Sorting, Searching, Filtering, and Printing

I n this chapter we'll look at ways to sort (alphabetize), search for, replace, filter, and print data. These operations are available in both datasheet view and form view, although you may prefer to experiment with them from datasheet view where the effects are most obvious.

Sorting (Alphabetizing) Your Data

Sorting data simply means to put it into some meaningful order. For example, we often sort lists and address books alphabetically to make it easy to find information. When you're working with paper, sorting is a tedious and boring process. But with Access, all it takes is a few mouse clicks.

Quick and Easy Sorting

Here's how to do a quick, simple sort based on any field in your table (except a Hyperlink, Memo or OLE Object field):

1. Open your table, query, or form in datasheet view or form view (as appropriate).
2. Click on the field on which you want to base the sort. For example, to put employee names into alphabetical order, click on the LastName column selector (in datasheet view) or the LastName field (in form view).

3. Do one of the following:

- **To sort records in ascending order** (smallest-to-largest or A to Z), click on the Sort Ascending toolbar button (shown at left) or choose Records ➤ Sort ➤ Sort Ascending. Or right-click on the column selector (in datasheet view) or the current field (in form view) and choose Sort Ascending from the shortcut menu.
- **To sort records in descending order** (largest-to-smallest or Z to A), click on the Sort Descending toolbar button (shown at left) or choose Records ➤ Sort ➤ Sort Descending. Or right-click on the column selector (in datasheet view) or the current field (in form view), and choose Sort Descending from the shortcut menu.

In datasheet view, you can easily verify the results by reading down the column that you based the sort on (see Figure 9.1). The results of the sort won't be so apparent in form view because you can see only one record at a time. But if you scroll through the records, you'll see that you're now scrolling though them in a sorted order. (If you're viewing a form, you can switch from form view to datasheet view to verify the sort.)

FIGURE 9.1

The original Employees table and the sorted Employees table shown in datasheet view. We changed the sample data that Access provides.

Last Names in original order

Employee ID	First Name	Last Name
1	Anita	Lift
2	Andrew	Van Noslo
3	Emily	Niktog
4	Albert	Niktog
5	Doris	Ajar
6	Lane	Clozure
7	Joseph	Swipple
8	Helen	Wheels
(AutoNumber)		

Last Names in sorted (alphabetical) order

Employee ID	First Name	Last Name
5	Doris	Ajar
6	Lane	Clozure
1	Anita	Lift
3	Emily	Niktog
4	Albert	Niktog
7	Joseph	Swipple
2	Andrew	Van Noslo
8	Helen	Wheels
(AutoNumber)		

Sorts within Sorts

Sometimes you may need to sort on two or more fields. For example, if a table has many names, you might want to sort on the LastName and the FirstName fields. That way, surnames will be in alphabetical order, and within each name, they'll be sorted by the person's first name as shown in Figure 9.2.

Sorting on two or more fields is easy:

1. Open the table or query in datasheet view. Or if you're currently viewing a form in form view, switch to datasheet view.

FIGURE 9.2

Sorting an Employees table on two fields and on a single field.

Records are sorted by LastName only (Niktogs are not in alphabetical order by FirstName).

Records are sorted by LastName and FirstName.

2. Move the fields that you want to use to the leftmost column positions (see Chapter 8) if necessary. (The fields you're sorting on must be in adjacent columns.) Access will do the sort from left to right. Thus to sort by surname and then by first name, arrange the columns with the LastName column just to the left of the FirstName column.

3. Select the column(s) you want to base the sort on. To do so, click on the first column and then Shift-click on additional column(s). In the example below, we moved the LastName and FirstName fields to the leftmost column positions and then selected those fields for sorting:

4. Click on the Sort Ascending or Sort Descending toolbar button (depending on the order you want) or use the equivalent menu options or shortcut menu options given earlier.

Returning the Records to Their Original Order

When you're ready to return the records to their original, unsorted order, choose Records ➤ Remove Filter/Sort. Or right-click anywhere in the datasheet or form and choose Remove Filter/Sort.

