHAPTER

12

Grouping and Summarizing Data

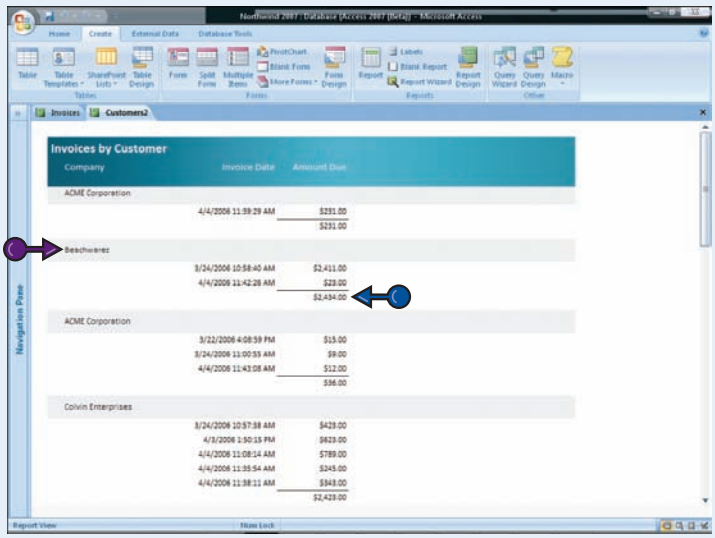


The reports you learned about in Chapter 11 provide a complete listing of the records in the data set. In this chapter, you will learn how to create reports that group and summarize data, distilling down a large amount of data into a manageable, meaningful report.

Understanding Grouping and Summarizing 222
Group Report Results 224
Sort Report Results 226
Count Records 227
Add an Aggregate Function 228
Summarize a Datasheet with a PivotTable 230
Add Aggregate Functions to a PivotTable 234
Group and Ungroup PivotTable Content 235
Clear a PivotTable Grid 236
Switch a PivotTable to a PivotChart 237

Understanding Grouping and Summarizing

When you have a lot of data, it can be difficult to discern the overall meaning of it. Access provides several ways of grouping and summarizing data to make this easier.

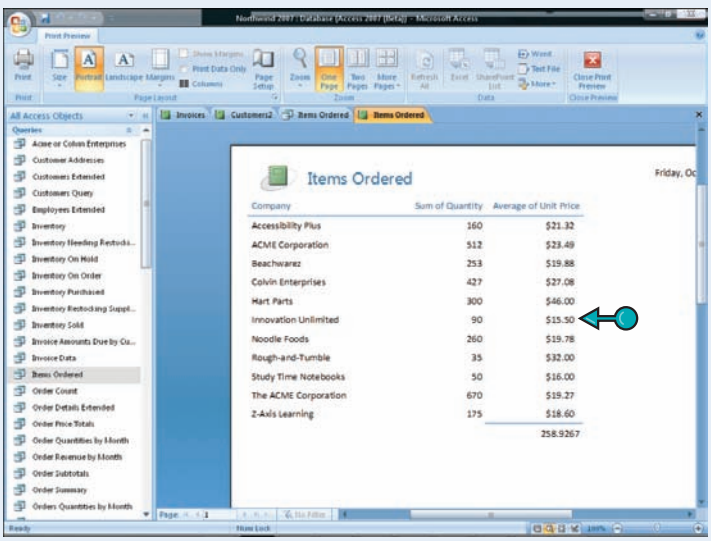


Grouping

You can group a report by a field, such as by Company here. Each company has its own section of the report.

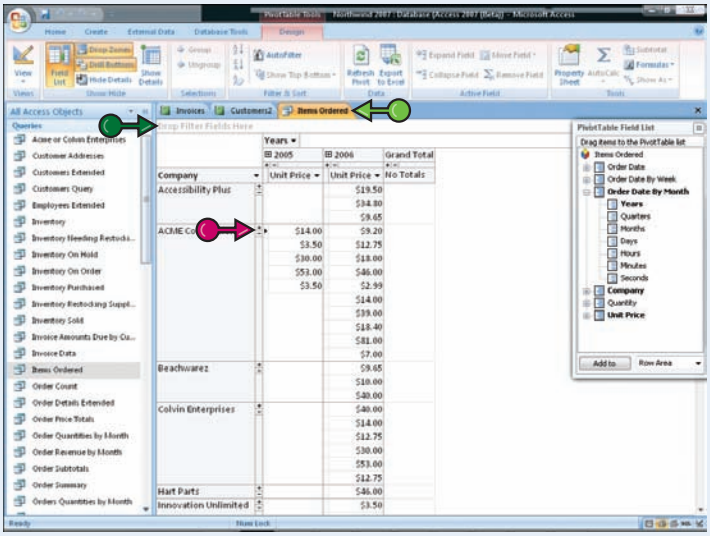
Aggregate functions

You can summarize each group with one or more aggregate functions, such as Sum (shown here), Average, or Count.



Reports based on summary queries

As you learned in Chapter 8, you can create summary queries that distill table data into aggregate functions. You can then create reports based on one of those queries.



PivotTables

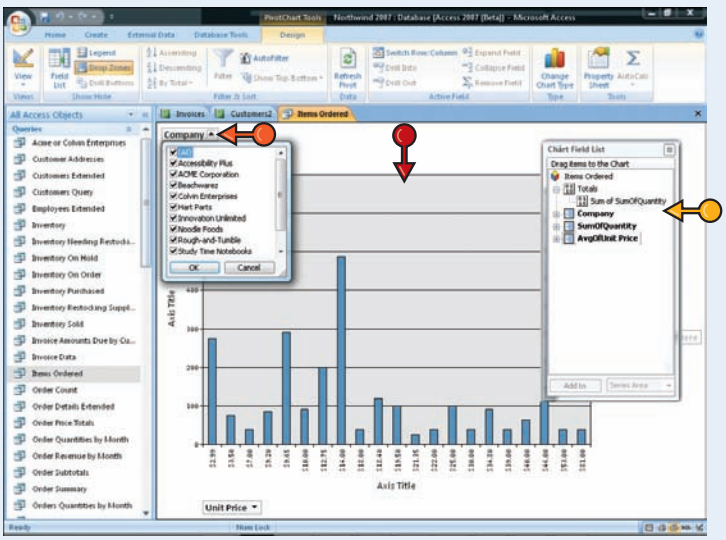
When you want to summarize data without creating a report or query, a PivotTable works well. A PivotTable is a view of a table or query.

Drop in fields

A PivotTable starts out as a blank grid. You drag fields in to it to create it.

Collapse for summary

You can click the + or - buttons to expand or collapse a group to show a summary.



PivotChart

A PivotChart is like a PivotTable except it displays the data graphically.

Drag fields

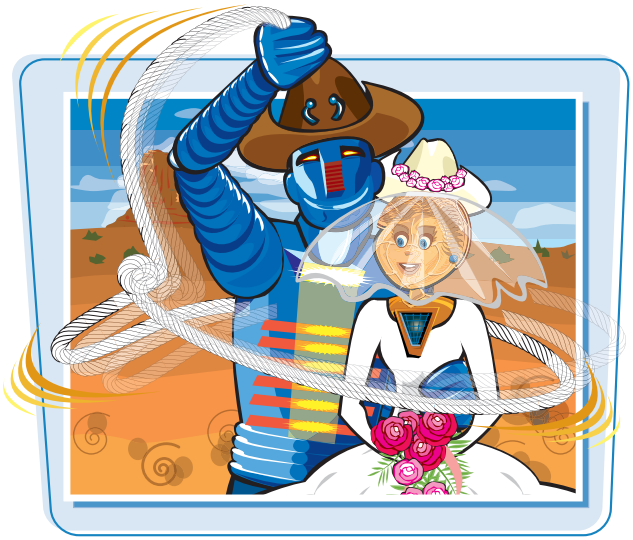
Just like with a PivotTable, you drag fields onto the grid to create the chart.

Filter

You can filter any of the fields to show only certain values. (You can do this with a PivotTable as well.)

Group Report Results

If you use the Report Wizard to create a report as shown in Chapter 11, you have the opportunity to specify grouping in the wizard.



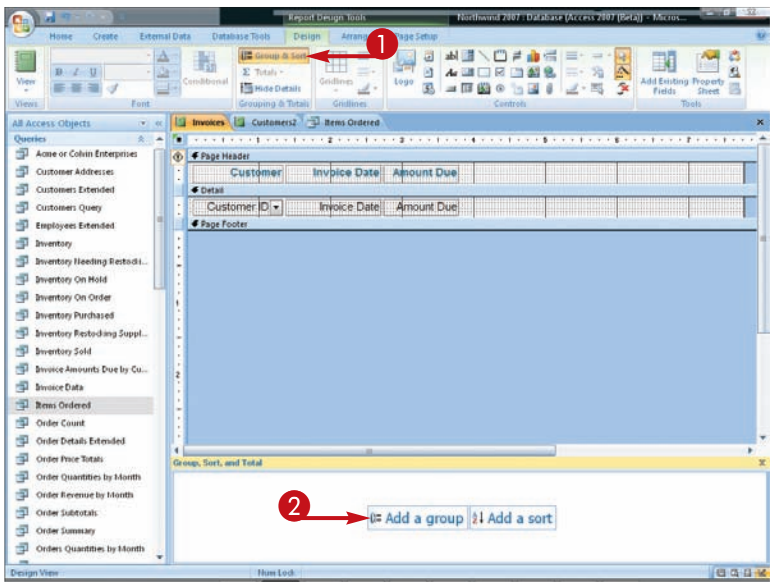
You can also set up grouping from Report Design view afterwards or change the grouping.

Group Report Results

1. In Report Design view, click **Group & Sort**.

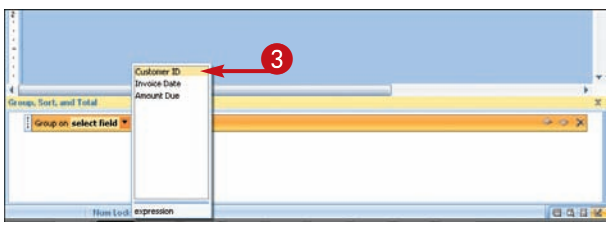
   The Group, Sort, and Total pane appears.

2. Click **Add a group**.



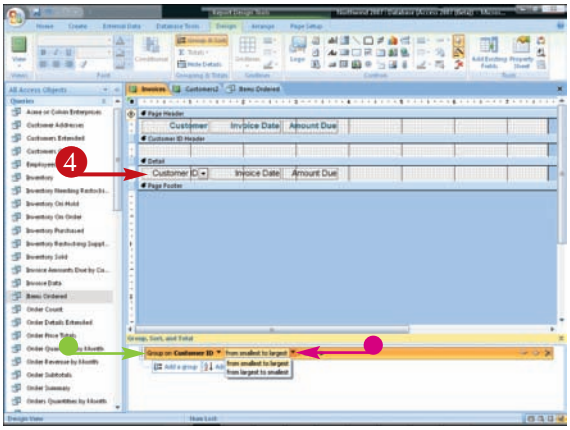
   A pop-up list appears of the fields available to be grouped by.

3. Click the field by which to group.



- A Group On line appears.
- You can click here and click a different sort order.

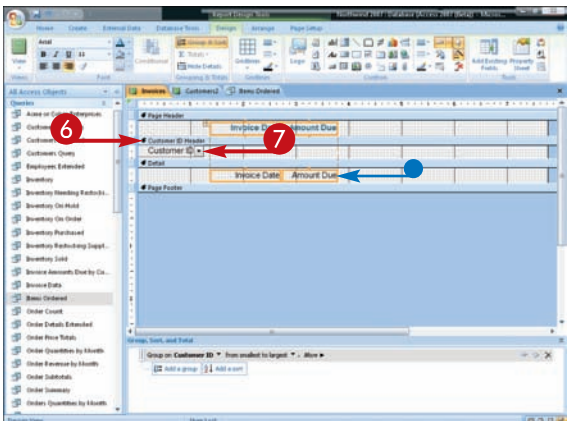
4. Click the field on which you have grouped.
5. Press Ctrl + X to cut it to the Clipboard.



6. Click the header for the field on which you have grouped.
7. Press Ctrl + V to paste the field into that header section.

- You can drag the remaining fields in the Detail section to the right.

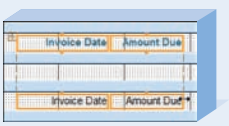
***Note:** Moving them to the right makes the group header stand out more.*





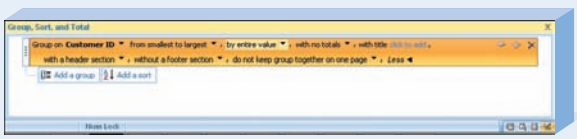
I followed the steps in this section, but I could not get the fields to drag after step 7.

If the fields will not drag, try resizing them to move them. Position the mouse pointer at the right edge of the right field and drag to the right, moving its right edge. Then position the mouse pointer at the left edge of that field and drag to the right, moving its left edge.



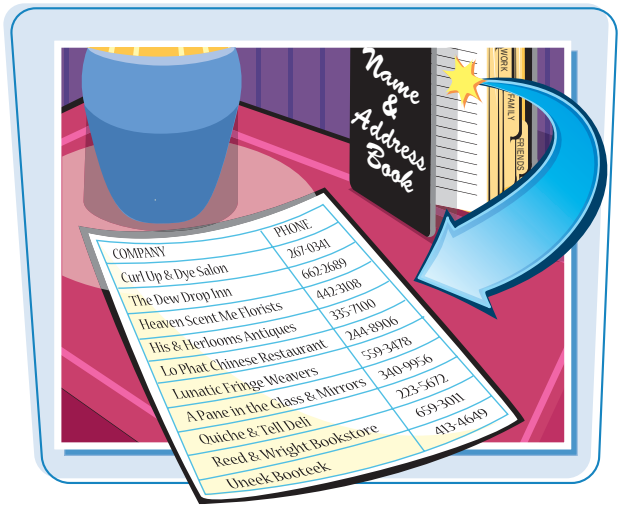
How can I set grouping options?

Click **More** on the group's bar in the Group, Sort, and Total area. Additional drop-down lists appear for setting options. For example, you can choose grouping intervals, choose to have a group header only or footer only, or choose to keep a group together on one page or not.



Sort Report Results

You can sort the results in a report, with or without grouping. If you group, you define the sorting in the context of that group by setting group options. If you do not group, you define the sorting separately.



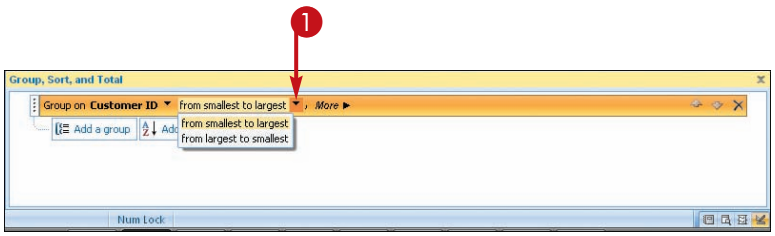
Sort Report Results

SORT THE GROUPS

Note: *Begin these steps in Design view with a group already defined.*

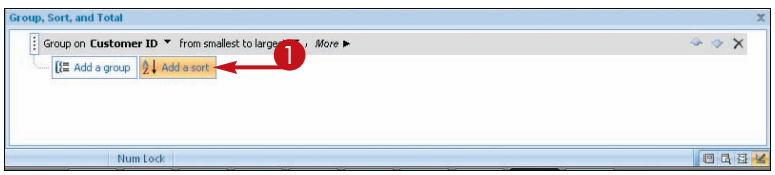
1. Click here and select a sort order.

   You can choose smallest to largest or largest to smallest.



SORT ENTRIES WITHIN A GROUP OR WITH NO GROUPING

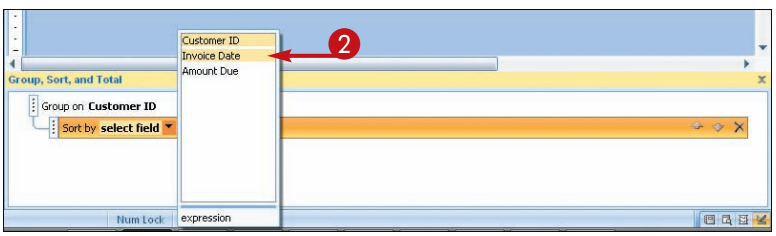
1. Click **Add a sort**.



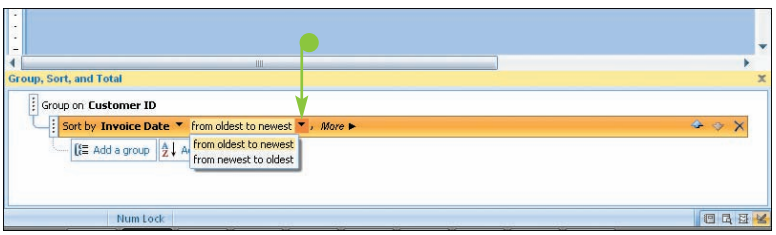
   A list of available fields on which to sort appears.

2. Click the field on which to sort.

   A sort bar appears.



- To reverse the sort order, click here and click a sort setting.



Count Records

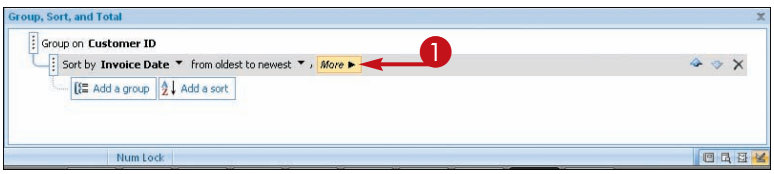
You can use a Count function in a report to list the number of records, within each group individually or within the entire report.

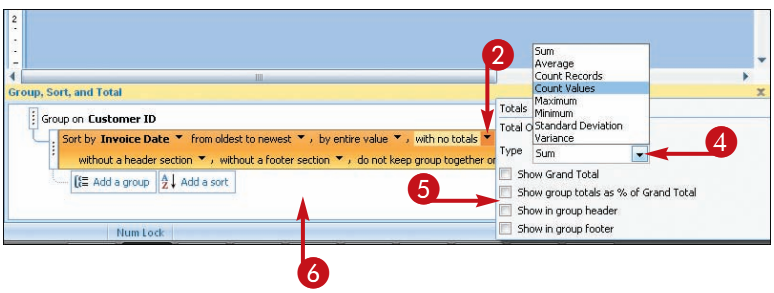


Count can be set either from a sorting or a grouping specification.

Count Records

Note: *Begin these steps in Design view with a group or sort specification already defined.*





1. Click **More**.

   The available options expand.

2. Click here to open a menu of total options.

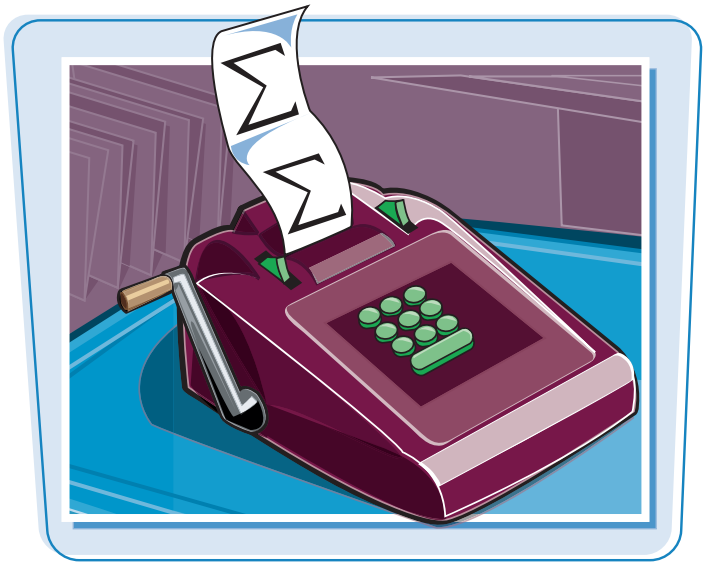
3. Click the Total On ▾ and choose the field on which to total.

4. Click here and choose **Count Values** if it does not already appear.

5. Click check boxes to indicate where and how the count should appear (☐ changes to ☑).

6. Click away from the menu to close it.

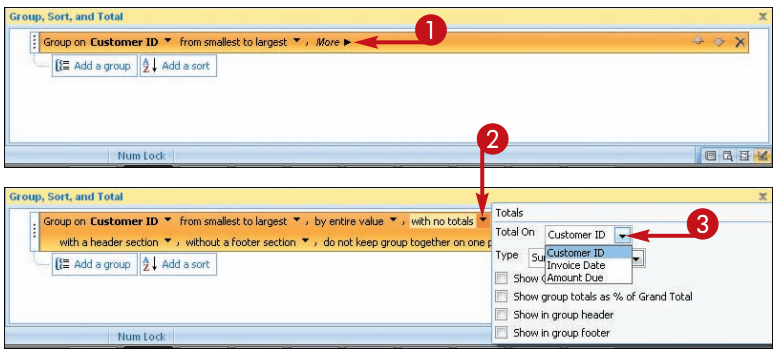
Add an Aggregate Function



Counting is only one of many math operations that you can perform on records in a report. You can also add other functions, including sum, average, minimum, maximum, and standard deviation. These are all referred to as *aggregate functions* because they summarize (aggregate) the data.

Add an Aggregate Function

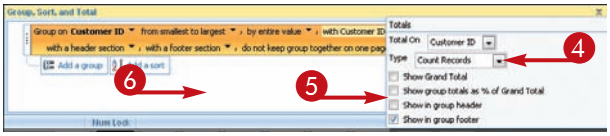
***Note:** Begin these steps in Design view with a group or sort specification already defined.*

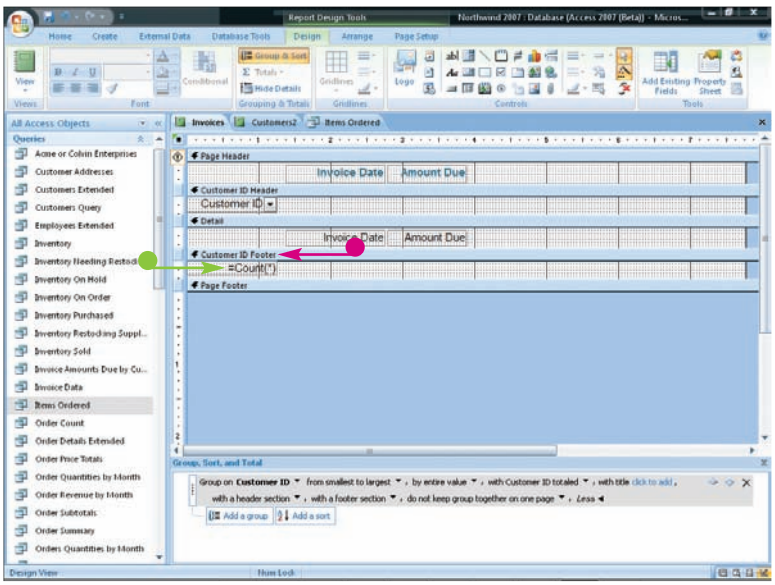


1. Click **More** if the extended options do not already appear.
2. Click here to open a menu of total options.
3. Click here and choose the field on which to total.