> **NOTE**
> Any time you close the table after using the sort feature (described above) or the filter feature (described later in this chapter), Access will ask if you want to save changes to the design of your table. If you choose Yes, Access stores the current sort and filter in the table's Filter and Order By properties.

To learn more about sorting, go to the Access Help Contents, open the *Finding And Sorting Data* book, open the *Sorting Data In Tables, Queries, And Forms* book, and then choose a sorting subtopic that interests you.

Finding Individual Records

Scrolling through records is fine for browsing. But when you're in a hurry, you'll probably want to use these search techniques to find specific data in your table:

1. Open the table, query, or form that contains the data you're looking for (if it isn't already open). You can use either datasheet view or form view—it doesn't matter which.

2. If you want to search only one specific field, click on that field. The Find feature can search fields that have any data type *except* Yes/No, OLE Object, or Lookup.

3. Click on the Find toolbar button (shown at left). Or choose Edit ➤ Find or press Ctrl+F. Or right-click on the column selector (in datasheet view) and choose Find from the shortcut menu. You'll see the Find In Field dialog box shown below.

4. Type the text you want to look for in the Find What text box (for example, **Niktog**). To make the search more general, you can include the wildcard characters listed in Table 9.1.

TABLE 9.1: WILDCARD CHARACTERS YOU CAN USE IN THE FIND WHAT TEXT BOX		
WILDCARD	**STANDS FOR**	**EXAMPLE**
?	Any single character	**Sm?th** matches Smith, Smyth, Smath, and so on.
*	Zero or more characters	**Sm*** matches Smith, Smith-ereens, Sm'ores, Sm.
#	Any numeric digit	**9## Oak St.** matches any addresses in the range of 900 Oak St. to 999 Oak St.
[ ]	Any characters in the brackets	**Sm[iy]th** matches Smith or Smyth, but not Smath.
–	Any characters within the range (must be within brackets)	**[N–Z]** matches any text starting with the letters N through Z, provided that you also select Match ➤ Start Of Field.
!	Any character except (must be within brackets)	**[!N–Z]** matches any text that doesn't start with the letters N through Z, provided that you also select Match ➤ Start Of Field.
"" (two double-quotes)	Zero-length strings	**""** matches zero-length strings, provided that you also select Match ➤ Whole Field.
Null or Is Null	An unformatted blank field	**Null** matches empty fields, provided that you also select Match ➤ Whole Field and have not selected (checked) Search Fields As Formatted.

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5. Select or deselect the Match Case, Search Fields As Formatted, and Search Only Current Field options; choose a search direction (Up, Down, or All) from the Search drop-down list; and choose a match option (Whole Field, Any Part Of Field, or Start Of Field) from the Match drop-down list as needed. *Note:* If you're searching in a lookup field and the Match box is set to Whole Field or Start Of Field, be sure to select (check) Search Fields; otherwise the search will fail.

> **NOTE**
>
> By default, the Find and Replace features do a "Fast Search" in which Access searches the current field and matches the whole field. To change the default setting, choose Tools ➤ Options, click on the Edit/Find tab in the Options dialog box, and then choose an option under Default Find/Replace Behavior. For more details, see Chapter 15 or click on the ? button in the Options dialog box and then click on the Edit/Find option you're curious about.

6. Start the search by clicking on the Find First button (to find the first occurrence of the text in the table) or the Find Next button (to find the next occurrence relative to the cursor position).

Access will find the first record (if any) that matches your request. If the dialog box is covering data that Access has found, drag the box out of the way.

Repeat steps 4 through 6 (or click on Find Next) until you've found the record you want. If Access tells you it can't find the search item, click on OK to end the search. When you're done searching, click on Close or press Esc to close the dialog box.

> **TIP**
>
> After closing the Find dialog box, you can press Shift+F4 to find the next occurrence of text you last searched for.