4. Click here and choose the function that you want.
5. Click check boxes to indicate where and how the function should appear.
6. Click away from the menu to close it.

- The function appears in the report design.
- If you chose in step **5** to show the function in a group header or footer, a new section appears in the report design for it.

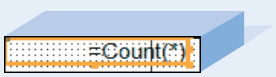




TIPS

How can I move a function between sections?

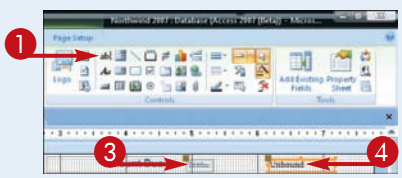
A function is in an unbound text box. You can move these between sections with Cut and Paste, but not with drag and drop. Select the text box containing the function and press Ctrl + X. Then click the bar for the section into which you want to insert it and press Ctrl + V.



Can I use other functions besides the ones on the list?

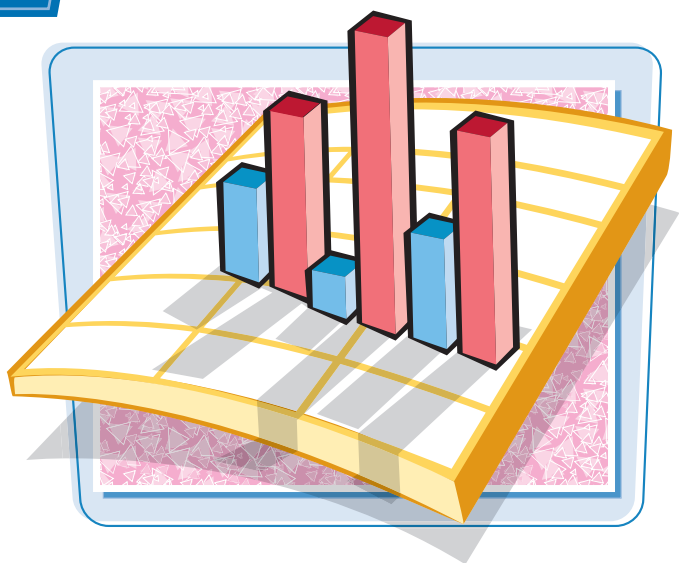
Yes, add an unbound text box to the report and then manually type the function into it. Use the Help system to get the proper syntax.

1. On the Design tab, click the Text Box button.
2. Drag to create the text box.
3. Select the text box label and press Delete to remove it.
4. Click inside the text box and type the function (starting with an equals sign [=]).



Summarize a Datasheet with a PivotTable

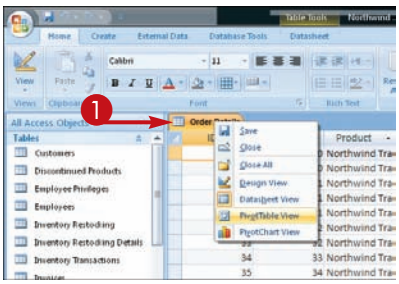
You can use a PivotTable to experiment dynamically with various summary views of your data. Rather than define a fixed report, you can create many different views of your data with the PivotTable before deciding which one is most useful.



Summarize a Datasheet with a PivotTable

CREATE A PIVOTTABLE

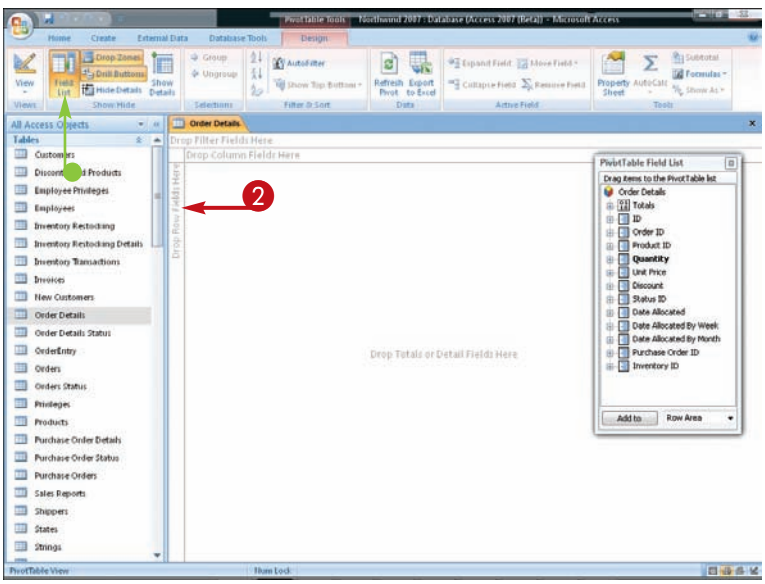
1. From a table or query in Datasheet view, right-click the tab for the datasheet and click **PivotTable View**.



A blank PivotTable grid appears with placeholders.

- If the Field List does not appear, click Field List to display it.

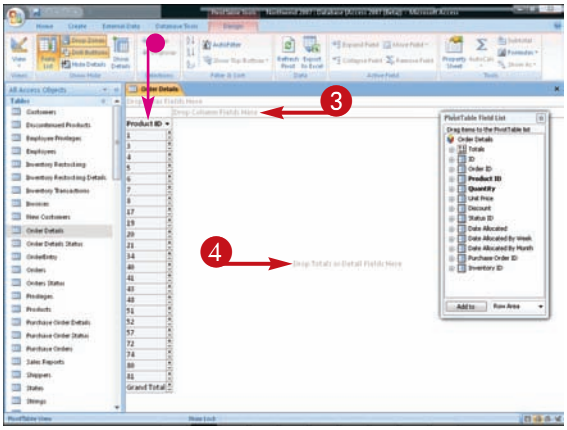
2. Drag a field in to the **Drop Row Fields Here** placeholder.



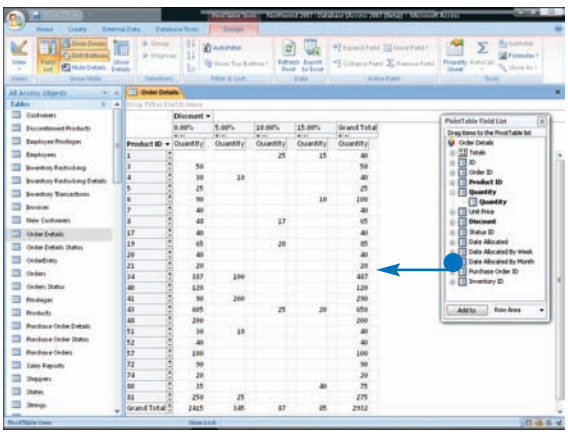
- Data from that field appears in a column at the left.

3. Drag a field in to the **Drop Column Fields Here** placeholder.

4. Drag a field in to the **Drop Totals or Detail Fields Here** placeholder.



- The data appears in the center of the grid in the appropriate row and column.

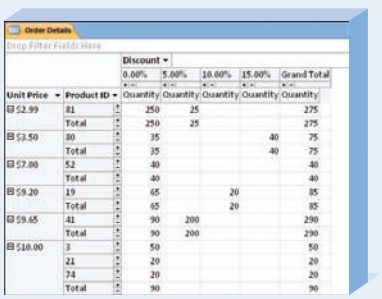


TIPS

Can I have more than one field in each placeholder?

Yes. Just drag multiple fields into the same placeholder area. If there is already a field there, drag the other one on top of it.

Shown here, for example, there are two fields as columns, and the second one is grouped by the first one.



Unit Price	Product ID	Discount 0.00% Quantity	Discount 5.00% Quantity	Discount 10.00% Quantity	Discount 15.00% Quantity	Grand Total Quantity
$2.99	81	250	25			275
	Total	250	25			275
$3.50	80	35			40	75
	Total	35			40	75
$7.00	52	40				40
	Total	40				40
$9.20	19	65		20		85
	Total	65		20		85
$9.65	41	90	200			290
	Total	90	200			290
$10.00	3	50				50
	21	20				20
	74	20				20
	Total	90				90

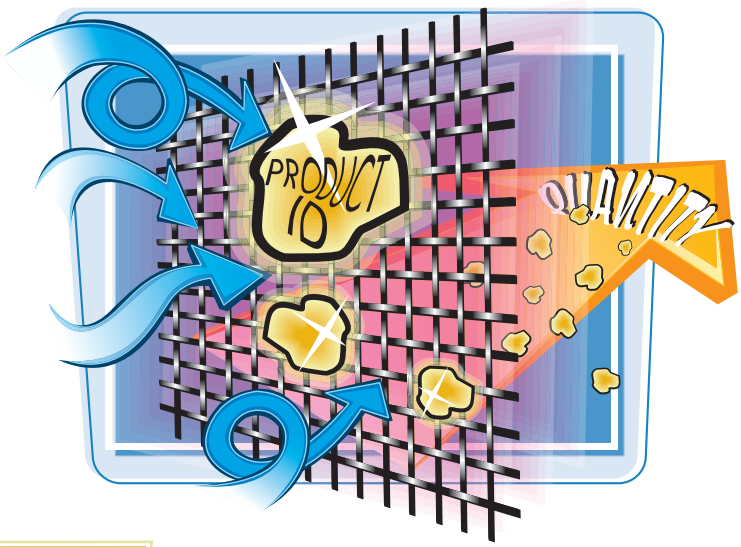
What are the + and – signs for?

They collapse (–) and expand (+) the summary. You can collapse any item to summarize it or expand it to see all the details for it. This flexibility is one of the main benefits of a PivotTable.

continued

Summarize a Datasheet with a PivotTable *(continued)*

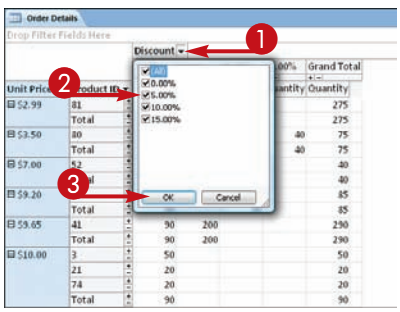
After you have the basic PivotTable in place, you can enhance it by filtering by certain fields. You can add fields to it specifically for the purpose of filtering, or you can exclude certain values from individual rows or columns.



FILTER FOR CERTAIN VALUES IN INDIVIDUAL FIELDS

1. Click ▼ next to a field name.
2. Clear the check box for each value that you do not want to include.
3. Click **OK**.

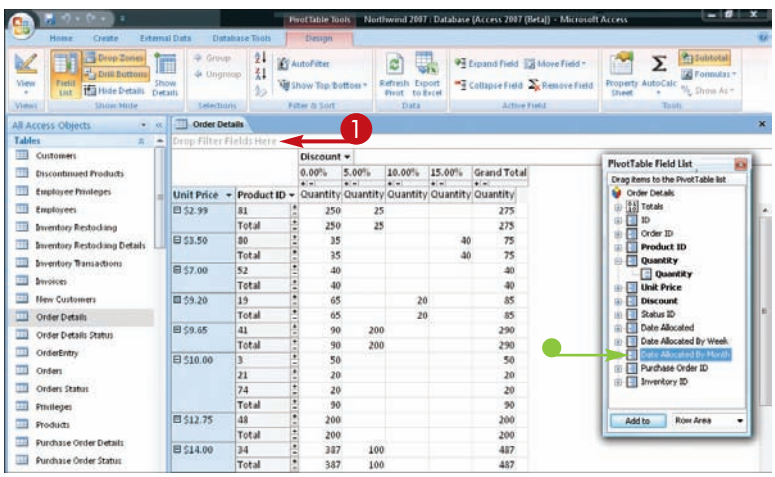
   The results change to exclude the values that you cleared.



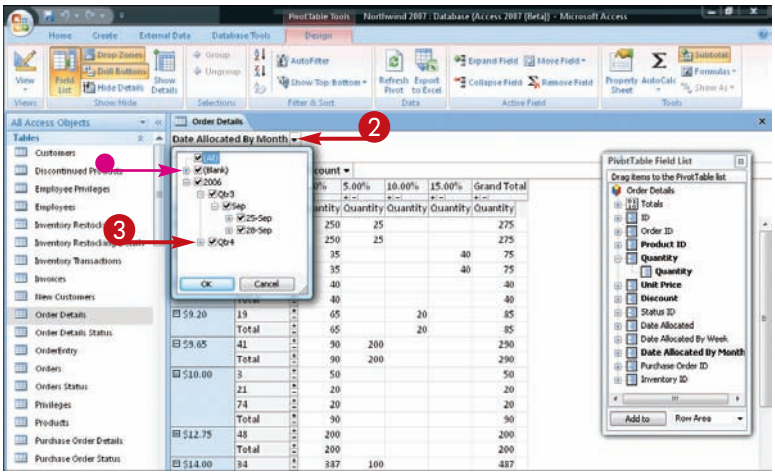
FILTER THE PIVOTTABLE

1. Drag the field by which to filter to the **Drop Filter Fields Here** area.

- The Field List contains not only the individual fields but also some special entries that enable you to group certain fields, such as Date Allocated by Week and Date Allocated by Month. The table on which this is based has a single Date Allocated field.

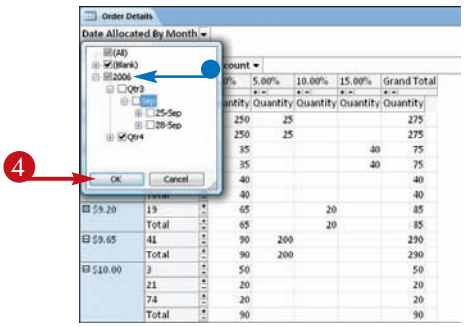


2. Click ▼ to the right of the filter field, opening its menu.
   - If needed, click a + to expand a category.
3. Clear the check boxes for any values you do not want.



   - When a category is partly selected, its check box appears gray.
4. Click **OK**.

   The filter is applied, and a note appears under the filter field saying what has been excluded.



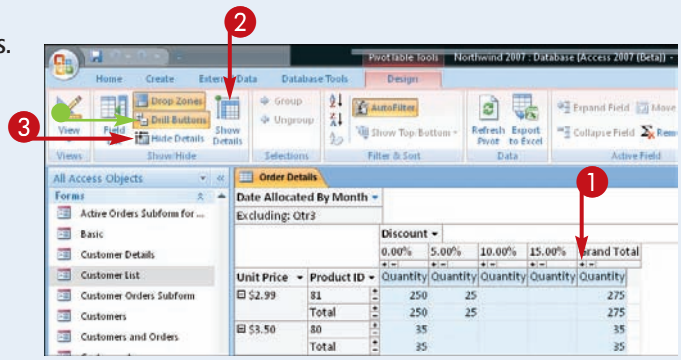
TIP

Why does nothing appear in the Grand Total category? It just says No Totals.

1. Click + under Grand Total to see the totals.
   - The plus and minus signs are called Drill Buttons, and you can turn them on or off with the **Drill Buttons** button on the Design tab.

How can I show or hide all details?

2. Click **Show Details** to show all details.
3. Click **Hide Details** to hide all details.



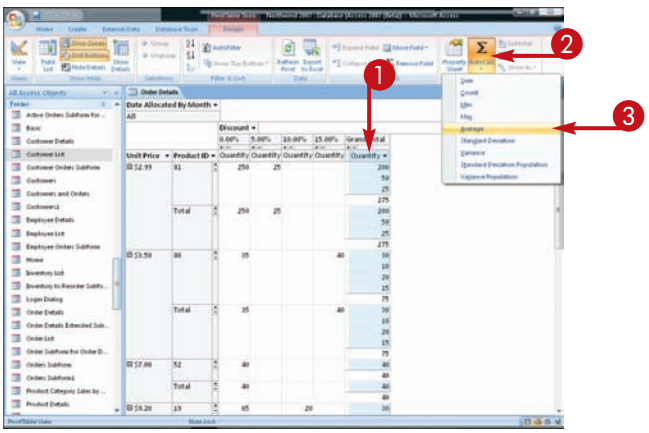
Add Aggregate Functions to a PivotTable

You can use AutoCalc to easily add aggregate functions to a PivotTable view. For example, you can add sums, averages, and so on.



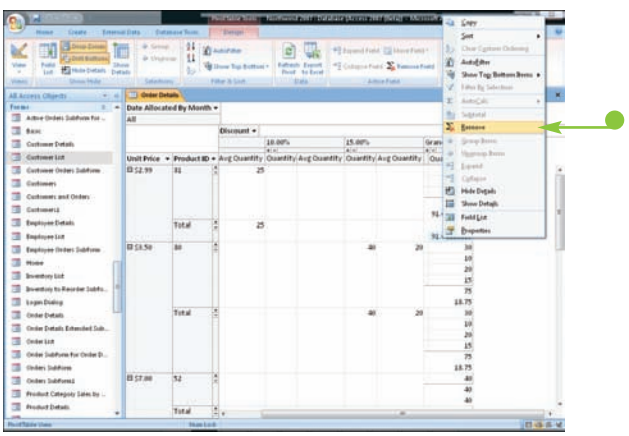
Add Aggregate Functions to a PivotTable

1. In PivotTable view, click the field in the PivotTable on which you want to aggregate.
2. Click **AutoCalc**.
3. Click the aggregate function that you want.



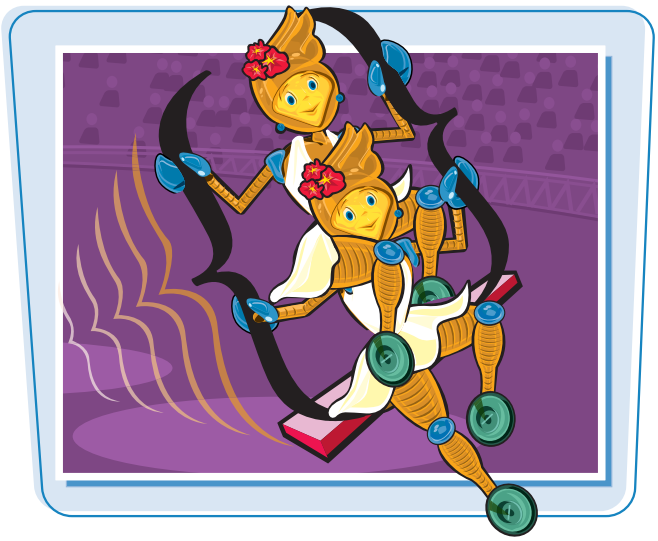
The function appears as a new row (or column) for each grouping.

- To delete the aggregate function, find it under Totals in the Field List. Right-click it and choose **Remove**.



Group and Ungroup PivotTable Content

After creating a PivotTable view, you may decide that there are too many individual entries in it to be meaningful. You can group these individual entries into summary items to make the data more meaningful and usable.



Group and Ungroup PivotTable Content

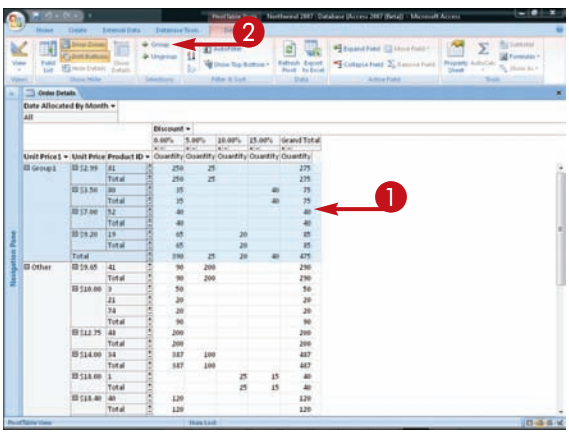
GROUP ENTRIES

1. In PivotTable view, select the individual entries that you want to group.
2. Click **Group**.

   The entries are grouped into a generically named Group1.

   You can change the group's name by right-clicking it and choosing Properties and entering a group name on the Captions tab.

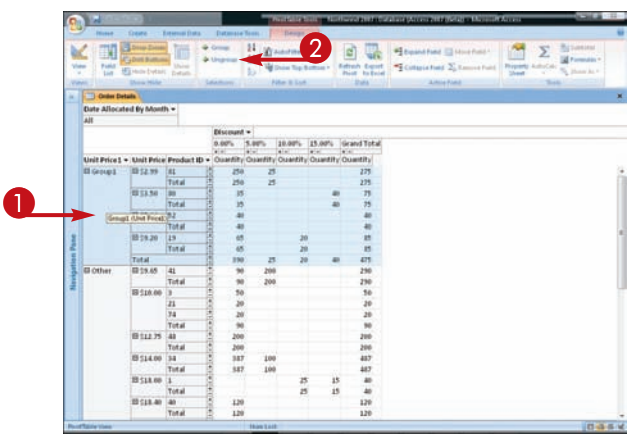
   You can click + to expand the group or – to collapse it.



UNGROUP A GROUPED ENTRY

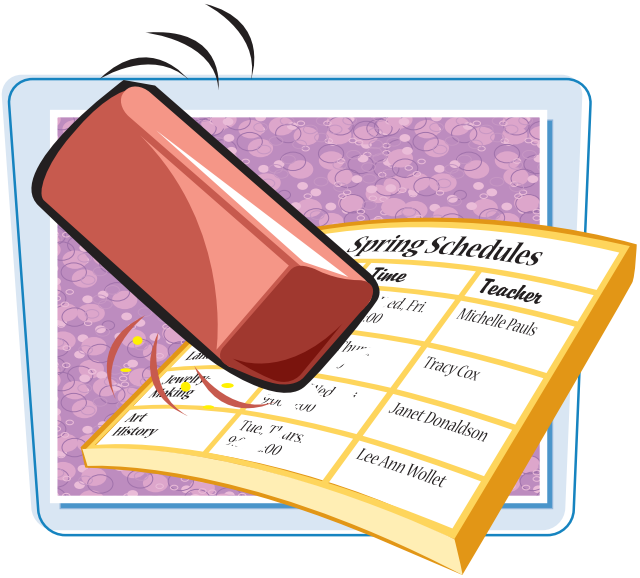
1. Select the group that you want to ungroup.
2. Click **Ungroup**.

   The single entry separates back into individual entries.



Clear a PivotTable Grid

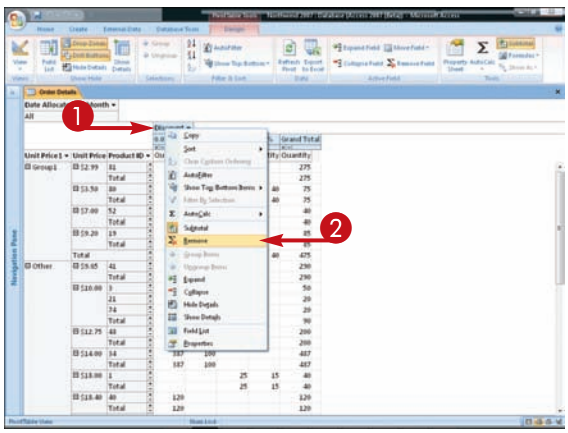
A PivotTable stays populated with the fields you put in it until you clear them. The fields you put in a PivotTable also carry over to a PivotChart.



You do not have to clear the PivotTable grid before switching back to Datasheet view.