For more help on finding records, go to the Access Help Contents, open the *Finding And Sorting Data* book, open the *Finding Records Or Data* book, and then choose the subtopic you're interested in.

Fixing Typos Automatically

If you're not such a hot typist, you'll be happy to know that Access can check and correct your spelling automatically as you type, or anytime you wish. You'll learn next about the AutoCorrect and Spelling features, which can search out typing mistakes and render them harmless.

> **TIP**
> The AutoCorrect and Spelling features in Access are almost identical to the ones you'll find in other Microsoft Office programs, including Word and Excel.

Correcting Mistakes As You Type

If you frequently find yourslef typng (oops, *yourself typing*) certain words incorrectly, or you often want to replace abbreviations (such as CEFGW) with their longer forms (Close Enough For Government Work), the AutoCorrect feature can help you. You simply teach AutoCorrect the word or abbreviation it should replace and then provide its replacement word or phrase. In the future, Access will substitute the typo or abbreviation with its replacement word or phrase. AutoCorrect also can correct capitalization errors that occur when you type TWo INitial CApitals (instead of just one) in a word or you forget to capitalize names of days.

> **NOTE**
> Adding new words to the list of automatic replacements has *no effect* on existing text.

Setting Up AutoCorrect Words and Settings

To teach AutoCorrect new words or to change the AutoCorrect settings, open any database object or go to the database window.

1. Choose Tools ➤ AutoCorrect. Figure 9.3 shows a sample AutoCorrect dialog box after we filled in the Replace and With boxes. (Notice that Access comes with an extensive list of commonly mistyped words that it can replace automatically.)

2. Use these techniques to turn AutoCorrect features on or off:

   - **To replace two initial capital letters** with just one initial capital letter, select (check) Correct TWo INitial CApitals. Deselect this option to prevent automatic replacement when you type two initial capital letters.

   - **To capitalize the first letter of a sentence**, select (check) Capitalize first letter of sentence. Deselect this option to keep Access from capitalizing the first letter in each sentence.

   - **To capitalize names of days** if you forget to do so, select (check) Capitalize Names Of Days. Deselect this option to prevent automatic capitalization when you type day names.

   - **To have Access notice when you type with caps lock on by mistake**, select (check) Correct accidental use of cAPS LOCK key.

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Replace these words...   with these words
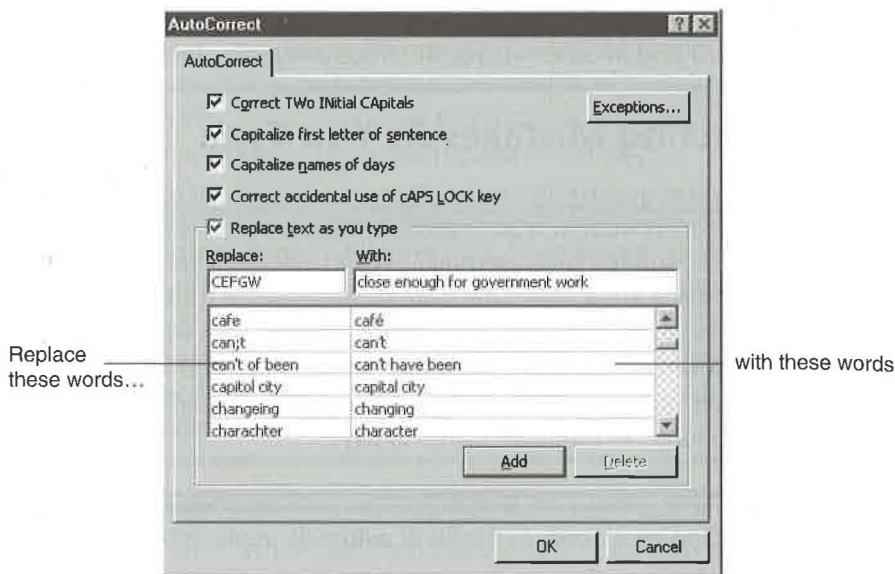
- **To replace words shown in the left column** of the AutoCorrect dialog box with words shown in the right column, select (check) Replace Text As You Type. Deselect this option to prevent automatic replacements as you type.