Clear a PivotTable Grid

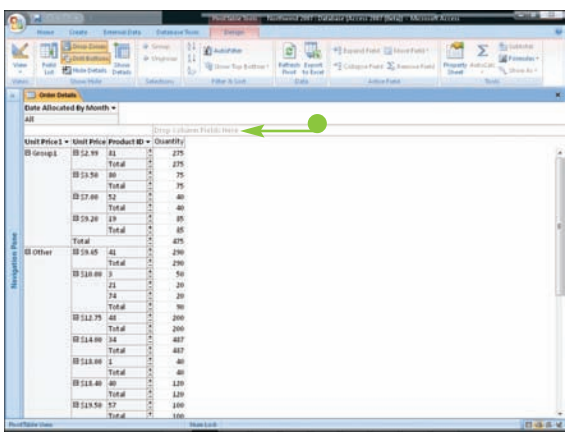
1. In PivotTable view, right-click the field to remove.
2. Click **Remove**.



The field is removed from the grid.

- If there are no fields remaining in that placeholder, the placeholder box appears empty.

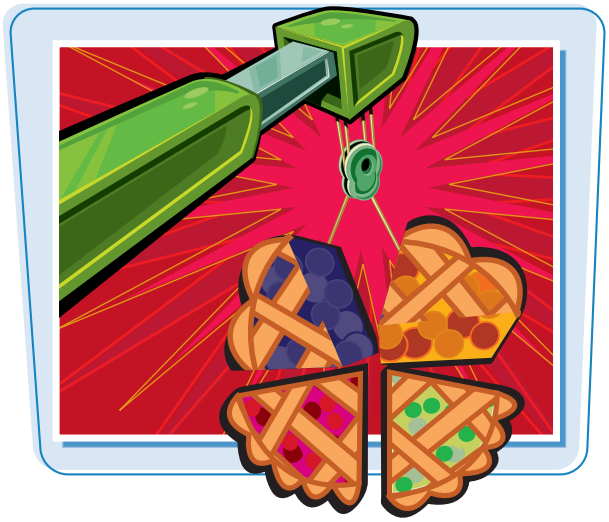
3. Repeat steps **1** to **2** for each field to remove from the grid.



***Note:** Another way to clear the grid for a PivotTable or PivotChart is to close the table or query without saving your changes to it.*

Switch a PivotTable to a PivotChart

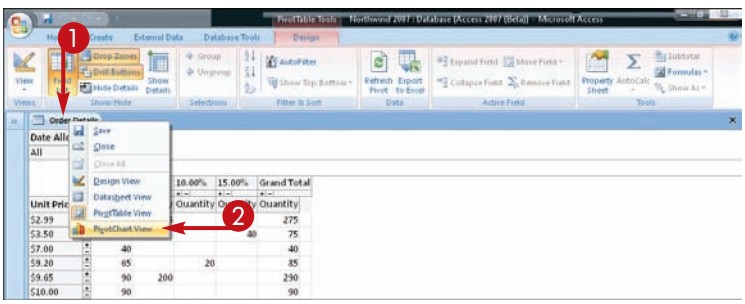
PivotTables and PivotCharts are two different views of the same data, so you can switch freely between them.



If you switch to PivotChart view while there are fields in PivotTable view, the fields carry over unless they are cleared first.

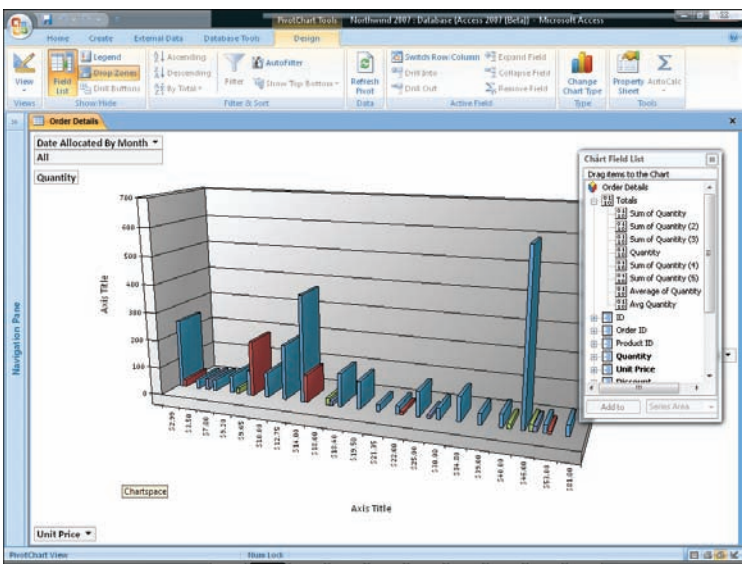
Switch a PivotTable to a PivotChart

1. Right-click the tab for the PivotTable.
2. Click **PivotChart View**.



A PivotChart grid appears. If there were fields in the PivotTable view, those same fields carry over into the PivotChart.

Note: *You will learn more about PivotCharts in Chapter 13.*



CHAPTER

13

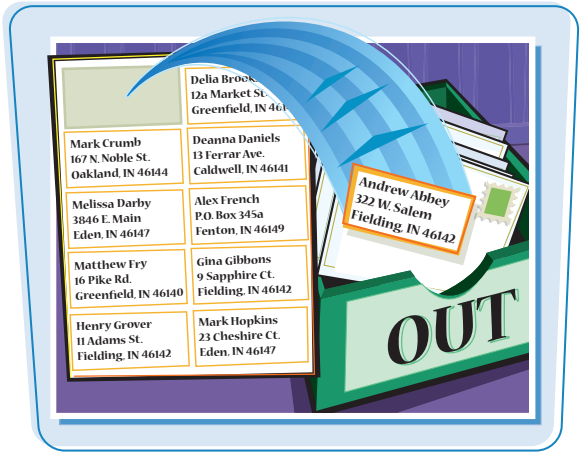
Creating Mailing Labels and Charts



In addition to standard reports, Access can also create mailing labels. This enables you to print labels without exporting the data first into a word-processing program and to set up reusable label definitions for recurring mailings. Access can also produce charts in the form of PivotCharts. PivotCharts are similar to PivotTables, which you learned about in Chapter 12, but they analyze data graphically.

Create Labels 240
Add a Field to an Existing Line 244
Add a Field to a Label As a Separate Line 245
Color the Label Background 246
Color the Label Text 247
Apply Font Formatting to Label Text 248
Export Labels to Word 250
Open a PivotChart View.....251
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Group Data in a PivotChart.....253
Change the PivotChart Type 254
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Create Labels

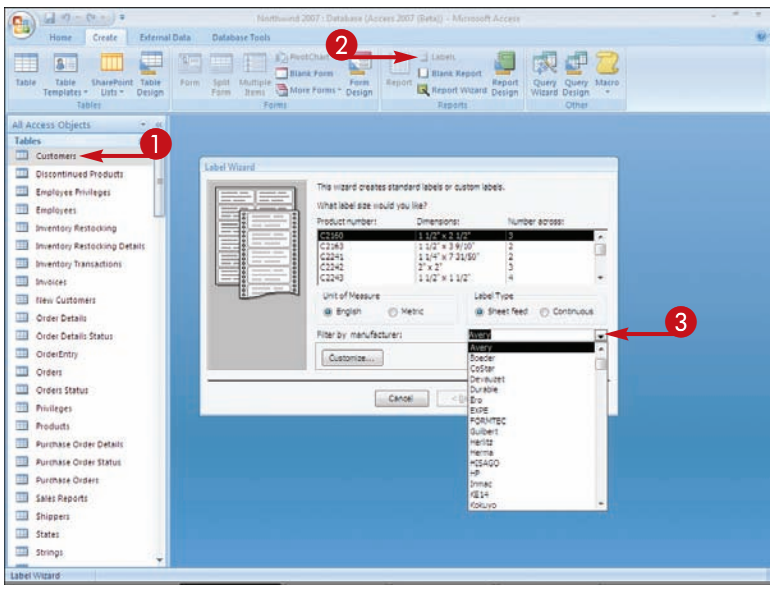


Labels are a special type of report. They print multiple records per page, in a layout designed to correspond to self-stick labels that feed into your printer.

Create Labels

1. In the Objects list, click the table or query containing the fields that you want.
2. On the Create tab, click **Labels**.

   The Label Wizard dialog box opens.
3. Click here and select the label manufacturer.



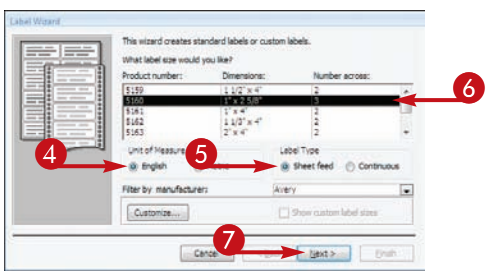
4. Click the unit of measure to use.
5. Click the label type.

Note: *Continuous feed labels are usually used only in dot matrix printers.*

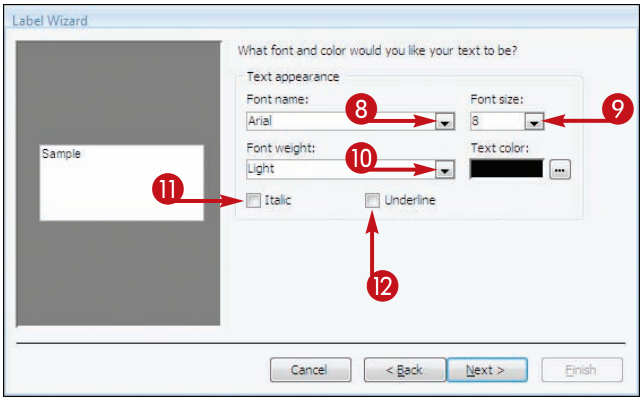
6. Click the label product number.

Note: *If you do not know the product number, choose one that matches the dimensions and number across of the labels you have.*

7. Click **Next**.



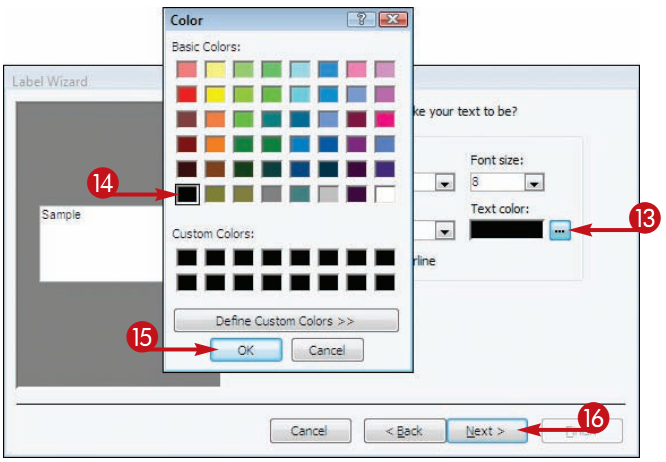
8. Click here and select a font for the labels.
9. Click here and select a font size.
10. Click here and select a font weight.
11. If needed, click **Italic**.
12. If needed, click **Underline**.



13. Click here to open the Color box.
14. Click a text color.

Note: *You can optionally click* ***Define Custom Colors*** *for more choices.*

15. Click **OK**.
16. Click **Next**.



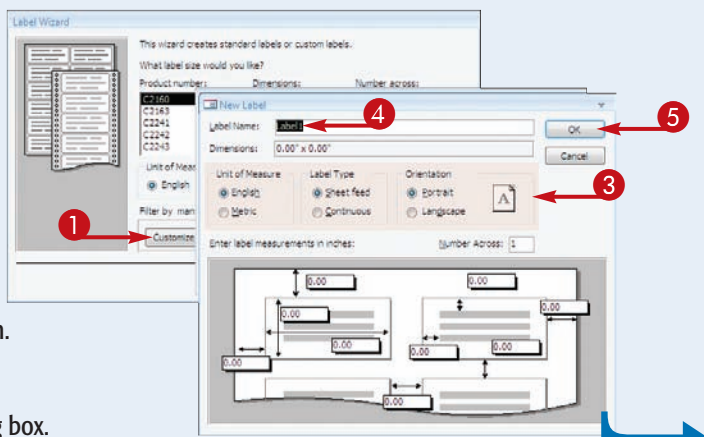
TIP

How can I create a custom label definition?

1. From the first screen of the Label Wizard, click **Customize**.

   The New Label Size dialog box opens.
2. Click **New**.

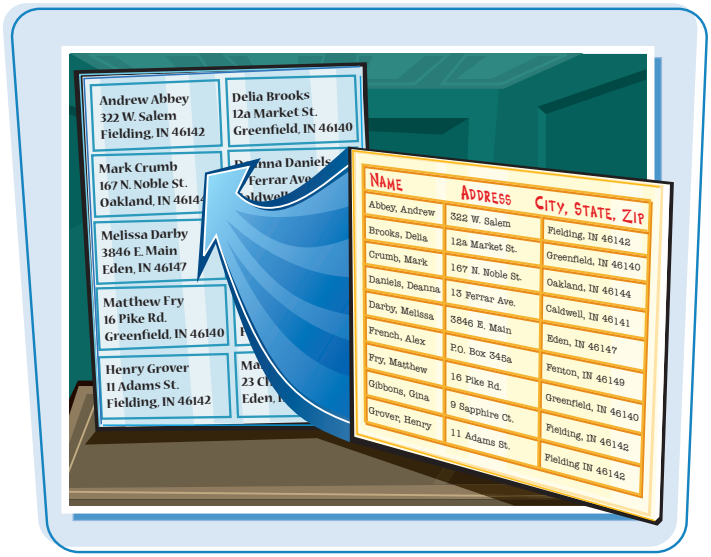
   The New Label dialog box opens.
3. Define the new label according to its size, type, and orientation.
4. Type a name for the new label definition.
5. Click **OK**.
6. Click **Close** in the New Label Size dialog box.



continued

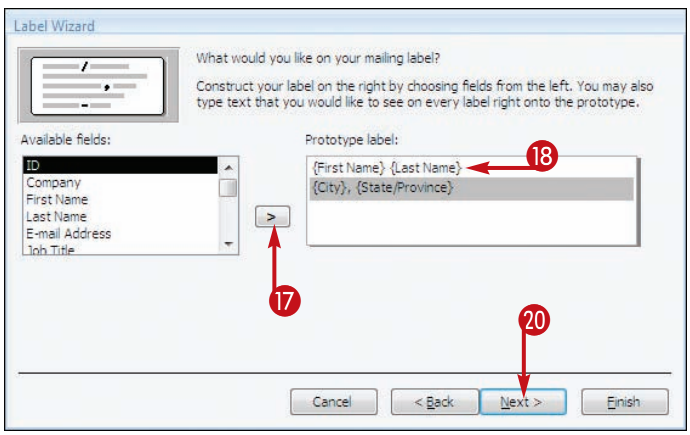
Create Labels *(continued)*

After choosing the size and formatting for the label, you set up the fields that should appear on it. These come from the table or query that you selected before you started the wizard.

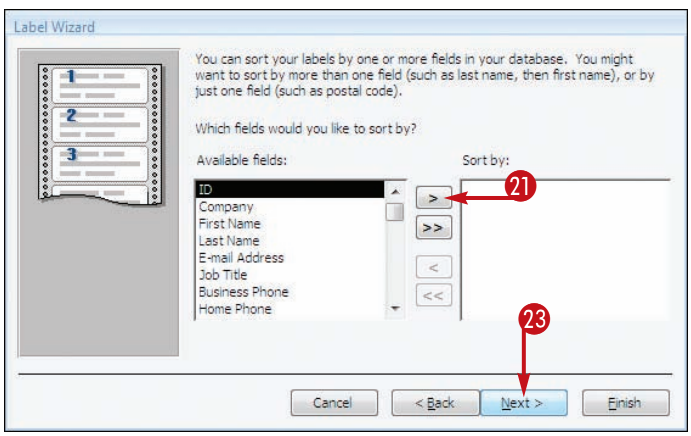


Create Labels *(continued)*

17. Click a field and then click here to move it to the prototype label.
18. Type any spaces, paragraph breaks, or other punctuation that should separate the fields.
19. Repeat steps **17** to **18** as needed to create the complete label.
20. Click **Next**.

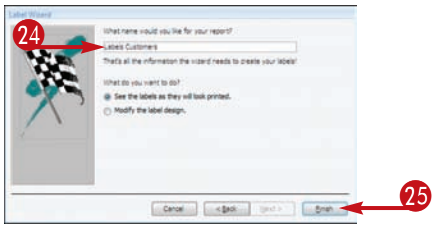


21. You can click a field by which to sort and then click here to move it to the Sort By list.
22. Repeat step **21** to specify additional sorting if needed.
23. Click **Next**.



24 Type a name for the label report.

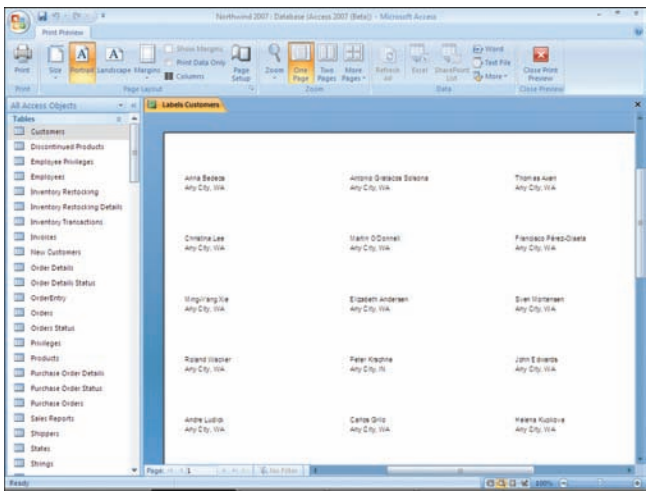
25 Click **Finish**.



26 If a warning appears about spacing, click **OK**.



The report appears in Print Preview, ready to print on label paper.



TIPS

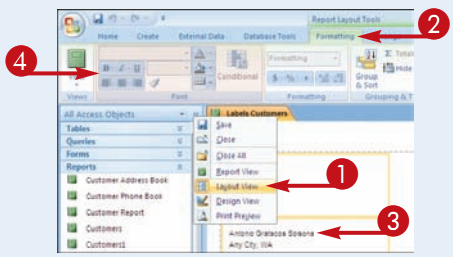
How can I change the font after the report has been generated?

1 Right-click the tab and choose **Layout View**.

2 Click the **Formatting** tab.

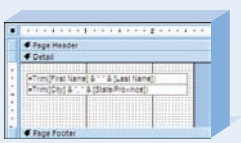
3 Select the text to format.

4 Use the controls in the Font group to format the text.



When I look at the labels in Design view, the fields are enclosed in a =TRIM function. Why?

The =TRIM function removes extraneous spaces around entries. For example, if the First Name field's entry is Bob with several spaces after it and you did not use =TRIM, those spaces would appear between the first and last names on the label.



Add a Field to an Existing Line

Labels generated with the Label Wizard concatenate multiple fields in a single text box within a =TRIM function.

If you want to add or remove a field within a line of the label, you must understand the syntax used to construct the function.



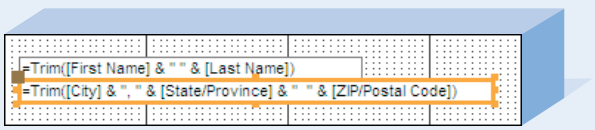
The Syntax of the =TRIM() function

Syntax	*Explanation*
=Trim([City] & ", " & [State/Province])	Full example.
=Trim( )	The =TRIM function trims off any excess blank spaces in the fields.
[First Name]	Field names appear in square brackets.
&	Fields are concatenated with an ampersand.
", "	Literal text or space is enclosed in quotation marks.

Additions to a =TRIM() function

To add another field within an existing =TRIM function, you must make sure that the new field is enclosed in square brackets, separated from other fields by an & sign, and separated from other fields with any literal text or punctuation marks in quotation marks.

So, for example, to add the ZIP/Postal Code field to the second line of the example shown here, you would change the function's code to **=Trim([City]&", "&[State/Province]&" "&[ZIP/Postal Code])**.



Add a Field to a Label As a Separate Line

In addition to adding a field to an existing =TRIM() function on a label, you can also add fields as separate text boxes, on their own lines. For example, the label used in the preceding sections lacked an Address line. You could add an Address line in Report Design view.

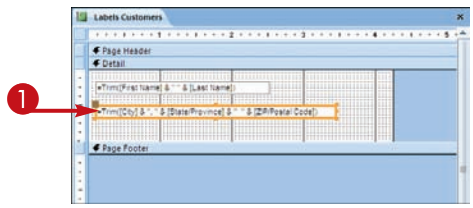


If the field will be by itself in its own text box, you do not have to use the =TRIM() function; you can simply add the field as you would on a form or ordinary report.

Add a Field to a Label As a Separate Line

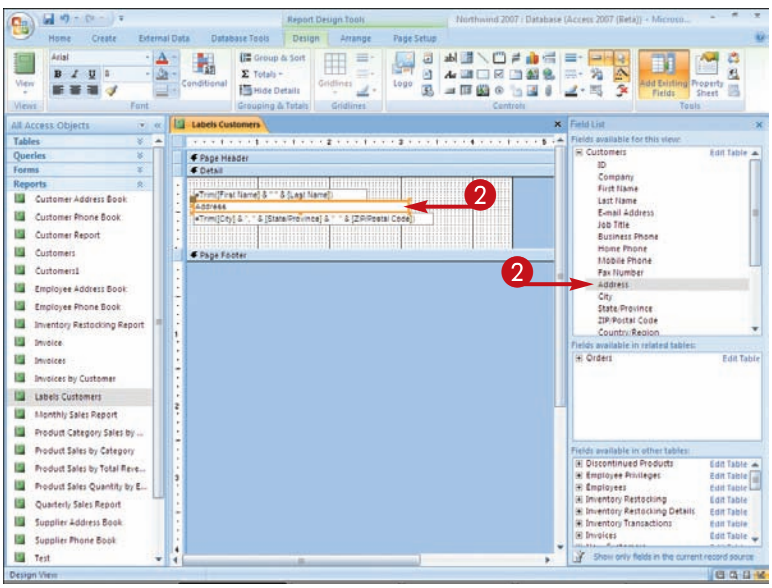
1. In Design view, if needed, drag the existing fields to make room for the new line.

Note: *Remember, to move a field, position the mouse pointer over its border and drag.*



2. Drag the new field onto the layout grid.

Note: *To delete a field, select it and press* Delete *on the keyboard.*



Color the Label Background

There are two ways to color a label background. You can color the overall background of the label, or you can color the individual text boxes in which the text appears.



Color the Label Background

1. In Design view, click the **Detail** section to select the entire section.

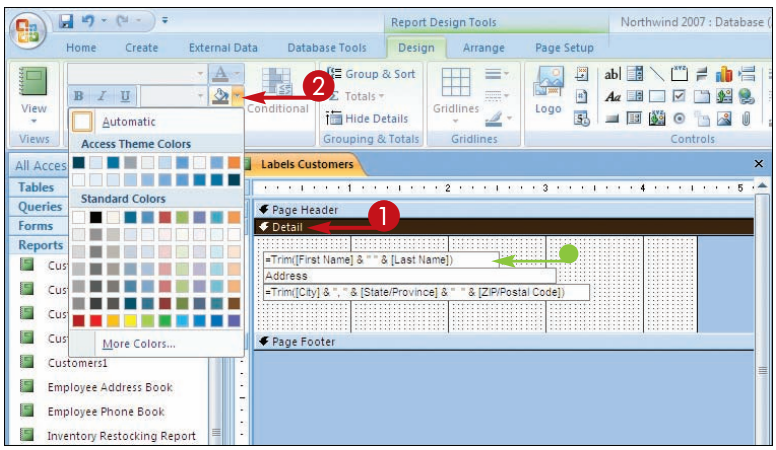
   OR

   - Click an individual text box to select it.

2. Click here and click a background color.

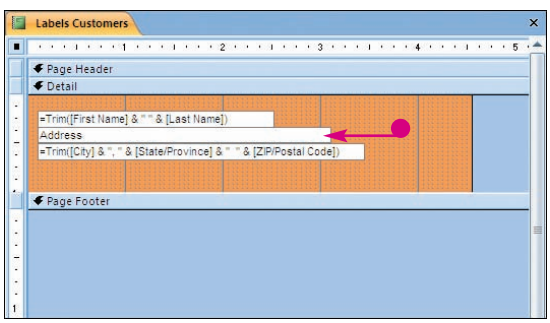
Note: *You can click* ***Transparent*** *to remove any existing color.*

Note: *You can click* ***More Colors*** *to open a Colors dialog box from which you can choose from a wider variety.*



The chosen color background is applied to either the entire label or to the individual text box.

- Fields on the label remain white by default; you can set their colors to Transparent if you prefer.



Color the Label Text

You can change the color of the label's text. This is useful especially after changing the label background color — see the preceding section — so that the text continues to strongly contrast with the background for good visibility.



Color the Label Text

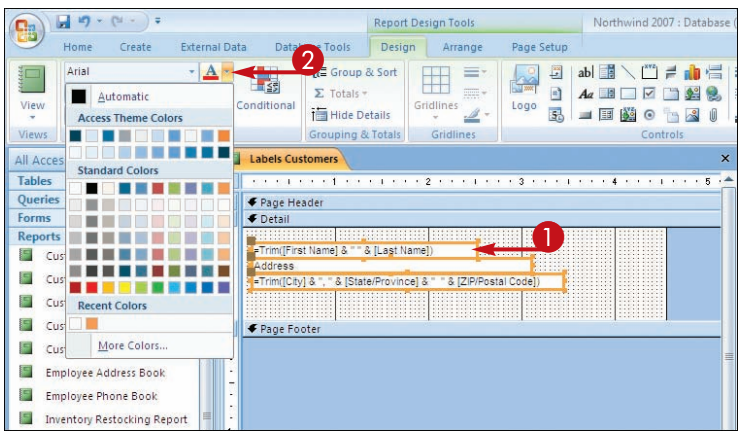
1. In Design view, click the text box containing the text to color.

Note: *You cannot select only part of the text in a text box for a different color; you must select the entire text box.*

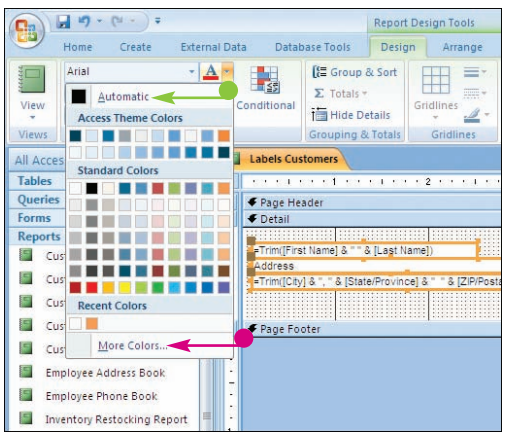
Note: *You can select multiple text boxes by holding down* Shift *as you click each one or drag a lasso around them.*

2. Click here and click a text color.

   The chosen color is applied to the text in that text box.

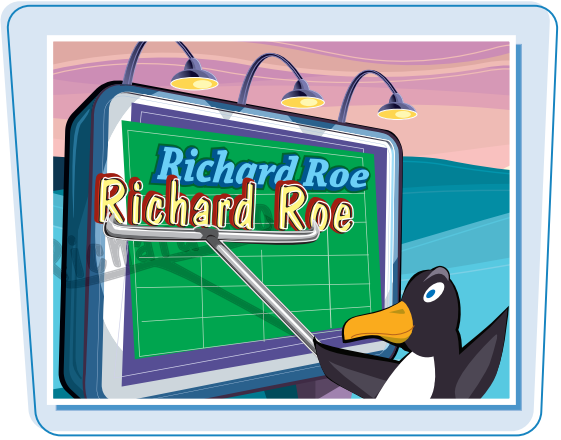


- You can click **Automatic** to make the text either black or white, whichever would better contrast with the background.
- You can click **More Colors** to open a Colors dialog box from which you can choose from a wider variety.



Apply Font Formatting to Label Text

You can change the font formatting for the label text in the same ways in Design view that were offered in the Label Wizard: font, size, bold, italic, and underline. You can also set the horizontal alignment and copy formatting between text boxes with the Format Painter button.

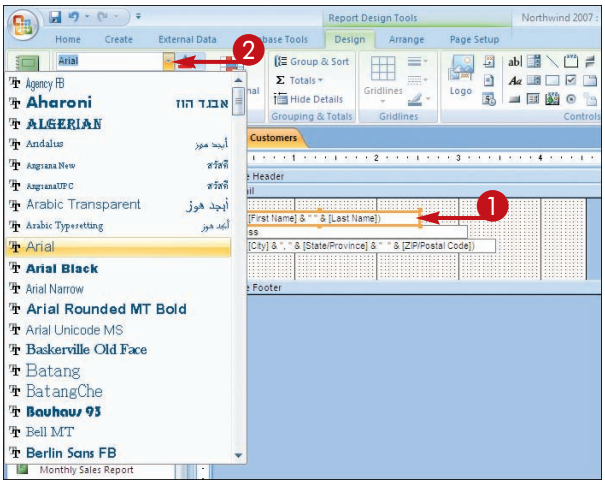


Apply Font Formatting to Label Text

CHANGE THE FONT

1. In Design view, click the text box.
2. Click here and click a different font.

   The font is applied.



CHANGE THE FONT SIZE AND ATTRIBUTES

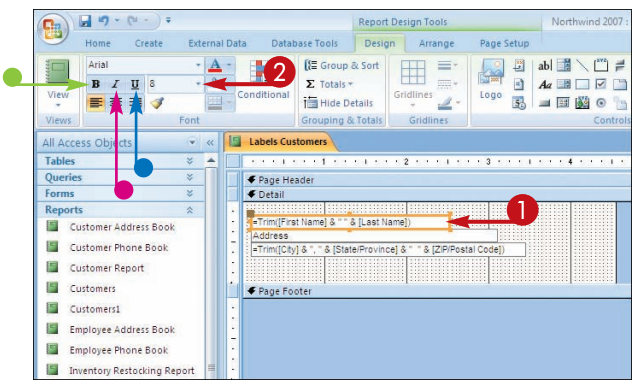
1. Click the text box.
2. Click here and click a different size.

   The font is resized.

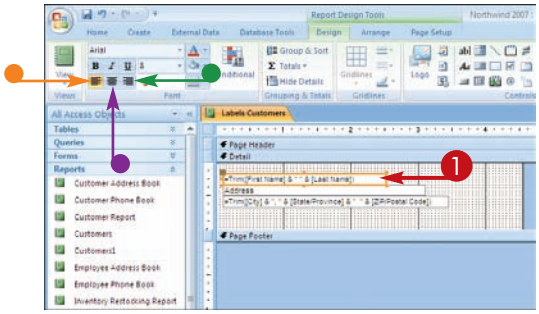
3. You can click one or more of these buttons to apply attributes:

   - Bold
   - Italic
   - Underline

   The font attributes are applied.

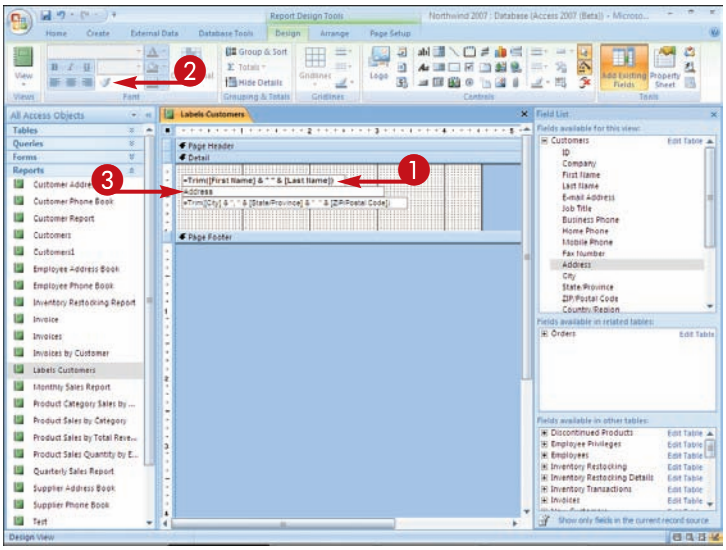


CHANGE THE TEXT ALIGNMENT



1. Click the text box.
2. Click one of the alignment buttons:
   - Left
   - Center
   - Right

COPY FORMATTING TO ANOTHER TEXT BOX



1. Select a text box that is already formatted the way you want.
2. Click the Format Painter button.
3. Click the text box to be formatted.

   The formatting is copied to the other text box.



How can I format one field in a text box differently from the others?

You cannot. Font formatting is applied to the entire text box, not to individual characters. If you want a certain field to be formatted differently, place it in its own text box.



After enlarging the font, the text appears truncated. How can I fix this?

You may need to resize the text box to adjust for the larger font size. You can do this in any of these ways: dragging a selection handle, double-clicking a selection handle, or right-clicking the text box and choosing **Size** and then selecting **To Fit**.



Export Labels to Word

You may prefer to print labels in Microsoft Word rather than Access because of the increased options available there for formatting. You can use the Export Wizard to export the labels — or any other report — to a new Word document.



Export Labels to Word

1. On the External Data tab, in the Export group, click **Word**.

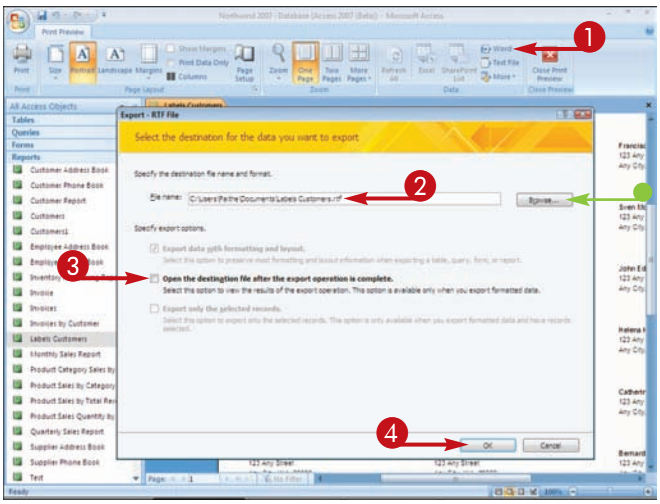
   The Export – RTF File Wizard runs.

2. Change the path and filename if needed.

   - You can click **Browse** to choose a location.

3. You can click here to open the file in Word after the export.

4. Click **OK**.

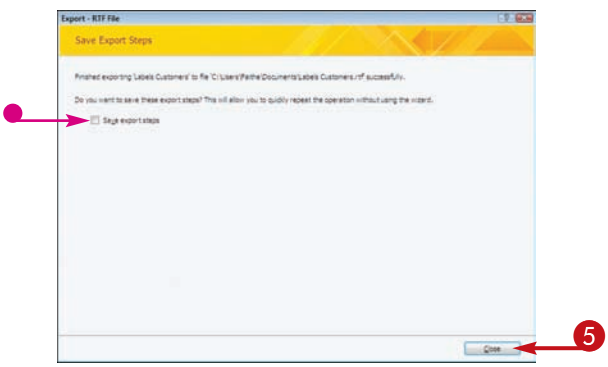


If you marked the check box in step **3**, the labels appear in Word.

The final screen of the Export Wizard appears with a confirmation.

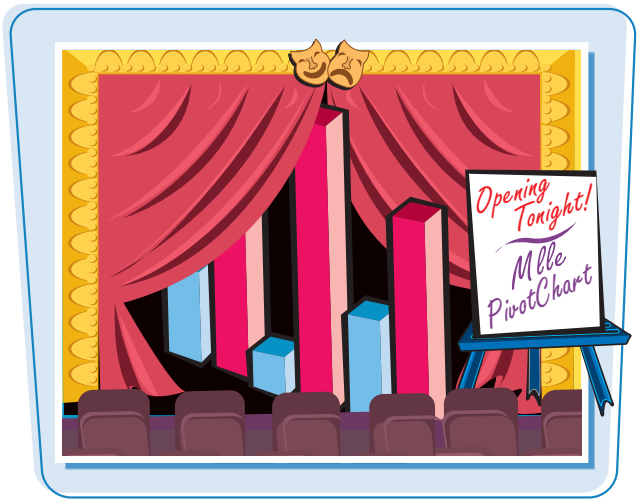
- You can click here to save the export steps and then recall them later from Saved Exports on the External Data tab.

5. Click **Close**.



Open a PivotChart View

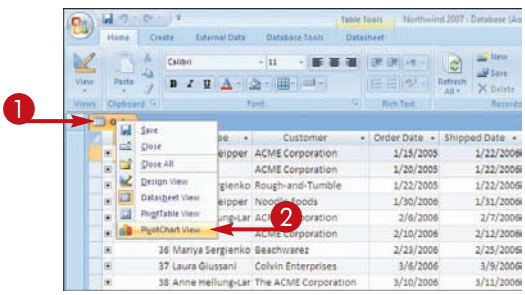
A PivotChart is like a PivotTable, except it expresses the data graphically rather than as text and numbers.



You can open a PivotChart view for any table or query and then experiment with different charting scenarios by dragging fields in to its placeholders.

Open a PivotChart View

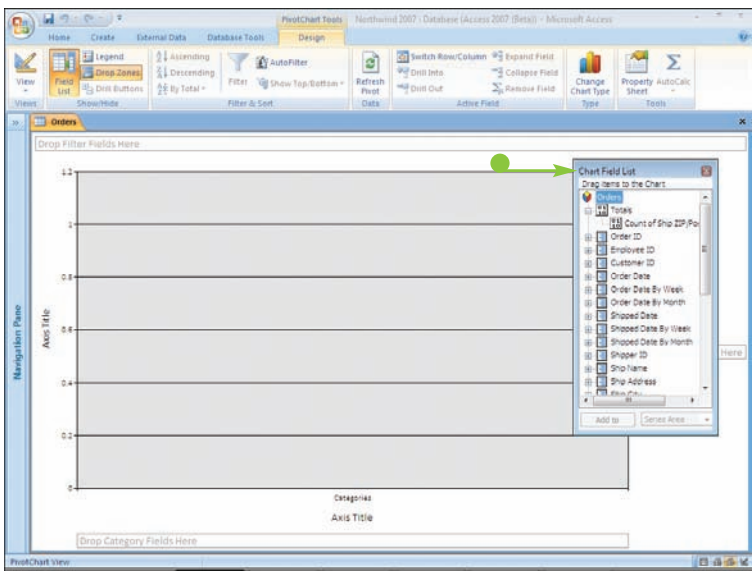
1. In Datasheet view, right-click the datasheet's tab.
2. Click **PivotChart View**.



An empty PivotChart grid appears, unless you have previously set up a PivotTable or PivotChart for this table or query.

Note: *If there are already fields in use, delete them. See Chapter 12.*

- You can drag the Chart Field List around onscreen by its title bar; by default it covers up the Drop Series Fields Here placeholder.



Create a PivotChart



After opening a PivotChart view, you can create a variety of different PivotCharts by dragging fields on to the various placeholders in the grid.

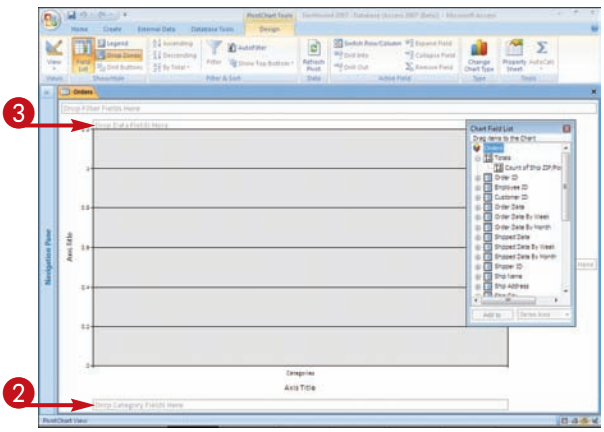
This is just like creating a PivotTable – see Chapter 12 – except the result is graphical rather than text-based.

Create a PivotChart

1. Display the PivotChart view for a table or query as shown in the preceding section.
2. Drag a field on to the **Drop Category Fields Here** placeholder.

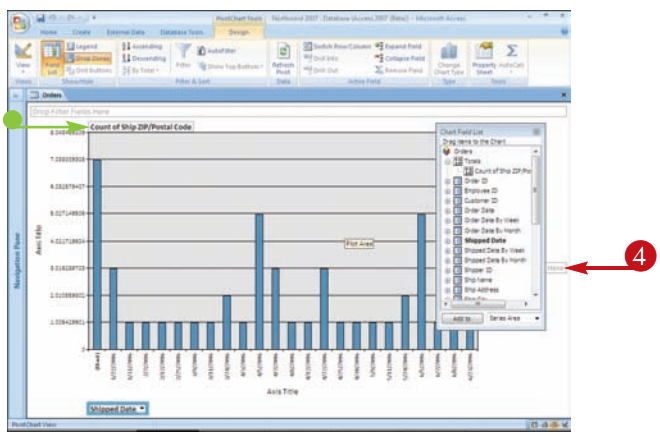
   That field appears as the categories (bars) along the horizontal axis.
3. Drag a field on to the **Drop Data Fields Here** placeholder.

   That field appears as the values (the heights of the bars).



- If the field does not contain numeric data, a count of its values is used.

4. You can also drag a field on to the **Drop Series Fields Here** placeholder.



Group Data in a PivotChart

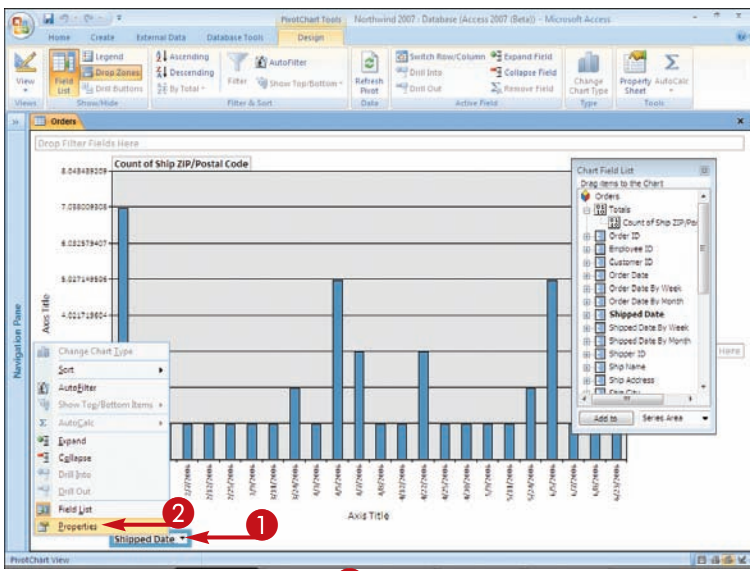
The chart shown in the preceding section has a lot of small bars because each individual date has its own bar. You may find it more useful to group charts such as this by date.



You can group by numeric intervals, dates, or other values, depending on the type of data that the field contains.

Group Data in a PivotChart

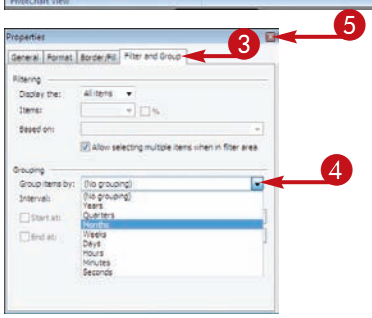
1. In the PivotChart view, right-click the field placeholder.
2. Click **Properties**.



The Properties dialog box opens.

3. Click the **Filter and Group** tab.
4. Click here and click a grouping interval.
5. Click here to close the dialog box.

The data is grouped as you have specified.



Change the PivotChart Type

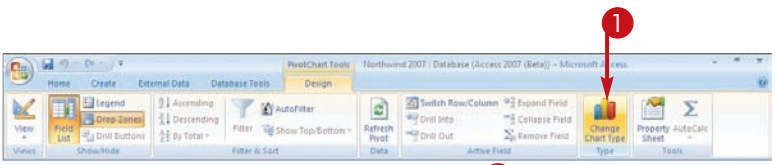
You can set a PivotChart to use a different chart type on the Design tab. Most of the chart types available in full-featured charting programs are available, including bars, pies, and lines.

In addition, for some chart types, you can switch between rows and columns. This switches the fields between the category axis (horizontal) and value axis (vertical).



Change the PivotChart Type

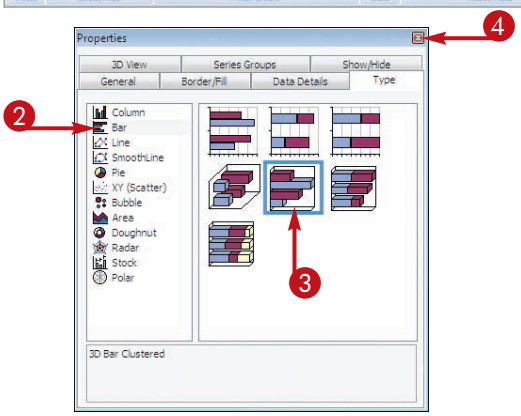
1. In the PivotChart view on the Design tab, click **Change Chart Type**.



The Properties dialog box opens with the Type tab displayed.

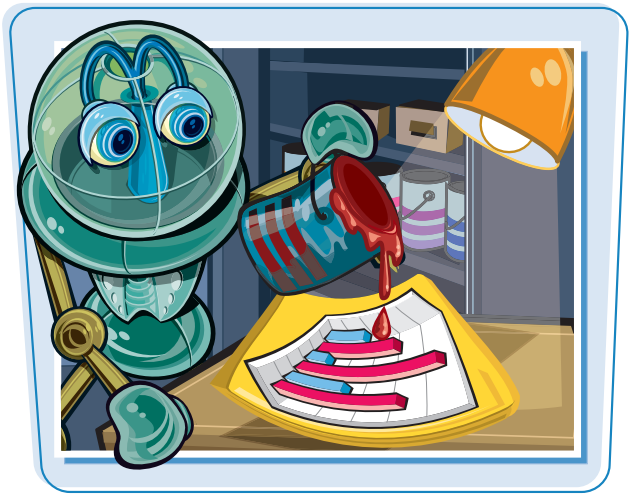
2. Click a chart category.
3. Click a chart type.
4. Click here to close the dialog box.

The chart is changed to the new type.