3. Use these techniques to add, change, and delete words in the replacement list:

- **To add a new word to the replacement list**, type the misspelling or abbreviation into the Replace text box. Then type the correction or expanded form of the word into the With text box. Click on Add to add the items to the list.
- **To change a word or its replacement**, scroll to and then click on the appropriate word in the list below the Replace and With text boxes (the words are listed in alphabetical order). The Replace and With boxes will show the item you selected. Change the Replace or With text as needed, and then click on the Add or Replace button (whichever is available) to update the list.
- **To delete a word and its replacement**, scroll to and click on the appropriate word in the list. Then click on the Delete button.

4. Repeat steps 2 and 3 as needed. When you're finished using the AutoCorrect dialog box, click on OK.

> **NOTE**
> You can add new words to the AutoCorrect list during a spell check. See "Checking Your Spelling" for details.

Using AutoCorrect during Data Entry

As you type new text or paste a word or abbreviation into a text or memo field, Auto-Correct will fix typos or expand abbreviations automatically. (AutoCorrect has no effect on existing text.) The automatic correction takes place when you type a space or punctuation mark in the field or move the cursor to another field.

If you need to cancel an automatic replacement as you're typing, press Ctrl+Z (or choose Edit ➤ Undo AutoCorrect); the text will reappear as you typed it. To reinstate the automatic correction, press Ctrl+Z again (or choose Edit ➤ Undo).

Need more information? Go to the Access Help Contents, open the *Working With Data* book, open the *Checking Spelling And Automatically Correcting Errors As You Type,* and then explore the automatic correction subtopics as needed.

Checking Your Spelling

Access can check and correct the spelling in text or memo fields of a datasheet, or in selected text in a datasheet or form. The spell check ignores fields that don't have a Text or Memo data type.

Here's how to start a spell check:

1. Do one of the following, depending on how much text you want to spell check:

- **To check spelling in datasheet view,** select the records, columns, fields, or text within a field.
- **To check spelling in form view,** select the field or text within the field you want to check.
- **To check all text and memo fields in a table,** go to the database window, click on the Tables or Queries tab, and then click on the table or query you want to check. Or open the table or query in datasheet view and select all the columns.

2. Click on the Spelling toolbar button (shown at left) or choose Tools ➤ Spelling or press F7. Spell checking will start immediately.

3. Follow the screen prompts. Once spell checking begins, what you do next depends on what (if any) errors are found (see "Correcting or Ignoring a Word" below).

4. Click on OK to clear the completion message when the spell check is complete.

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Correcting or Ignoring a Word

When the spell checker finds a word that isn't in its dictionary, it will highlight the word in your datasheet or form, suggest a correction if it can, and pause so you can decide what to do next. Figure 9.4 shows the Spelling dialog box after it tripped over the word *Foosball,* which isn't in its dictionary.

You can click on any of these buttons (if they're available) when the spell checker is waiting for you to make a correction:

Ignore '*xxx*' Field   (where *xxx* is a field name). Click on this button to ignore the named field during the current spell check. Spell checking will continue.

Ignore or **Ignore All**   Click on Ignore to ignore the current occurrence of the word shown in the Not In Dictionary box. Click on Ignore All to ignore all occurrences of the word shown in the Not In Dictionary box. Spell checking will continue.

Suggest   Click on the Suggest button, or type a word into the Change To box and then click Suggest, to see alternatives to the word shown in the Change To box. To copy one of the suggested words into the Change To box, click on the word you want to copy in the list next to Suggestions. You can repeat these steps as needed.

Change or **Change All**   Lets you replace one occurrence (Change) or all occurrences (Change All) of the word shown in the Not In Dictionary box with the word shown in the Change To box. If necessary, use the Suggest button described above or type a word into the Change To box or click on a word in the Suggestions list to copy the word you want to use as the replacement word into the Change To box; then click on the Change or Change All button, as appropriate. Spell checking will continue.

FIGURE 9.4

The Spelling dialog box after Access found a word that wasn't in the dictionary.

Add Lets you add the word shown in the Not In Dictionary box to the spelling dictionary that's shown in the Add Words To box. If necessary, choose a dictionary name from the Add Words To drop-down list before you click on the Add button. (Do not add words that truly are misspelled to your dictionary! See the sidebar titled "Maintaining Custom Dictionaries" for more details.)

AutoCorrect Adds the word shown in the Not In Dictionary box to the Auto-Correct dictionary and assigns the word in the Change To box as the replacement word. This button saves you the trouble of manually adding words that you commonly mistype to the AutoCorrect dictionary (as explained earlier in this chapter).

TIP

If you add a word to the AutoCorrect dictionary accidentally, complete the spell check (or cancel it). Then choose Tools ➤ AutoCorrect, highlight the incorrect word in the replacement list, and click on the Delete button.

Options Takes you to the Spell Options dialog box (shown below). From here you can choose which language Dictionary to use and choose whether to

- **Always Suggest** alternate spellings or suggest them only when you click on the Suggest button
- **Suggest words From Main Dictionary Only**, or offer suggestions from both the main dictionary and the custom dictionary
- **Ignore Words In UPPERCASE** (such as ASPCA), or include those words when spell checking
- **Ignore Words With Numbers** (such as RNAA47) or include those words when spell checking
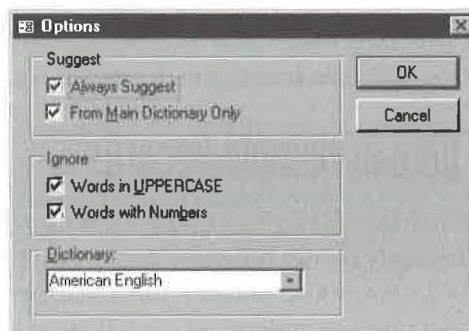
Maintaining Custom Dictionaries

You can create a custom dictionary anytime you're using the Spelling dialog box. This trick can be handy if you want to set up a new custom dictionary for storing special-purpose terms. To create a custom dictionary:

1. In the Spelling dialog box, erase any dictionary name that appears in the Add Words To combo box.

2. Type a valid dictionary name and press Enter or choose an existing custom dictionary from the combo box's drop-down list. The default dictionary name is custom.dic, but you can use any name for your dictionary as long as that name ends with a period and the letters *dic*. For example, mywords.dic and medical terms.dic are valid dictionary names.

3. If Access asks for permission to create the dictionary, click on Yes.

The custom dictionary is a plain text file that lists one word per line in alphabetical order by word. Custom dictionaries are stored in the folder \Program Files\Common Files\Microsoft Shared\Proof on drive C (if you chose the default installation location). If you add a misspelled word to a custom dictionary by accident, you can use Windows Notepad or Windows Word-Pad (in text mode) to delete the incorrect words. Edit carefully!

After choosing options in the Spell Options dialog box, click on OK.

Undo Last   Lets you undo the most recent change the spell checker made. Click on this button as necessary to back out of changes one by one.

Cancel   Ends the spell check and returns you to the datasheet or form.

For more details about spell checking, go to the Access Help Contents, open the *Working With Data* book, open the *Checking Spelling And Automatically Correcting Errors As You Type*, and then investigate the spelling subtopics.

Replacing Data in Multiple Records

In addition to letting you fix spelling errors in some or all text and memo fields, Access lets you instantly change the contents of a field throughout all (or some) of the records in your table. But before you even think of experimenting with this Replace feature, please make sure you understand the following warning.

> **WARNING**
> You can Undo only the last individual change that Replace makes. To play it safe, make a copy of the table before you replace data. That way, if you make a major mistake, you can close the table and then rename the unchanged original copy of the table to write over the version that has unwanted changes. See Chapter 1 for help on copying and renaming database objects.