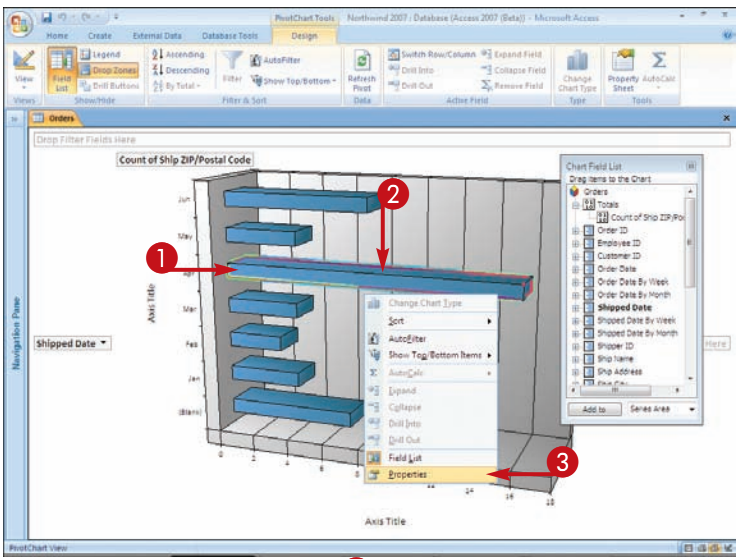
Change Chart Colors

You can change the colors of the bars — or lines, slices, or whatever shape the data appears in for the chosen chart type.



You can change one individual data point or an entire data series. When you click a bar the first time, only that bar is selected; click it again to select its entire series.

Change Chart Colors



1. In PivotChart view, click the data point (the bar, slice, or other shape) that you want to change the color of.

   That single data point's shape becomes selected.

   You can select all data in a series by clicking the data point again.

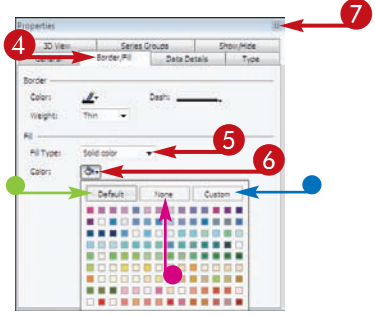
2. Right-click the selected data point.
3. Click **Properties**.

   The Properties dialog box opens.

4. Click the **Border/Fill** tab.
5. Click here and select a fill type.

   The default, Solid Color, usually works. Use a pattern if you plan to print in black and white.

6. Click here and click a fill color.
   - You can click **Default** to restore the default color.
   - You can click **None** to remove the color.
   - You can click **Custom** to display a Color dialog box.
7. Click here to close the dialog box.



CHAPTER

14

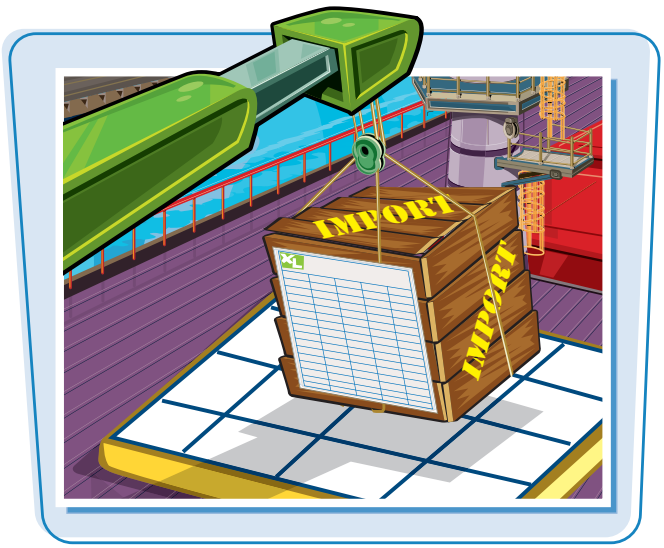
Working with External Data



One of Access's strongest features is its ability to work with outside data. You can import data from other Access databases, from Excel, and even from plain text files.

Import an Excel Worksheet 258
Link to an Excel Worksheet 262
Manage Linked Tables 264
Import a Table from Another Access Database 266
Import Data from a Delimited Text File.....268
Export Data to Excel 272
Export Data as HTML 273
Export Data to a Plain Text File 274
Save Import or Export Specifications.....276
Using Saved Import or Export Specifications.....277

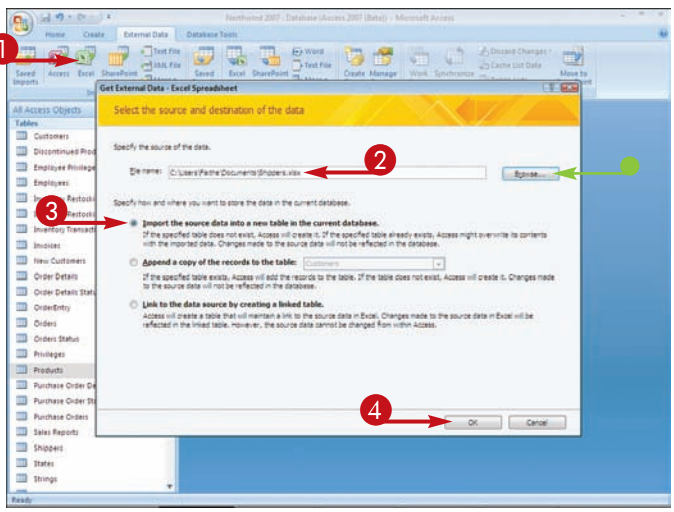
Import an Excel Worksheet



You can import data from an Excel worksheet into Access, creating a new table. This new table becomes a full part of the Access database; it does not retain any ties to Excel.

Excel data that is database-oriented with field names as the top row imports well into Access. Data that includes formulas and functions does not import well.

Import an Excel Worksheet



1. On the External Data tab in the Import group, click **Excel**.

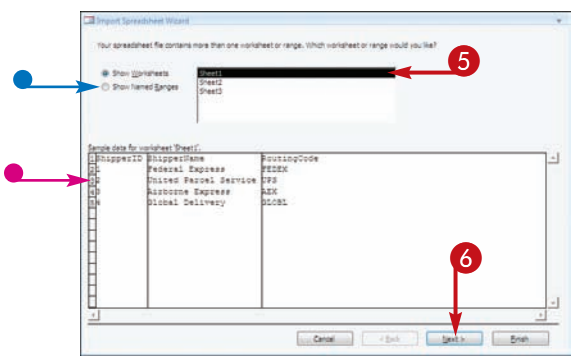
   The Get External Data – Excel Spreadsheet dialog box opens.

2. Type the path and filename in the File Name box.

   - You can click **Browse** to browse for the file if desired.

3. Click **Import the source data into a new table in the current database**.

4. Click **OK**.



The Import Spreadsheet Wizard runs.

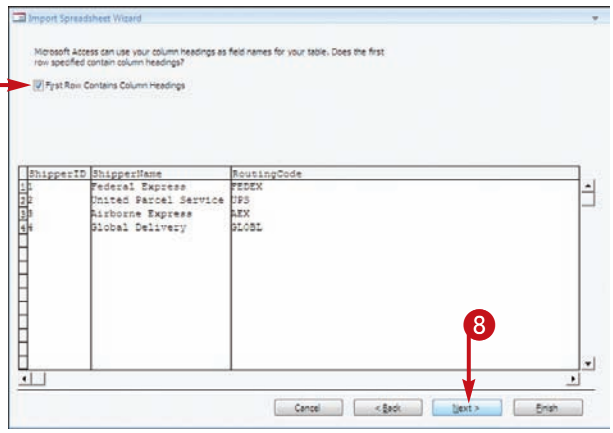
5. Click the sheet to import.

   - A preview of the data on that sheet appears.
   - You can alternatively choose from named ranges.

6. Click **Next**.

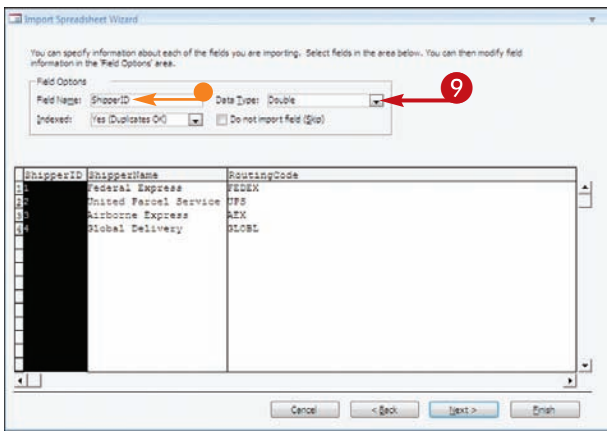
7 If the first row contains column headings, click here to mark the check box.

8 Click **Next**.



- You can change the field name for the first field in the Field Options area.

9 Click here and choose the data type that you want.



TIPS

How should I prepare the Excel worksheet before importing it?

For Excel data to import correctly into Access, it must be set up to mimic a datasheet in Access. Adhere to these rules in Excel:

Place the field names in row 1.

Remove any blank rows or any titles above the field names.

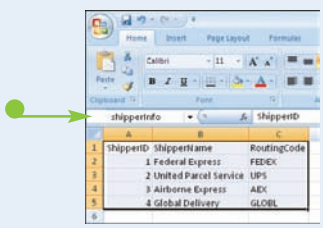
Place each record in a separate row, starting immediately below the row containing the field names.

Do not include any formulas or functions. Omit cells containing them from the range to import or convert them to values.

Can I import only part of a worksheet?

Yes. In step **5** of this section, you can choose to import from a named range if you prefer. You must set up the range in Excel first, however.

- To create a named range in Excel, select the range and then click here and type the range name.

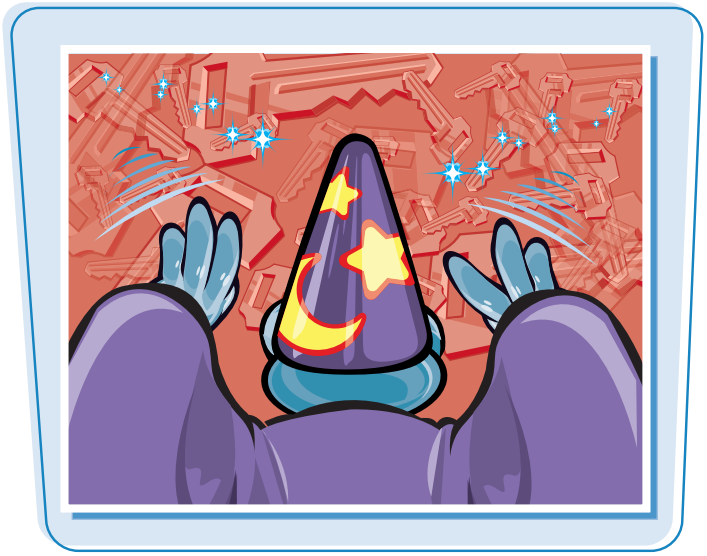


continued

Import an Excel Worksheet *(continued)*

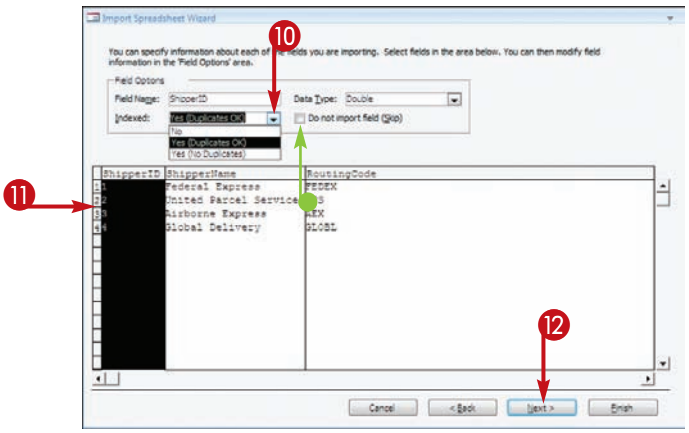
The Import Spreadsheet Wizard asks you about several setup options that you would ordinarily configure when creating a new table, such as whether fields should be indexed and whether duplicates are okay.

It also gives you the opportunity to set a primary key and to name the table.

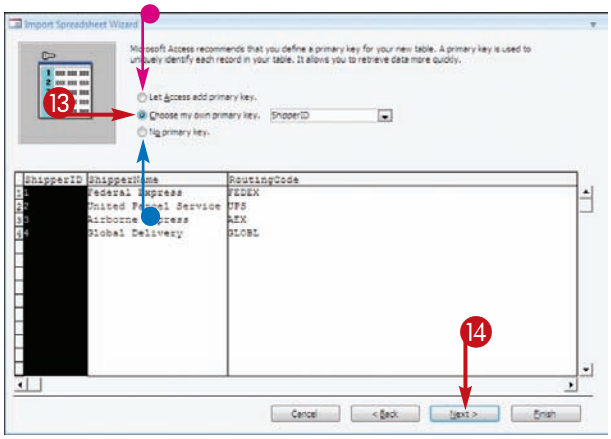


Import an Excel Worksheet *(continued)*

10. Click here and choose whether the field should be indexed and whether duplicates are okay.
    - You can exclude a field from being imported by clicking here.
11. Click the next column, and repeat steps **9** to **10**.
12. When you have set up all fields, click **Next**.



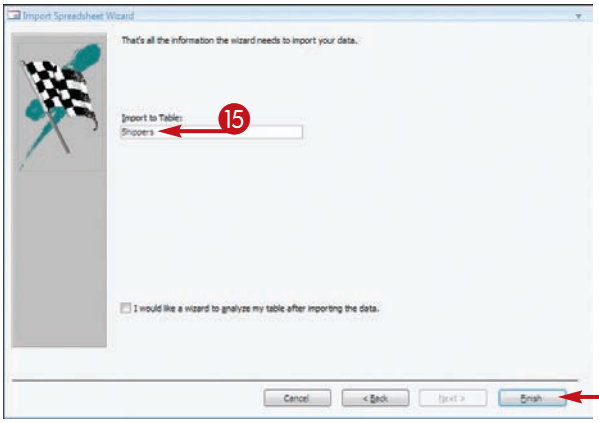
13. If the imported data already contains a field you want to use as the primary key, click here and then choose that field from the drop-down list.
    - You can also allow the wizard to create a new field to be used as a primary key by clicking here.
    - You can also decline to use a primary key in the table by clicking here.
14. Click **Next**.



15 Type the name for the table.

Note: *The default name is the name of the tab from the worksheet.*

16 Click **Finish**.

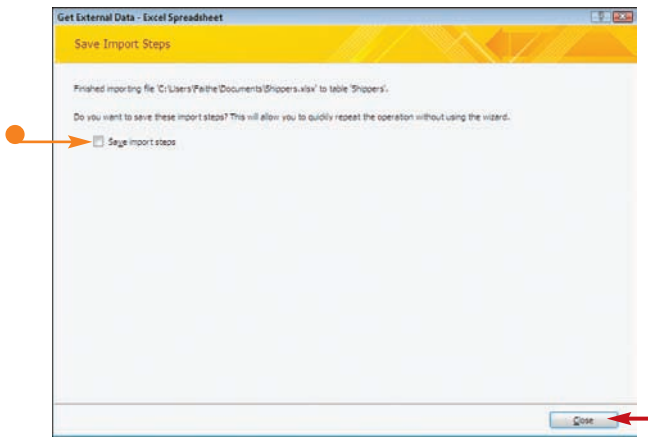


- You can save the import steps by clicking here.

Note: *You will learn more about saving import steps later in this chapter.*

17 Click **Close**.

The Excel data is imported as a new table on the Objects list.

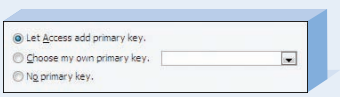


TIPS

Should I allow the wizard to create a primary key field, or not?

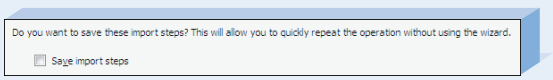
It depends on whether you already have a field in the data that contains unique entries for each record and that will always contain unique entries. If you do, make that one the primary key.

If, on the other hand, you do not have any fields that fit that description, you should allow the wizard to create one for you.



Should I save the import specifications?

If you plan on doing this same import again later, then yes. For example, perhaps you have a table that a colleague maintains in Excel, and every month you have to use it in Access. You could save the import settings to make that easier each time. An even better approach, though, would be to link to the worksheet, as covered in the next section.



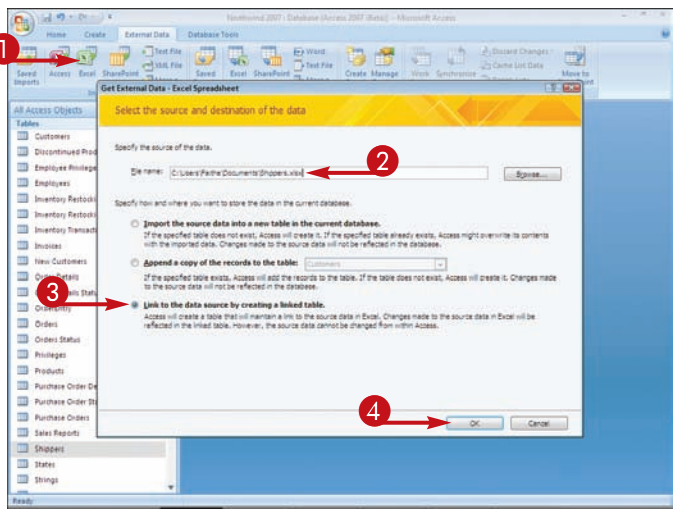
Link to an Excel Worksheet



If you frequently need to reimport the same data from Excel, consider linking to that worksheet instead of repeatedly reimporting it.

With a link, the data is always up-to-date. Each time that you open the linked worksheet in Access, Access refreshes the link to the data. That means, however, that the Excel file must always be in the expected location or an error will occur.

Link to an Excel Worksheet



1. On the External Data tab in the Import group, click **Excel**.

   The Get External Data – Excel Spreadsheet dialog box opens.

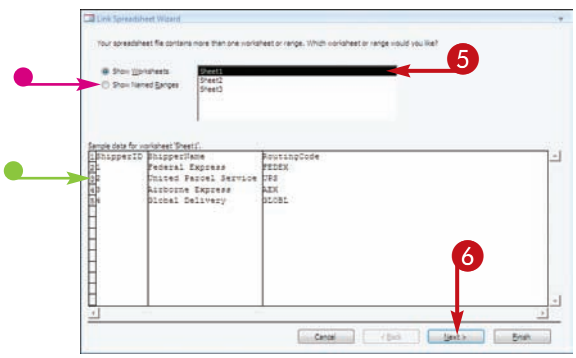
2. Type the path and filename in the File Name box.

   You can click **Browse** to browse for the file if you prefer.

3. Click **Link to the data source by creating a linked table**.

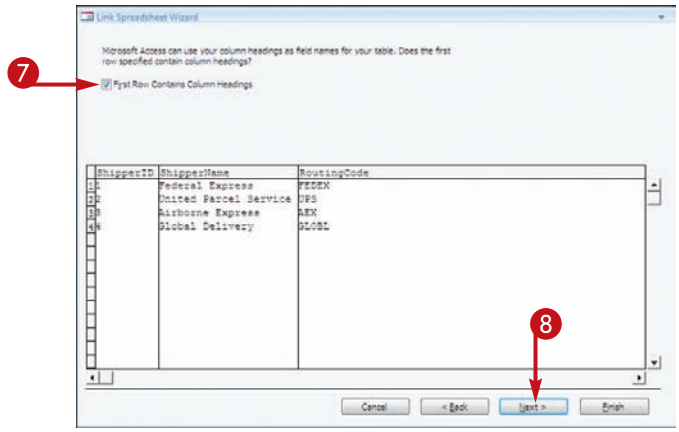
4. Click **OK**.

   The Link Spreadsheet Wizard runs.



5. Click the sheet to import.
   - A preview of the data on that sheet appears.
   - You can alternatively choose from named ranges.
6. Click **Next**.

7. If the first row contains column headings, click here to mark the check box.
8. Click **Next**.

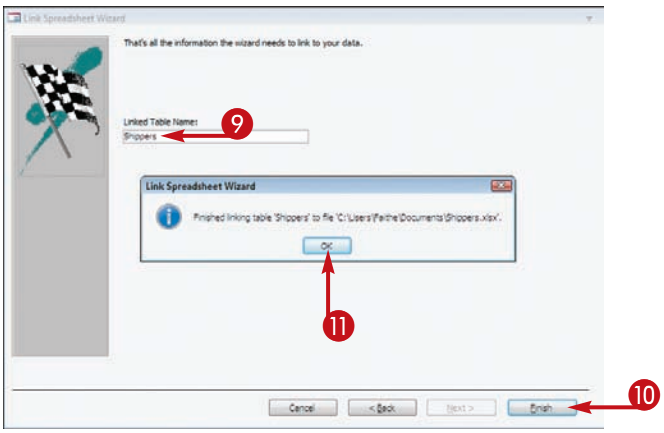


9. Type a name for the linked table.

   This will be the name that appears in the list of tables.
10. Click **Finish**.

    A confirmation box appears.
11. Click **OK**.

    The linked table appears in the All Access Objects list.



TIPS

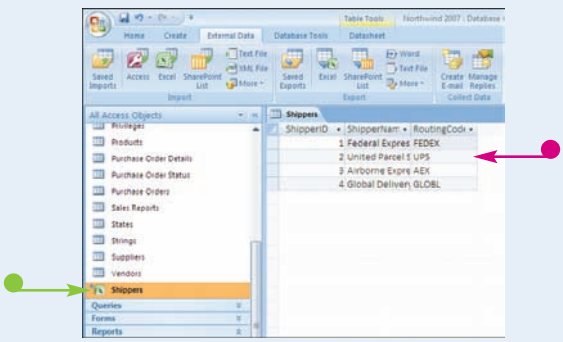
What happens if I need to move the Excel sheet later?

Use the Linked Table Manager, as described in the next section. If the table has moved and Access can no longer find it, prompts will help you locate it again.



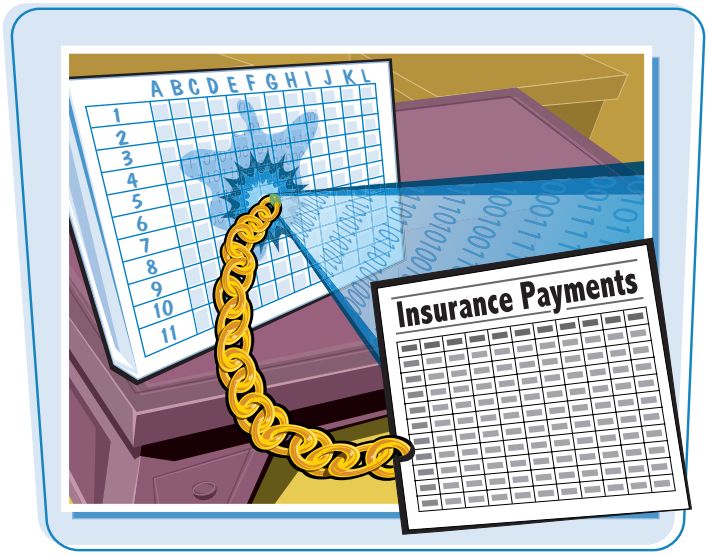
How can I tell what tables are actually linked Excel sheets?