To replace data in a table:

1. Open the table, query, or form that contains the data you want to change.
2. (Optional) If you want to limit replacement to a single field, click on that field. The Replace feature can replace text in fields that have any data type *except* OLE Object, AutoNumber, and Lookup.
3. Choose Edit ➤ Replace or press Ctrl+H. You'll see the Replace In Field dialog box shown below.

4. Type the value you want to search for and change in the Find What text box. You can use the wildcard characters listed in Table 9.1 if you wish.
5. Type the replacement text in the Replace With text box.
6. Select or deselect the Match Case, Match Whole Field, and Search Only Current Field options, and choose a search direction (Up, Down, or All) from the Search drop-down list as needed. Then do one of the following:

   - **To make the change automatically** (so that Access won't ask you to verify each occurrence), click on the Replace All button.
   - **To verify the changes in each record,** click on the Find Next button. (If necessary, drag the dialog box out of the way so you can see what data Access is about to change.) Then if you do want to change the current record, click on Replace. If you don't want to change the current record, click on Find Next. Repeat this step as needed.

7. Click on Yes to continue with step 9 or click on No to cancel the operation and return to steps 4, 5, or 6.

8. When Access cannot find any more matches, it will display a message. Click on OK to clear the message.

9. Click on the Close button when you're done replacing records.

Here are some tips you might want to know about:

- **To globally replace large amounts of data** more quickly, or to perform calculations on data (for example, raising certain product prices by 10 percent), use an *Update query* rather than Replace. See Chapter 10 for more about Update queries.
- **To change the default settings** for the Find and Replace features, choose Tools ➤ Options and click on the Edit/Find tab. Change the settings under Default Find/ Replace Behavior as needed and then click on OK. Chapter 15 explains more about personalizing Access.

A Search-and-Replace Example

Suppose that several people enter data into your table. Some of them spell names such as *Los Angeles* in full, while others use abbreviations such as *L.A.* This type of inconsistency is sure to cause problems down the road. Imagine that you want to send a form letter to all Los Angeles residents. If you isolate records that have Los Angeles in the City field, you'll miss all the ones that contain L.A. Why? Because computers aren't smart enough to know that Los Angeles and L.A. mean the same thing.

Anyway, the cure for your dilemma is to change all the *L.A.* entries in the City field to *Los Angeles* (or vice versa). To do that, click on the City field, choose Edit ➤ Replace, and then fill in the dialog box this way:

To start the replacement, click on the Replace All button and bingo—you're done! (Just answer any questions that appear on the screen.)

TIP

To prevent the L.A. city names from creeping into your data in the future, you might want to add an AutoCorrect entry that changes "L.A." to "Los Angeles" automatically. See "Correcting Mistakes As You Type" earlier in this chapter.

If you ever need reminders or help while replacing data, go to the Access Help Index and look up *Replacing Values In Fields*.

Filtering Out Unwanted Records

You can use *filters* to temporarily isolate (or select) records you want to see and to hide unwanted records. For example, you can focus on your California customers while hiding information about customers located in other states. There are several ways to create a filter:

- **Filter By Input** lets you create a filter from a field's shortcut menu.
- **Filter By Selection** and **Filter Excluding Selection** let you create a filter by selecting text or clicking in a field that contains the text you want to filter.
- **Filter By Form** lets you create a filter by typing the values you're looking for into a fill-in-the-blanks form or datasheet.
- **Advanced Filter/Sort** lets you use a window that's similar to a query design window to create a filter. You can choose each field to search or sort by and specify the sort order and values you're looking for.

NOTE

You can filter fields that have any data type *except* Memo or OLE Object.

Table 9.2 compares the four filtering methods briefly, and the following sections explain how to use each one. If you still need more information, go to the Access Help Index and explore the subtopics under *Filters*.

TIP

To switch between designing a Filter By Form and designing an Advanced Filter/Sort, open the Filter menu in the design window for either type of filter and then choose Filter By Form or Advanced Filter/Sort as appropriate.

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TABLE 9.2: FILTERING METHODS COMPARED

If This Is What You Want To Do...	Filter by Input	Filter by (Or Excluding) Selection	Filter by Form	Advanced Filter/Sort
Find records that meet one criterion *And* other criteria	Yes (if you specify the criteria one at a time)	Yes (if you specify the criteria one at a time)	Yes	Yes
Find records that meet one criterion *Or* other criteria	No	No	Yes	Yes
Find records that contain expressions as criteria	Yes	No	Yes	Yes
Find records and sort them in ascending or descending order at the same time	No	No	No	Yes

Filtering by Input

Filter by Input is a new Access feature that lets you use a field's shortcut menu to find records. You can use it for filters, such as finding all the records with "CA" in the State field. Filter by Input also works for more complicated filters that use comparison operators, wildcards, or functions. For example, you can use ">t" in a filter on the Last Name field to limit the records you view to those that begin with letters after T. Or you can use "D*" in the First Name field to see all records for people whose first name begins with D.

To use Filter by Input:

1. Open the table, form, or query you want to filter.
2. Right-click anywhere in the field you want to use for the filter except in the field header.
3. Enter a value in the box after Filter For: and press Enter.

To see other examples of valid filter expressions, search the Access Help Index for *Filters, Criteria to Select Records* and then look up *Examples of Expressions Used in Queries and Filters*.

Filtering by Selection or Exclusion

Let's suppose you've found a record that contains some data you're looking for—perhaps an order for tether balls in the Order Details table. Now you want to find all the other orders for that product, or all the orders for products *except* tether balls. Access makes jobs like these ridiculously easy:

1. Open the table, query, or form you want to filter (in datasheet view or form view).
2. Locate the record and field that contains an instance of the data you want Access to filter. For example, in the Order Details table, locate a record that displays the value *Tether ball* in the ProductID field.
3. Tell Access how much of the field to match:
   - **To match the entire field**, select the entire field or click in the field without selecting anything. *Example:* To match *Tether ball* (the entire field), click in a field that displays a value of *Tether ball* as shown below.

	Order Detail ID	Order ID	Product ID	Quantity	Unit Price
	1	1	Crystal ball	2	$45
▶	2	1	Tether ball	5	$9
	3	1	Basketball	2	$4
	4	1	Football	2	$5
	5	1	Foosball	4	$17
	6	2	Tether ball	1	$9

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   - **To match part of a field, starting with the first character** in the field, select text starting at the beginning of the field (see below). *Example:* To match fields that start with *Foo*, highlight *Foo* at the start of a field. Items such as *Football, Foosball,* and *Foot Powder* will match.

	Order Detail ID	Order ID	Product ID	Quantity	Unit Price
	1	1	Crystal ball	2	$45
	2	1	Tether ball	5	$9
	3	1	Basketball	2	$4
▶	4	1	Football	2	$5
	5	1	Foosball	4	$17
	6	2	Tether ball	1	$9

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- **To match part of a field, after the first character** in the field, select text within the field. *Example:* To match fields that contain *ball* (preceded by a space), highlight the word *ball* and the space that appears before ball, as shown below. Items such as *Crystal ball* and *Tether ball* will match, but *Football* and *Foosball* will not (because there's no space before *ball* in those item names).

Order Detail ID	Order ID	Product ID	Quantity	Unit Price
1	1	Crystal ball	2	$45
2	1	Tether ball	5	$9.
3	1	Basketball	2	$4
4	1	Football	2	$5.
5	1	Foosball	4	$17.
6	2	Tether ball	1	$9.

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NOTE

In the above example, Access will not match *Golf balls* when you apply the filter because the pattern "ball" doesn't fall exactly at the end of the field. To isolate Golf balls along with Crystal ball and Tether ball, select "ball" in a record that contains *Golf balls* in the ProductID field. This forces Access to use a more general pattern that says "Find the word ball preceded by a space *anywhere* in the field," rather than the less general pattern "Find the word ball preceded by a space at the end of the field."