- Excel sheets have an Excel icon next to them in the All Access Objects list.
- However, when you open the object as a datasheet, it looks like any other regular table.



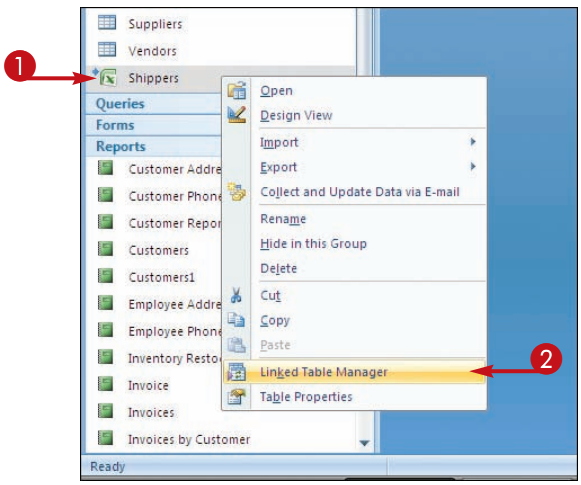
Manage Linked Tables

Linked tables are not updated automatically just by opening the database; they are updated only when you actually open the table. If you need to update all the linked tables at once, without having to open each one, you can use the Linked Table Manager to do so.



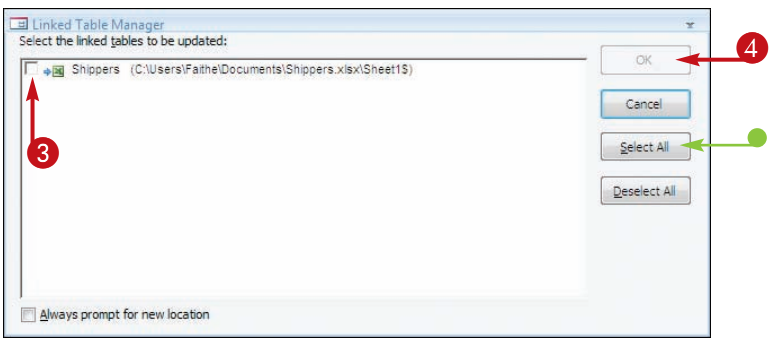
Manage Linked Tables

1. Right-click one of the linked tables.
2. Click **Linked Table Manager**.



The Linked Table Manager opens.

3. Click the check box for each linked table that you want to update.
   - You can also click **Select All**.
4. Click **OK**.

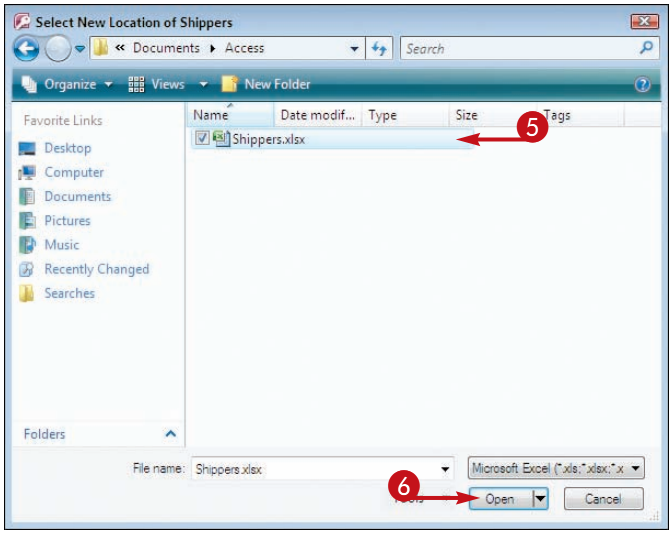


If a linked table cannot be located, a Select New Location dialog box opens.

5 Browse to the new location and select the file.

6 Click **Open**.

You may have to repeat steps **5** to **6** for additional tables.

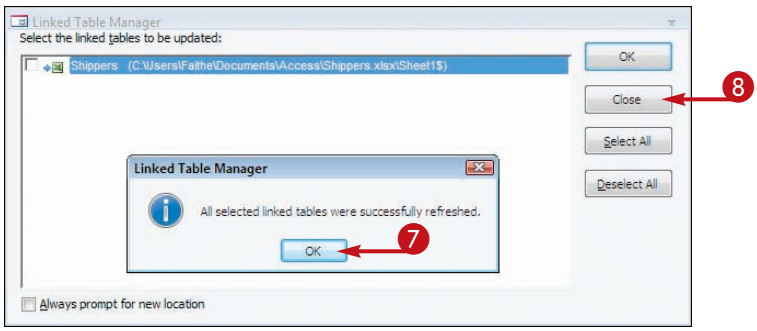


A message appears, stating that the tables were refreshed.

7 Click **OK**.

You are returned to the Linked Table Manager.

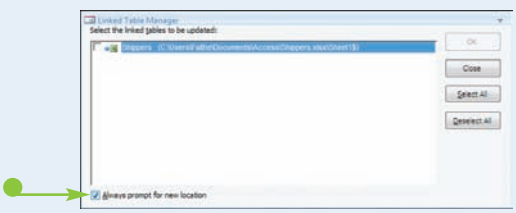
8 Click **Close**.



TIPS

How can I change the location to which a link refers even though the original location is still working?

- Mark the **Always prompt for new location** check box in the Linked Table Manager. It will then prompt you for each table's location even if the existing location is still working.



What if I get a #Num! error?

This error appears when a column contains mostly one type of value (text, date, or number) but a few entries of another type. Those other entries may not get imported correctly, and the #Num! error might appear. To minimize the instances of this error, try to clean up your data before importing, making sure that each column contains values of only one data type. Formatting the columns in the Excel file with a particular numeric type also helps.



Import a Table from Another Access Database

You can combine the data from multiple Access database files into a single database file by importing the tables from one file into another.

You can also import other objects, including queries, forms, reports, macros, and modules, but the destination database must have the needed tables/queries on which they are based.



Import a Table from Another Access Database

1. On the External Data tab in the Import group, click **Access**.

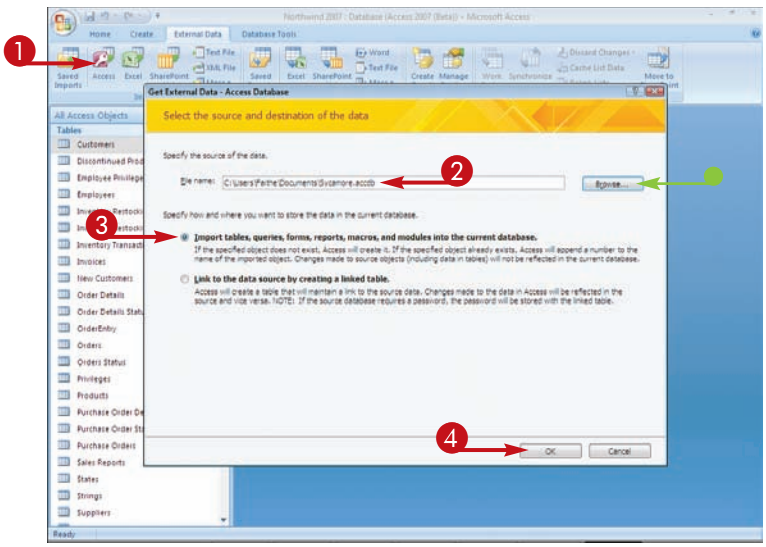
   The Get External Data – Access Database dialog box opens.

2. Type the path and filename in the File Name box.

   - You can click **Browse** to browse for the file if you prefer.

3. Click **Import tables, queries, forms, reports, macros, and modules into the current database**.

4. Click **OK**.



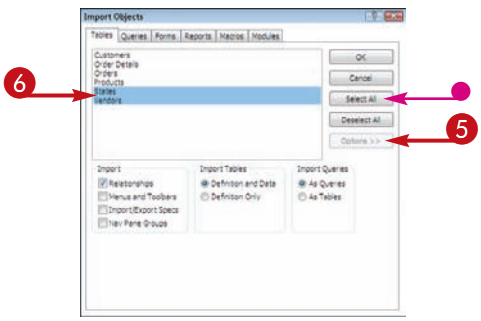
The Import Objects dialog box opens.

5. Click **Options**.

   The import options appear at the bottom of the dialog box.

6. Click the tables that you want to import.

   - You can click **Select All** to include all the tables.



7. Click the **Queries** tab.
8. Click any queries you want to import.
9. If you selected any queries, click how you want them to be imported.

Note: *See the Tips area below for more information about this.*

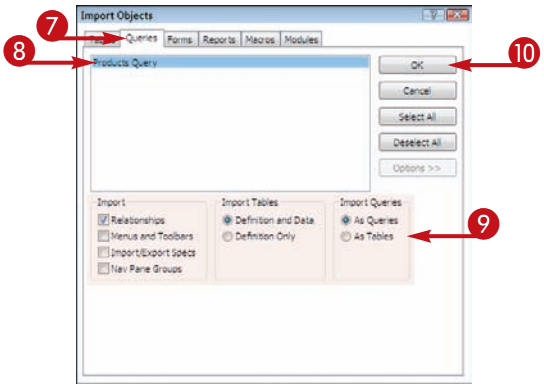
You can click any other tabs and any other objects that you want.

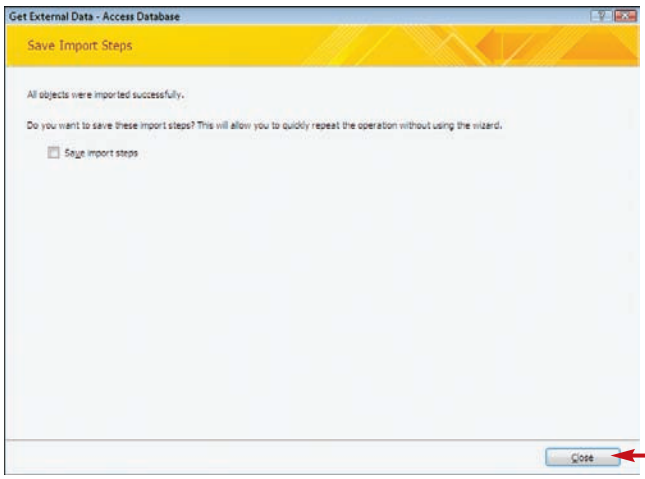
10. Click **OK**.

The Save Import Steps screen appears.

11. Click **Close**.

The objects are imported into the database.





TIPS

What is the difference between importing a query as a table versus as a query?

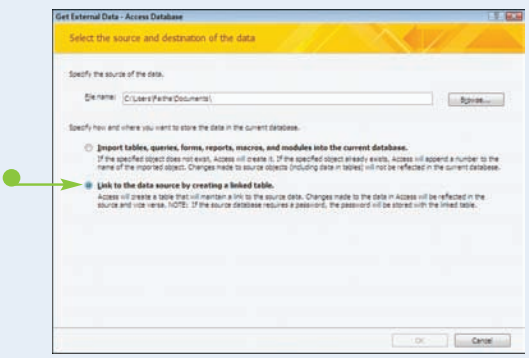
Importing a query as a query imports just the query definition. The database must have a table of the same name as the one the query uses, with compatible fields.

Importing a query as a table creates a new table with a datasheet that looks like the query's results. Any records or fields the query definition excludes are included.



Can I link to content from another Access database, like I did for Excel content earlier in the chapter?

- Yes. In the Get External Data – Access Database dialog box, choose **Link to the data source by creating a linked table**.



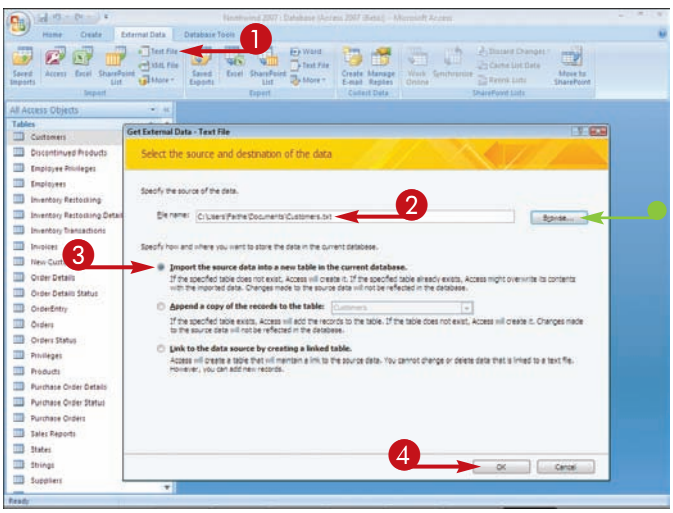
Import Data from a Delimited Text File

You can use a delimited text file to transfer database data from a database program that does not support Access as an export option.



From the other database program, export in a comma-delimited or tab-delimited format. Then import that file into Access.

Import Data from a Delimited Text File

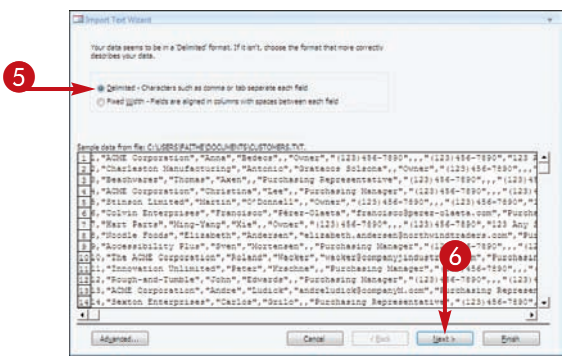


1. On the External Data tab in the Import group, click **Text File**.
2. Type the path and filename in the File Name box.
   - You can click **Browse** to browse for the file if you prefer.
3. Click **Import the source data into a new table in the current database**.

Note: *Alternatively, you can choose to link to the data source or append to an existing table.*

4. Click **OK**.

The Import Text Wizard runs.

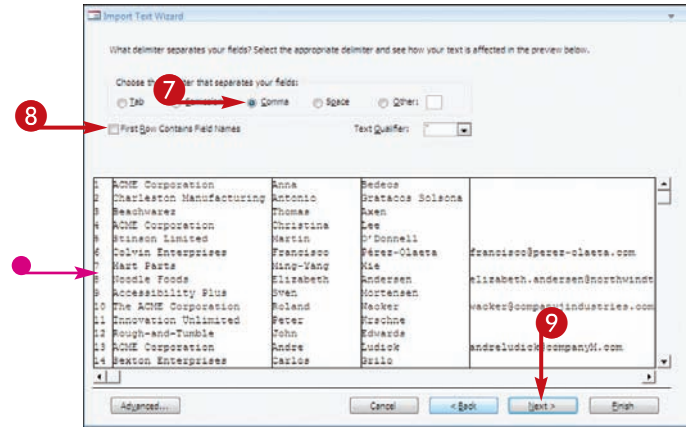


5. Click **Delimited.**

Note: *Fixed-width data files are rare; a fixed-width data file includes extra spaces after some entries so that the width of a field is defined by spaces rather than by a delimited character.*

6. Click **Next**.

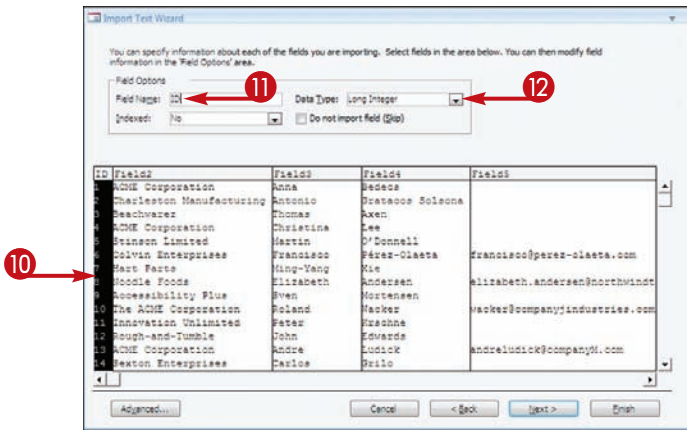
7. Click the delimiter character used in the file.
   - You will know that you have chosen the correct delimiter when the data appears in orderly rows and columns in the sample area.
8. Click here if the first row contains the field names.
9. Click **Next**.



10. Click a field to select it.
11. Change the field name if needed.

Note: *If the first row does not contain field names, field names are generic and should be changed in step* **11**.

12. Click here and change the data type if needed.



TIPS

What is a delimiter?

A *delimiter* is the character that separates the field entries for each record. The most common delimiters are tabs and commas. Each record is separated by an Enter (Return).

An alternative that is sometimes (but rarely) used in database text files is fixed-width. For example, suppose a certain field is 20 characters wide. For each entry that is fewer that 20 characters, extra spaces are inserted between that field and the next one for that record.



How do I get data into a delimited text file from another database program?

That depends on the program. Nearly all database programs have some type of export feature, though, that exports in a variety of formats. These almost always include tab-delimited and comma-delimited. Neither one is better than the other necessarily; they both work well.



To find out the exact steps for exporting data from another database program, look up "Exporting" in that program's Help system.

continued

Import Data from a Delimited Text File *(continued)*



Except for the beginning part of the process, the process of importing from a text file is nearly identical to that of importing from an Excel file.

You can specify a primary key, choose which fields should be indexed, and even choose to skip certain fields, just like with an Excel file import.

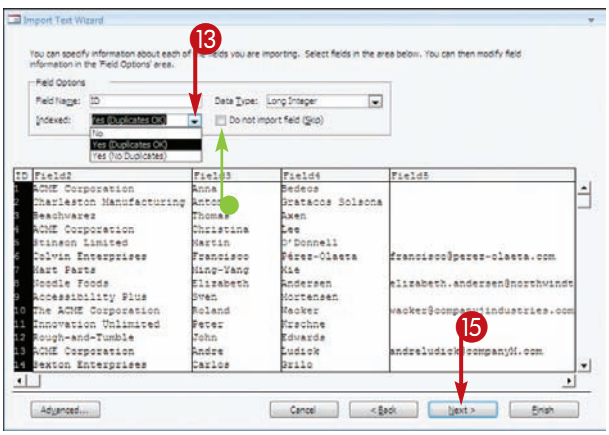
Import Data from a Delimited Text File *(continued)*

13. Click here and change the indexing setting if needed.

***Note:** If you choose **Yes (No Duplicates)**, make sure that each record has a unique entry for this field, or an error will occur at import.*

- Click here to skip a field.

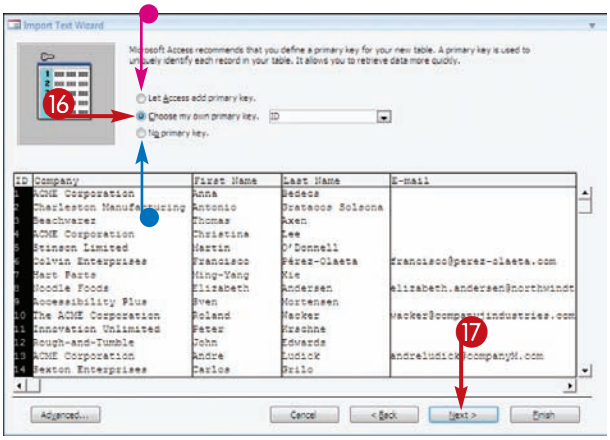
14. Repeat steps **10** to **13** for each field.
15. Click **Next**.



16. If the imported data already contains a field that you want to use as the primary key, click here and then choose that field from the drop-down list.

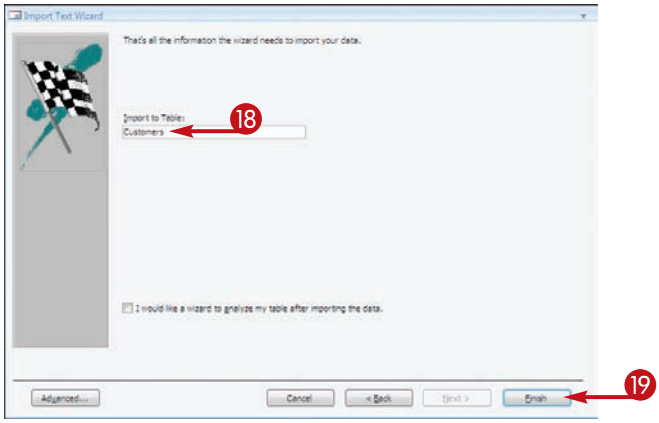
- You can also allow the wizard to create a new field to be used as a primary key by clicking here.
- You can also decline to use a primary key in the table by clicking here.

17. Click **Next**.



18 Type the name to use for the imported table.

19 Click **Finish**.

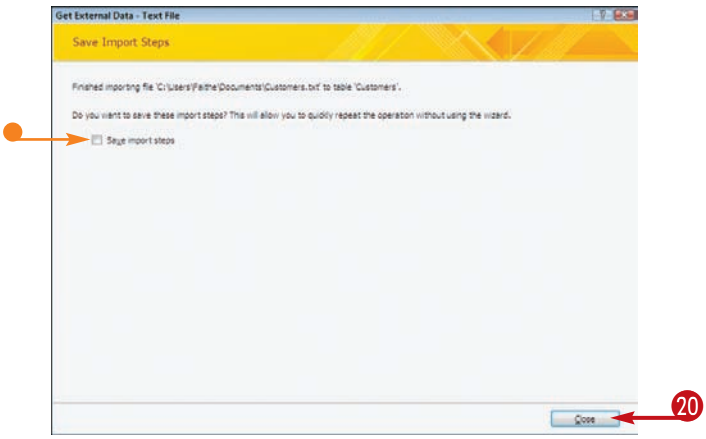


The Save Import Steps screen appears.

- You can mark the **Save import steps** check box and save the import, as described later in the chapter in the section "Save Import or Export Specifications."

20 Click **Close**.

The data is imported into a new table with the name that you specified.



TIPS

How can I append records to an existing table from a plain text file?

- On the initial Get External Data – Text File screen, choose **Append a copy of the records to the table** and then select the table.

  For this to work, the table must have the same fields, with the same field types, as the data coming in.



Do I have to specify field names in order to import if the data file does not already have field names in the first row?

No, but generic field names will be used (Field1, Field2) in the imported table. You can then use Table Design view to modify the field names.

Make sure that you change the field names to ones that are more meaningful before you start using the imported table as the basis for other objects such as queries, forms, and reports.



Export Data to Excel

In addition to importing data from Excel, you can also export it from an Access table into Excel format.



As you are performing the export, you can choose to export in any of a variety of Excel formats, including both Excel 2007 and earlier versions.

Export Data to Excel

1. In Datasheet view on the External Data tab, in the Export group, click **Excel**.

   The Export – Excel Spreadsheet dialog box opens.

2. Type the path and filename to which to export.

   - You can click **Browse** to locate a folder if needed.

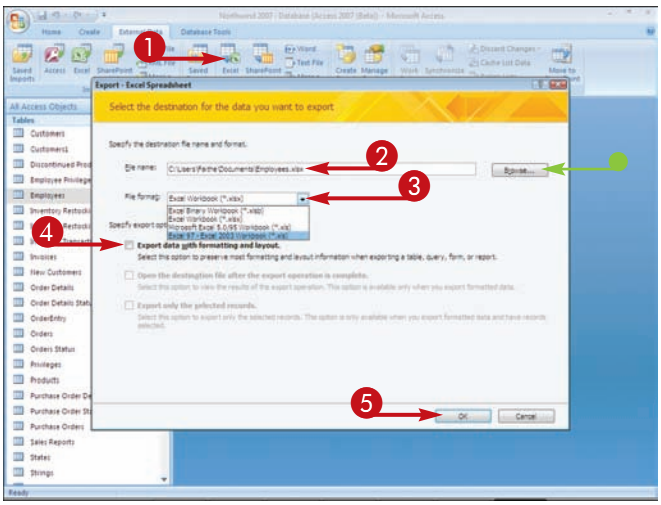
3. Click here and select a file format.

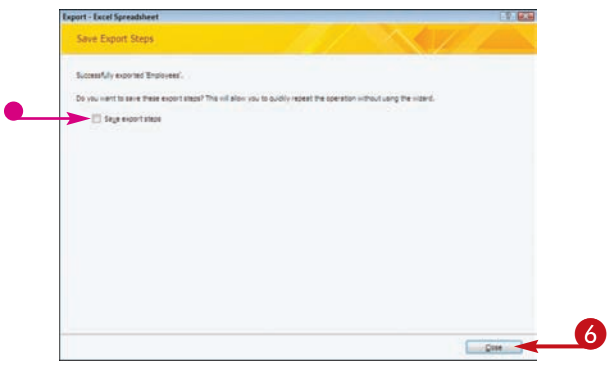
4. You can click here to export formatting and layout as well as data.

5. Click **OK**.

   - You can optionally click here to save these export steps for later use.

6. Click **Close**.





Export Data as HTML

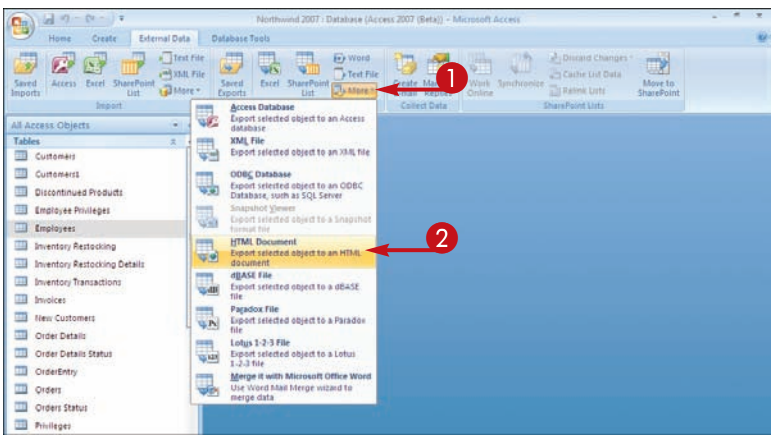
One way to share data with others is to export it to a Web page — that is, to HTML format.



There are more complex ways of making Access data available online, such as through data access pages, but for simple sharing where the data is fixed, an HTML page is the easiest way to go.

Export Data as HTML

1. In Datasheet view on the External Data tab, in the Export group, click **More**.
2. Click **HTML Document**.

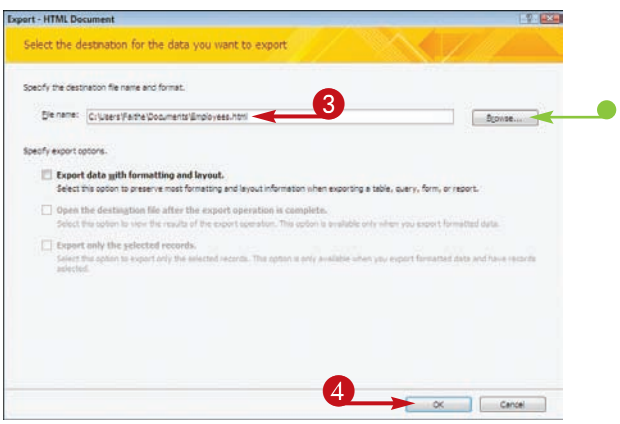


The Export – HTML Document dialog box opens.

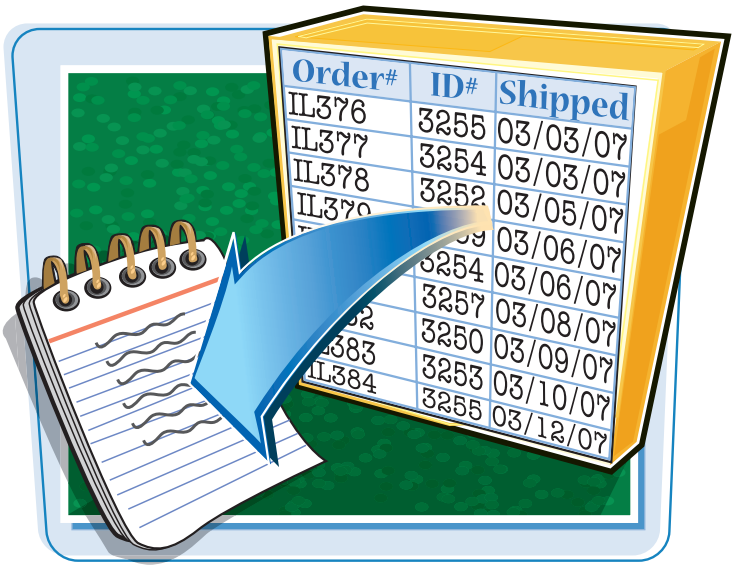
3. Type the path and filename to which to export.
   - You can click **Browse** to locate a folder if needed.
4. Click **OK**.

The Save Export Steps dialog box opens.

5. Click **Close**.



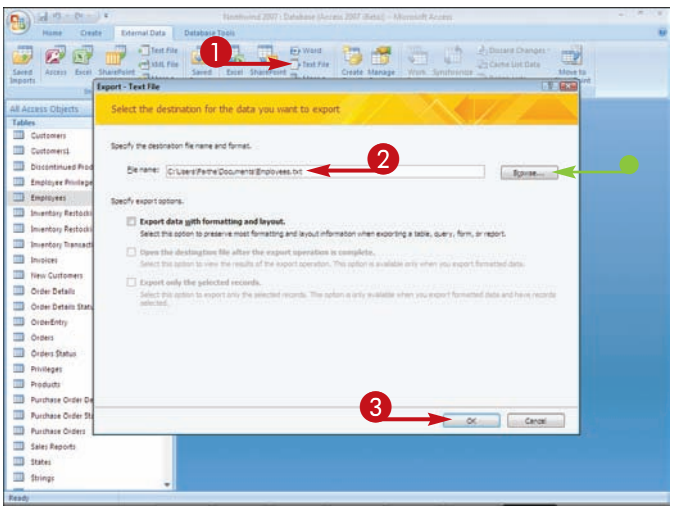
Export Data to a Plain Text File



When you need to import data from Access into some other database program that does not accept Excel or any of the other formats available to you, a plain text export may be your only option.

Plain text exports can be delimited by characters such as commas or tabs or, less frequently, can be set to be fixed width.

Export Data to a Plain Text File



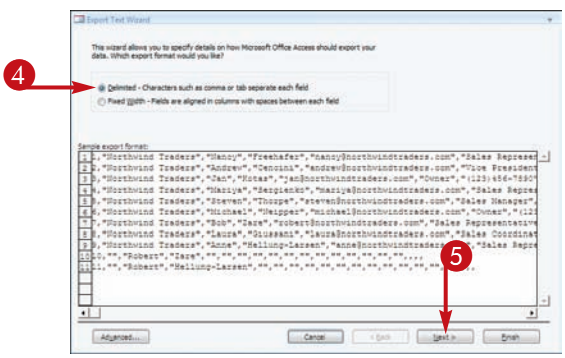
1. In Datasheet view on the External Data tab, in the Export group, click **Text File**.

   The Export – Text File dialog box opens.

2. Type the path and filename to which to export.

   - You can click **Browse** to locate a folder if needed.

3. Click **OK**.



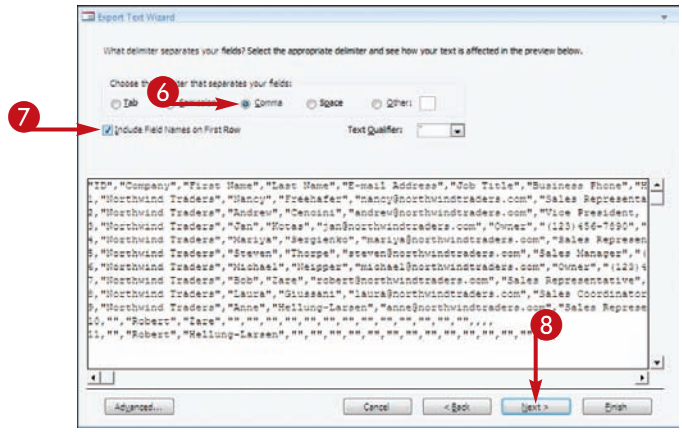
The Export Text Wizard runs.

4. Click **Delimited**.

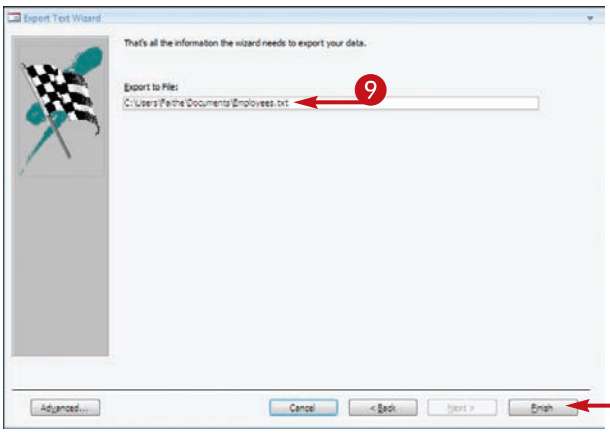
***Note:** It is rare to need to do a Fixed Width export; most database programs take delimited data.*

5. Click **Next**.

6. Click the delimiter character that you want to use.
7. Click here if you want to include the field names on the first row.
8. Click **Next**.



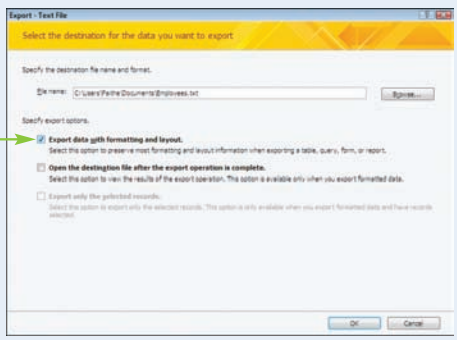
9. Confirm the path and filename to which you want to export.
10. Click **Finish**.
11. In the Save Export Steps dialog box, click **Close**.



TIPS

When should I use the Export Data with Formatting and Layout feature?

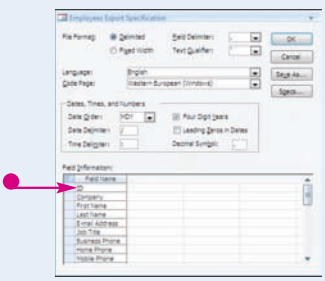
- Use this when you want to include helper characters in certain types of data, such as parentheses and dashes in phone numbers or dashes in a nine-digit zip code.



How can I change field names as I export?

After step **4** in this section, click **Advanced**, opening the Export Specification dialog box. From here you can change field names, change the delimiter character, and more.

- To change one of the field names, double-click it in the Field Information area and type a new name.



Save Import or Export Specifications

The last step of every import or export process is a dialog box in which you can optionally mark a check box to save the import or export steps.

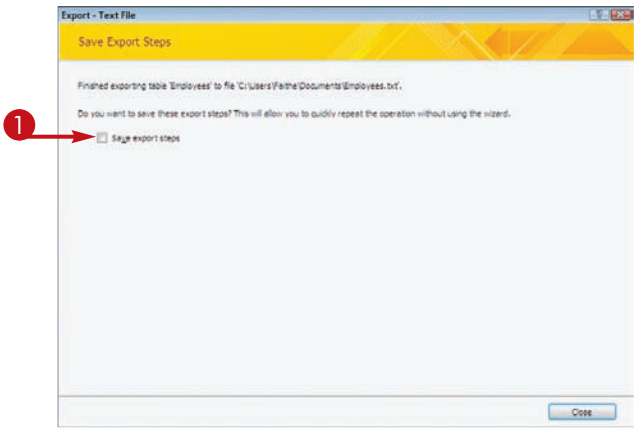
Here we will look at what happens when you mark that check box and where the settings are stored.



Save Import or Export Specifications

1. On the Save Export (or Import) Steps screen of an import or export operation, click here to mark the check box.

   If you are doing an import, the check box will be **Save import steps** instead.

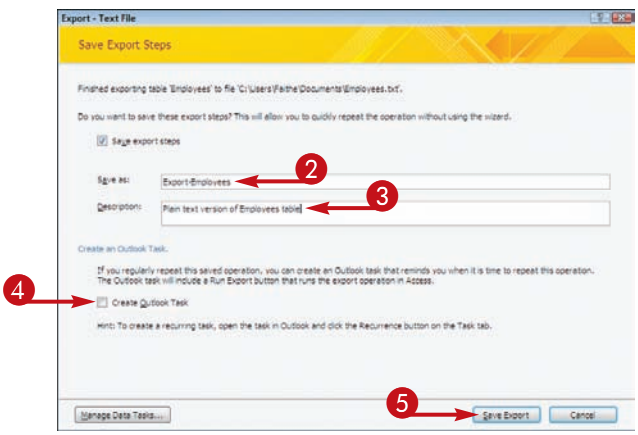


   Additional text boxes appear in the dialog box.

2. Click here and type a name for the saved settings.
3. You can click here and type a description.
4. You can click here to create an Outlook task to remind you of this activity.
5. Click **Save Export** (or **Save Import**).

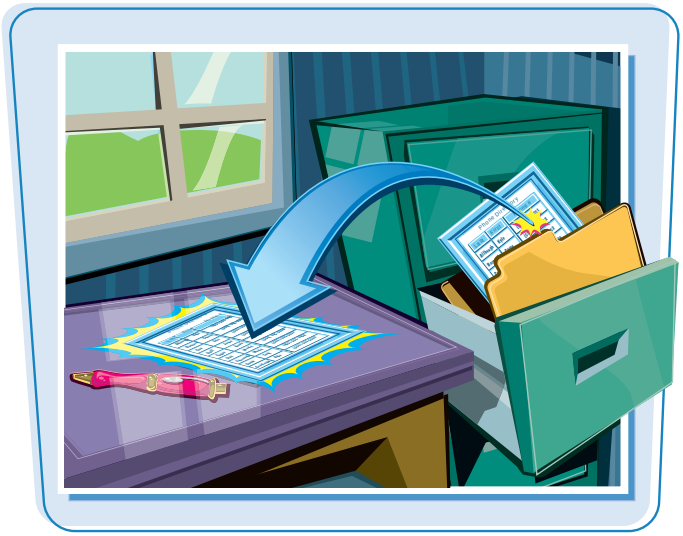
   The operation is saved.

   If you chose to create an Outlook task, the task opens in Outlook.



Using Saved Import or Export Specifications

After you have saved an import or export specification, you can easily recall it.



Saved settings perform an import or export using the same source and the same destination, with all the same settings, file formats, and other specifications.

Using Saved Import or Export Specifications

1. On the External Data tab, click **Saved Imports**.

   OR

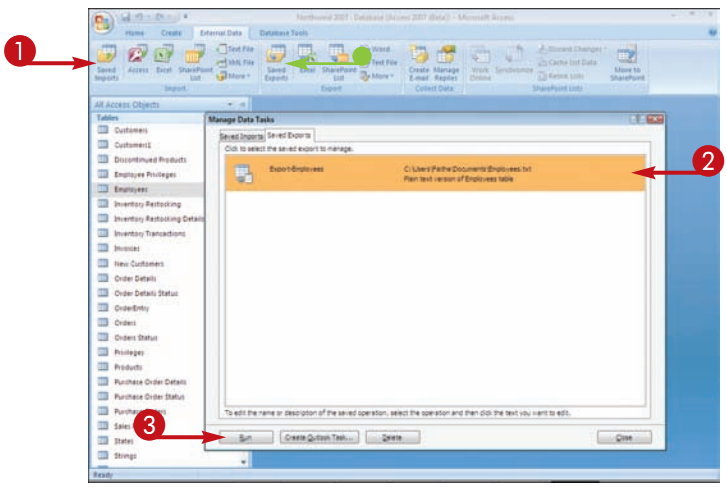
   - Click **Saved Exports**.

   The Manage Data Tasks dialog box opens.

2. Click the export or import that you want to use.

3. Click **Run**.

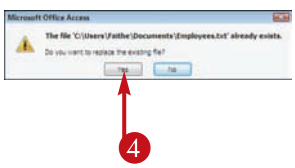
   The export or import is run.



   If the file still exists from a previous export or import, a warning appears.

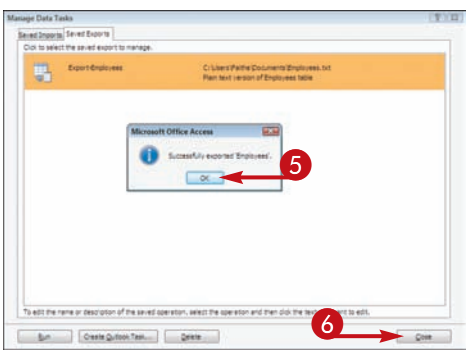
4. Click **Yes** to replace the previously exported or imported file.

   A message appears, saying that the file has been exported or imported.



5. Click **OK**.

6. Click **Close**.

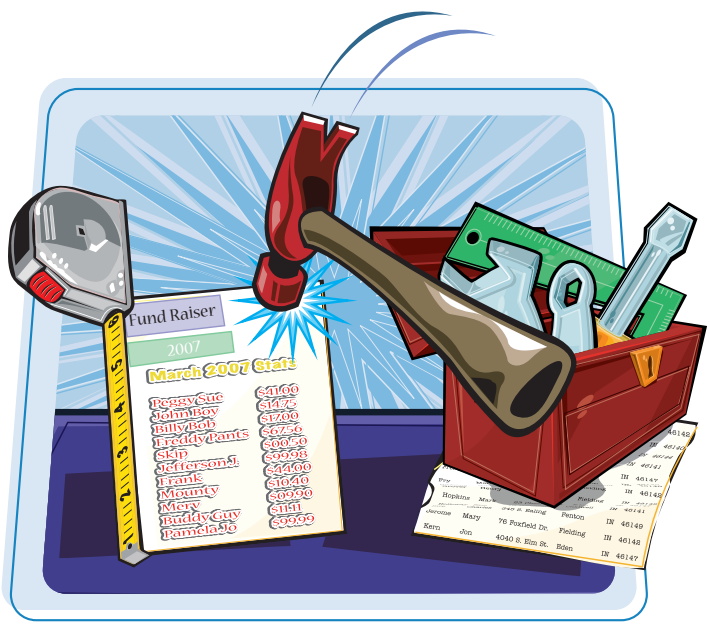


Note: *The saved settings are saved in the Documents folder for the current user.*

CHAPTER

15

Maintaining a Database



Access provides several tools for performing maintenance and administrative functions on a database. You can switch between file formats and back up, repair, and compact a database.

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Set a Trusted Location

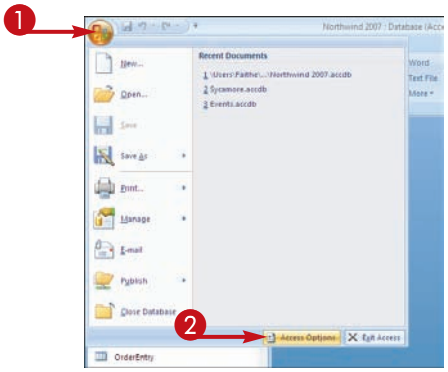


As you learned in Chapter 1, when you open a file from an untrusted location, security warnings appear.

One way to avoid this problem is to save your Access database files in a trusted location. By default, your Documents (or My Documents) folder is trusted; you can also set up other trusted locations.

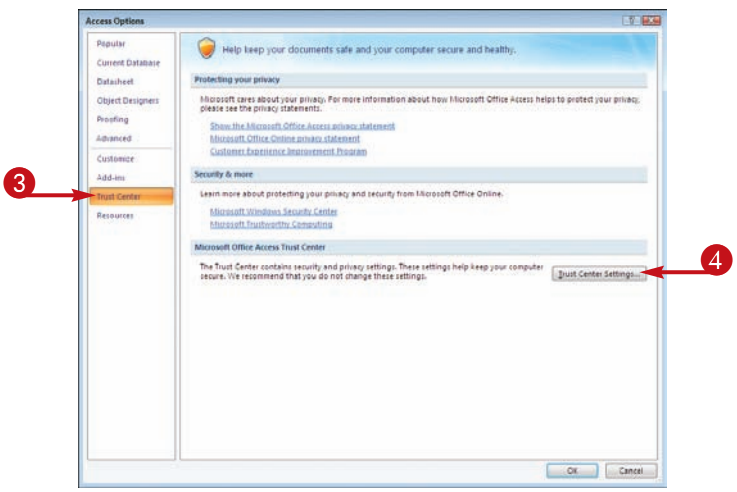
Set a Trusted Location

1. Click .
2. Click **Access Options**.



The Access Options dialog box appears.

3. Click **Trust Center**.
4. Click **Trust Center Settings**.



The Trust Center dialog box opens.

5. Click **Trusted Locations**.
6. Click **Add new location**.

   The Microsoft Office Trusted Location dialog box opens.

7. Type the path you want to set to be trusted.

- You can also click **Browse** to locate the path.
- You can click here to also trust subfolders of this location.

8. Click **OK**.

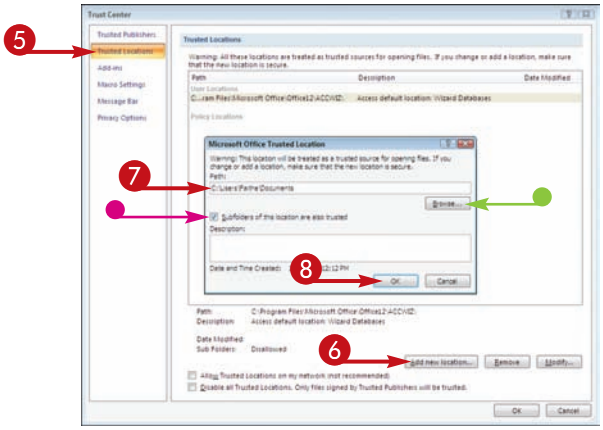
   The location is added to the list.

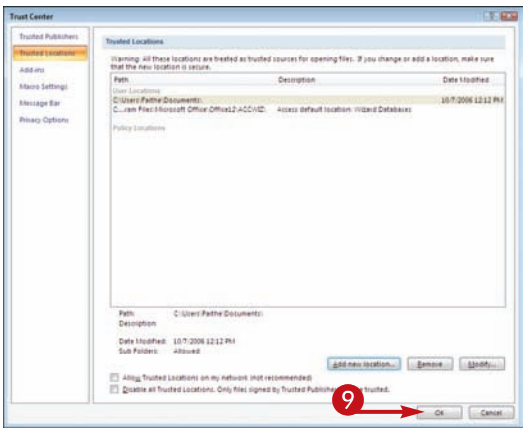
9. Click **OK**.

   The Trust Center dialog box closes, and you are returned to the Access Options dialog box.

10. Click **OK**.

    The Access Options dialog box closes.





TIPS

What is the Allow Trusted Locations on My Network option for?

- This option enables you to set up trusted locations that point to shared folders on your LAN. The reason it is marked "not recommended" is that you probably do not have control over what others put in those folders.

What is the Disable All Trusted Locations option for?

- This option temporarily turns off all location-based trusting. It is quicker and easier than removing each trusted location from the list and then re-adding them to the list again later.



Save in a Previous Version Format

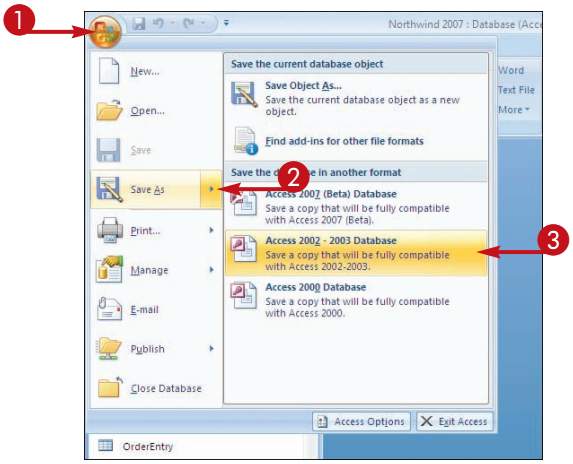


Access 2007's file format is not backward-compatible with earlier versions of Access. Therefore, if you need to share a data file with someone who uses an earlier version, you must save it in that earlier format.

If you will be sharing the file on an ongoing basis, you must continue using it in that format.

Save in a Previous Version Format

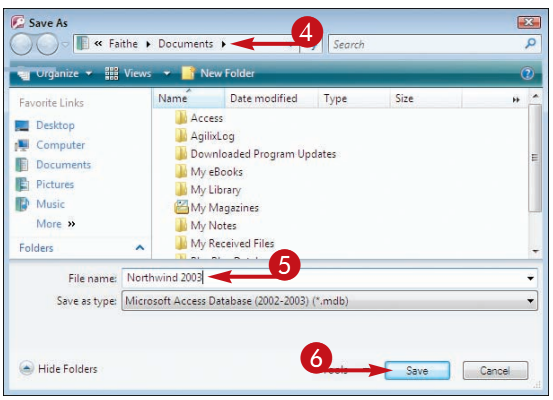
1. Click .
2. Click the arrow to the right of **Save As**.
3. Click the older format that you want.



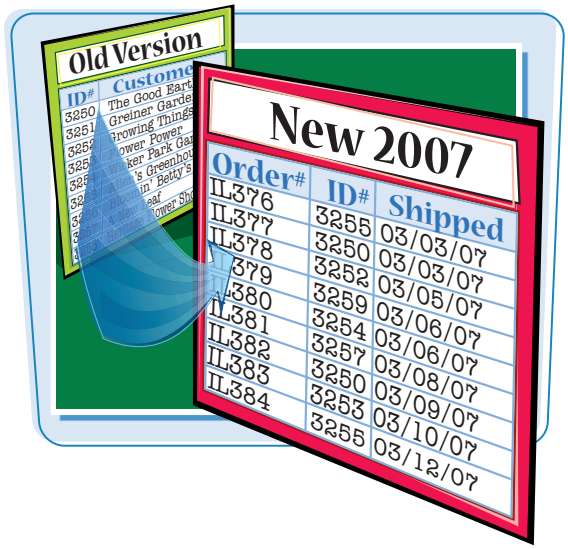
The Save As dialog box opens.

4. If needed, choose a different save location.
5. Type a filename here.
6. Click **Save**.

The file is saved to the location that you specified.



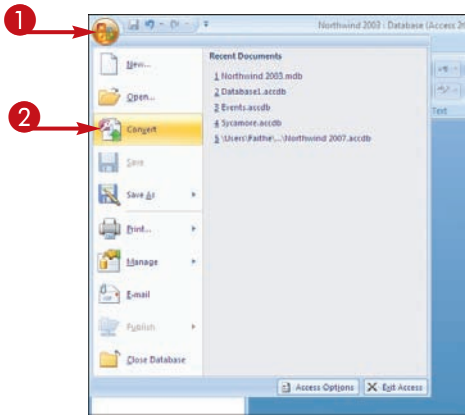
Convert to the Access 2007 Format



If you have databases created in previous versions of Access, you can choose to update them to Access 2007 format. Doing so has several advantages, including the ability to use multivalued fields and other 2007-only features.

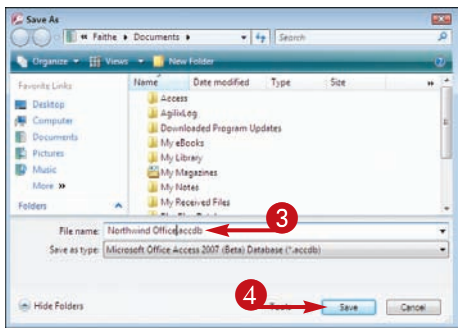
Convert to the Access 2007 Format

1. With the database open, click .
2. **Convert**.



The Save As dialog box opens.

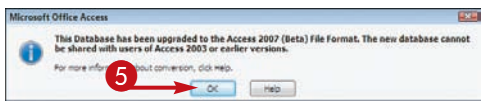
3. Type a different filename if needed.
4. Click **Save**.



A confirmation box appears.

5. Click **OK**.

The database file remains open but is now in Access 2007 format.



Back Up a Database

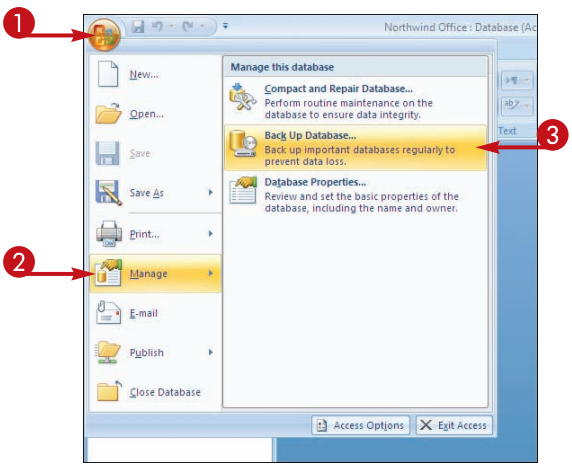
You will probably want to back up your database files periodically to ensure that your data is safe in the event of a system crash or file-corruption problem.

Backing up a database is similar to saving a copy of it; the main difference is that by default the current date is appended to the filename.



Back Up a Database

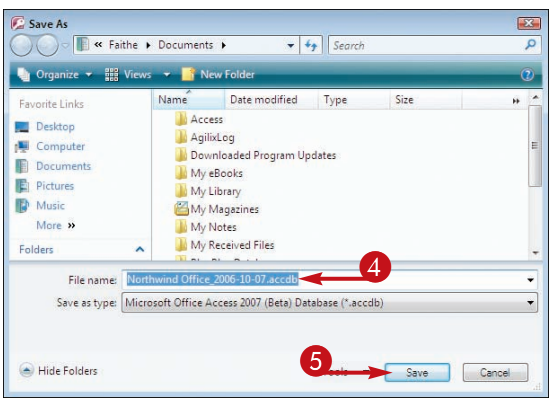
1. With the database open, click .
2. Click **Manage**.
3. Click **Back Up Database**.



The Save As dialog box opens.

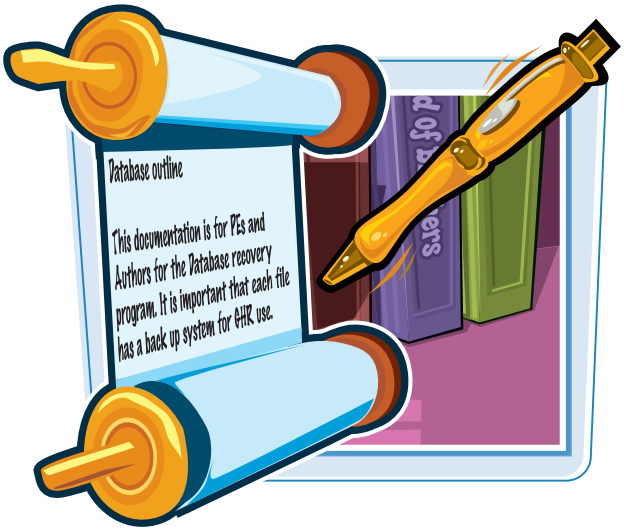
4. Change the filename if needed.
5. Click **Save**.

The backup is saved.



Document a Database

Often a database designer is called on to create notes that explain to other designers the structure of his or her database. Access can automatically generate this documentation and place it in a report.



Document a Database

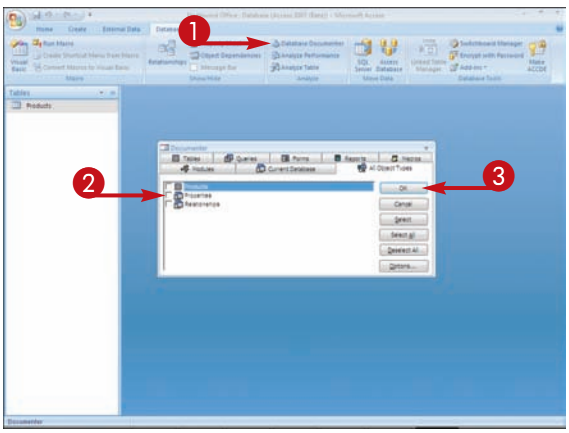
1. On the Database Tools tab, click **Database Documenter**.

   The Documenter dialog box appears.

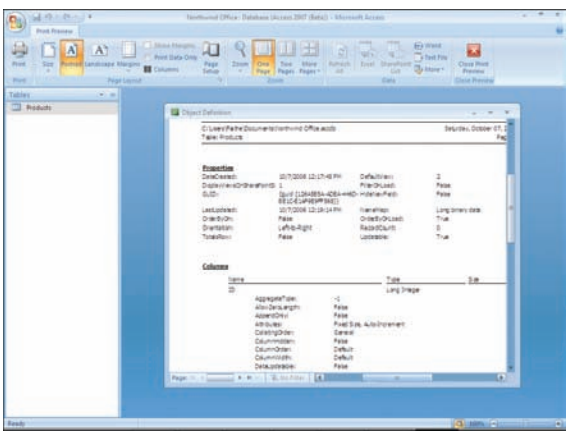
2. Click check boxes next to each object that you want to include in the documentation.

Note: *You can include relationships and properties from the Current Database tab.*

3. Click **OK**.



The report appears in Print Preview. From here you can save it and print it.



Compact and Repair a Database

Compacting a database reduces the file size by eliminating wasted blank space. Repairing a database checks it for storage errors and corrects any that it finds.

You can optionally set up the database to compact itself automatically each time that you close it.

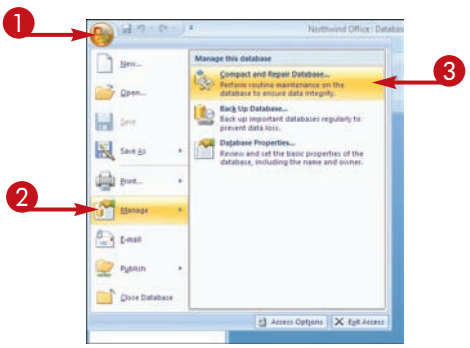
Compacting and repairing are actually two separate things, but they are done using the same command.



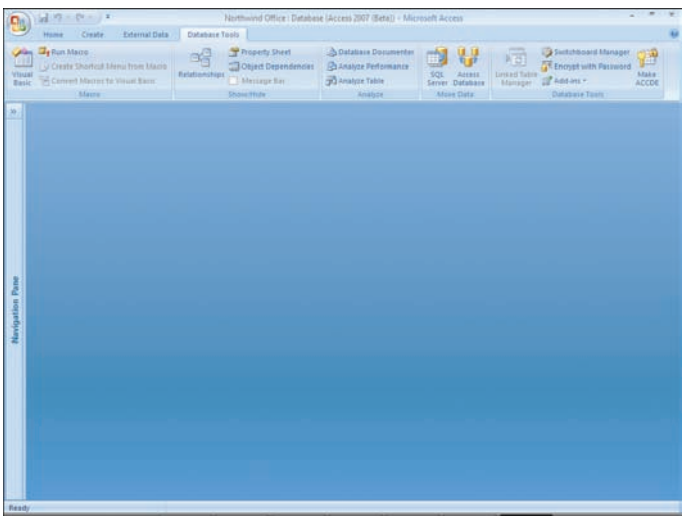
Compact and Repair a Database

COMPACT AND REPAIR

1. With the database open, click .
2. Click **Manage**.
3. Click **Compact and Repair Database**.

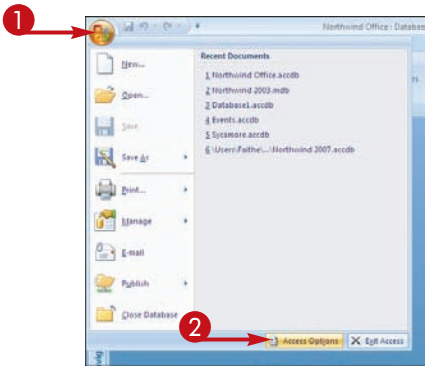


The file is compacted and repaired. No additional prompts appear.



AUTOMATICALLY COMPACT ON CLOSE

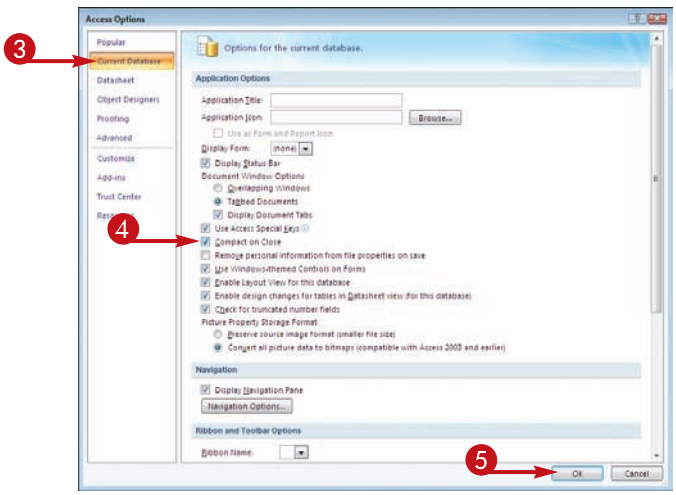
1. Click .
2. Click **Access Options**.



The Access Options dialog box opens.

3. Click **Current Database**.
4. Click **Compact on Close**.
5. Click **OK**.

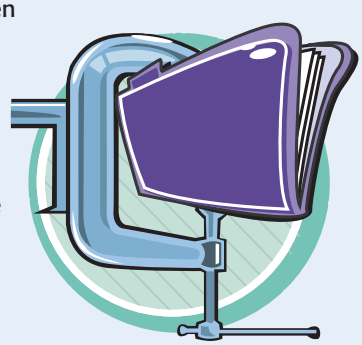
The database will now be automatically compacted whenever you close it.



TIPS

What does compacting do?

Compacting a database removes any blank space in it so that it takes up less space on disk. When you delete records, for example, the space that they occupied in the database remains as blank space until you compact.

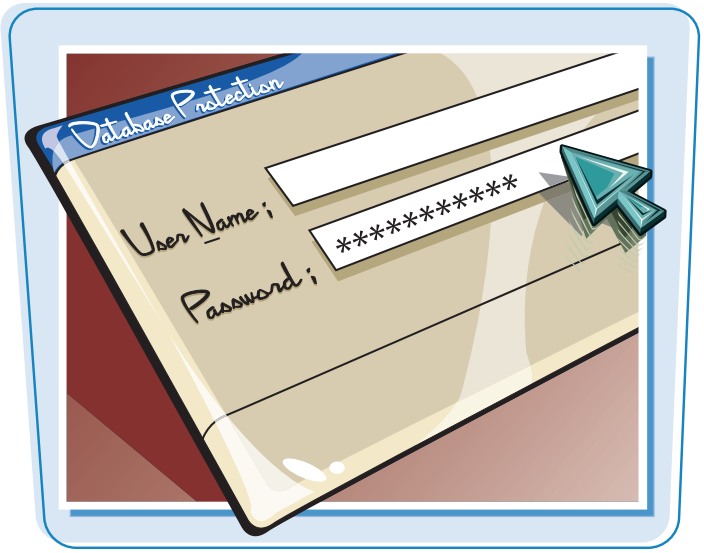


What does repairing do?

Repairing fixes any logical or linkage problems in the database — anything that may cause the database to not open properly or any of its objects not to perform as expected. Periodic repairing of a database file can ensure that small problems do not escalate into large ones.



Password-Protect a Database



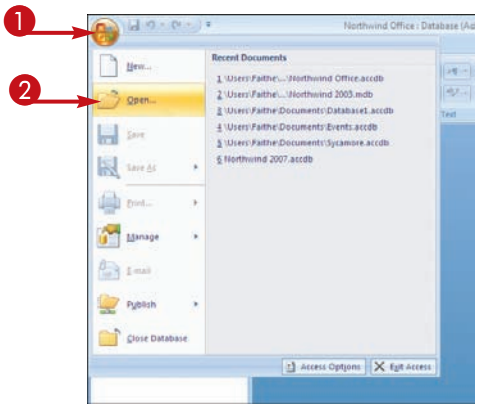
You can assign a password to a database so that only authorized users can open it.

Before you can set or change a password for the database, however, you must open it for exclusive use. This prevents others from using the database at the same time you are trying to put the password on it.

Password-Protect a Database

OPEN A DATABASE FOR EXCLUSIVE USE

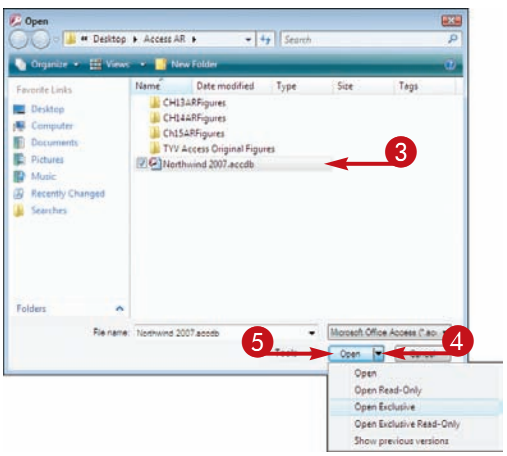
1. With the database closed, click .
2. Click **Open**.



The Open dialog box appears.

3. Click the file that you want to open.
4. Click here and click **Open Exclusive**.
5. Click **Open**.

The database opens for exclusive use.

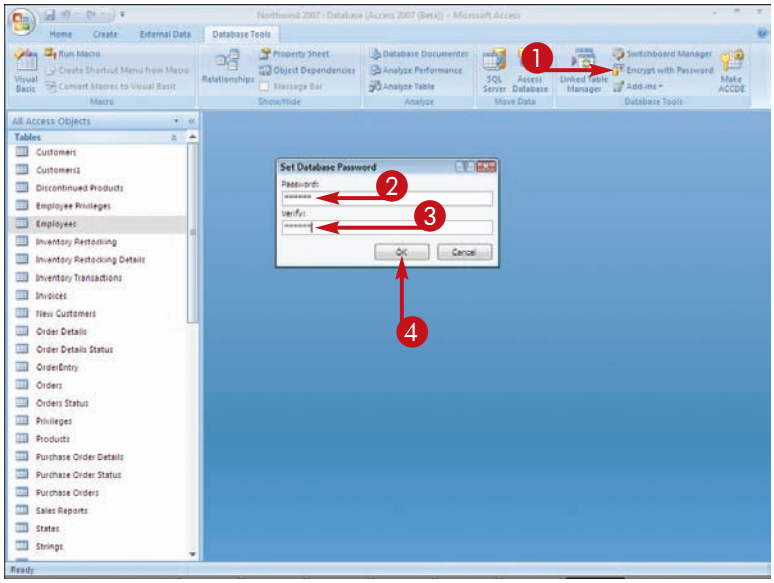


PASSWORD-PROTECT THE DATABASE

1. On the Database Tools tab, click **Encrypt with Password**.

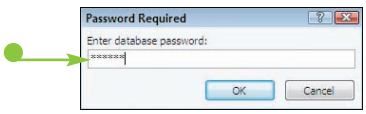
   The Set Database Password dialog box opens.

2. Type the password to use.
3. Click here and type the same password again.
4. Click **OK**.



The file is now password-protected.

- The next time that you open the file, you will be prompted for a password.



TIPS

How does password protection actually work?

The password actually encrypts the entire database, so it cannot be browsed from outside of Access. That is good because then nobody can bypass Access's password protection to hack into the file with an editing utility.



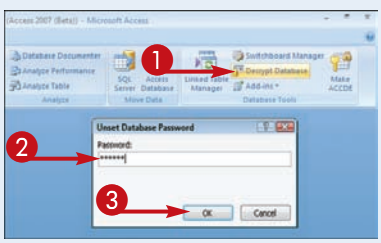
How do I remove a password?

1. On the Database Tools tab, click **Decrypt Database**.

   The Unset Database Password dialog box opens.

2. Type the password.
3. Click **OK**.

   You cannot unset the password if you do not know it.



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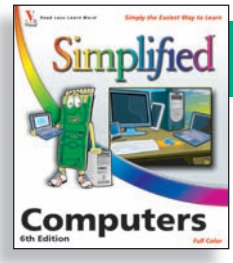
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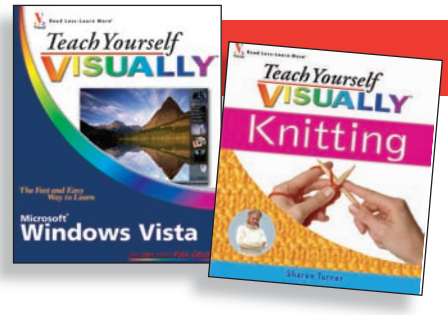
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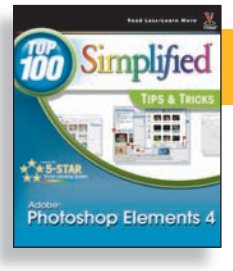
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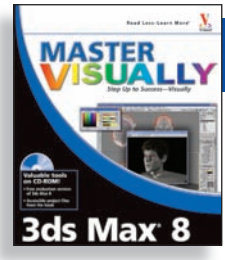
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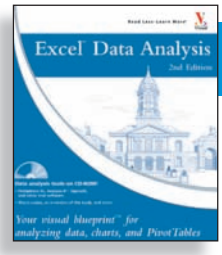
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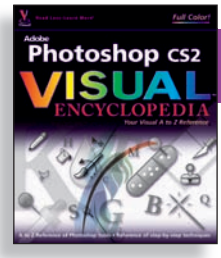
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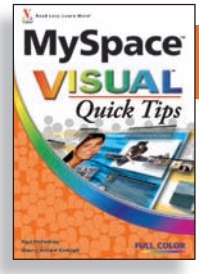
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