4. Do one of the following to apply your filter:

- **To show only records that have matching values in the field,** click on the Filter By Selection toolbar button (shown at left) or choose Records ➤ Filter ➤ Filter By Selection or right-click on the field and choose Filter By Selection.
- **To show only records that do not have matching values in the field,** right-click on the field and choose Filter Excluding Selection. (Access will filter out records that contain null values in the field as well as records that contain values that match the current field or selection.)

The datasheet view or form view will instantly reflect your filtering choices. The navigation bar at the bottom of the datasheet or form window displays *(Filtered)*, and the status bar shows *FLTR*, to remind you that you're looking at a filtered view of data.

To filter the remaining records even more, simply repeat steps 2 through 4 as needed. You also can use the sorting techniques discussed earlier in this chapter to sort or alphabetize the records.

NOTE

When you apply a filter, you're actually setting the Filter property for the table query or form. To view this property, switch to design view, and then choose View ➤ Properties or click on the Properties toolbar button. If you're viewing form design properties, click on the Data tab on the property sheet. If you're viewing query properties, click in the gray upper part of the query design window.

Removing or Reapplying a Filter

It's easy to remove a filter or reapply it at any time:

- **To remove (or reapply) the filter only**, click on the Remove Filter toolbar button (shown at left). This button is a toggle—you click on it to remove the filter (the button will appear pushed out), and you click on it again to reapply the filter (the button will appear pushed in). The SmartTip under the button will flip-flop between Remove Filter and Apply Filter, to reflect what action the button will take when you click on it.
- **To remove both the filtering and sorting**, right-click on any data field and choose Remove Filter/Sort. Or choose Records ➤ Remove Filter/Sort.

TIP

The steps given above for reapplying and removing a filter work for *all* types of filters—Filter By Selection, Filter Excluding Selection, and Advanced Filter/Sort. You also can remove filters and sorting by clearing the Filter and Order By properties, respectively, on the property sheet in table design, query design, or form design view.

Saving Your Filter with the Datasheet or Form

You can save the filter so that Access will remember it the next time you open your table, query, or form. The following steps work for all types of filters—Filter By Selection, Filter Excluding Selection, and Advanced Filter/Sort:

1. Return to the datasheet window or form window.
2. Click on the Save toolbar button or press Ctrl+S or choose File ➤ Save Layout or File ➤ Save; or close the datasheet and click on Yes when asked if you want to save changes to the design.

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NOTE

Access automatically saves filters applied to a form when you close the form. There-fore, you don't have to explicitly save a form to use the filter the next time you open the form. Simply click on the Apply Filter button (or its equivalent menu options and right-click shortcuts) to reapply the last filter you used.

The next time you open the datasheet or form all the data will appear. To filter the data again, click on the Apply Filter button.

TIP

To create a form or report that automatically inherits the filter you've saved with a datasheet, open the datasheet, apply the filter and click on the Save toolbar but-ton. Then click on the drop-down arrow next to the New Object toolbar button and choose the AutoForm, AutoReport, Form, or Report option.

Filtering by Form

If you prefer a fill-in-the-blank method for designing your filters, try the Filter By Form feature. Here's how to use it:

1. Open the table, query, or form you want to filter (in datasheet view or form view).
2. Click on the Filter By Form toolbar button (shown at left) or choose Records ➤ Filter ➤ Filter By Form. If you're in datasheet view, you'll see a blank, one-row datasheet, as shown in Figure 9.5. If you're in form view, you'll see a blank form instead (see Figure 9.6).
3. Click in the field you'll use to specify criteria that records must meet to be included in the filtered set of records.

NOTE

A *criterion* is a set of limiting conditions, such as *tether ball* or *>47*, in a query or filter. One or more criteria are used to isolate a specific set of records.

4. Enter criteria by selecting the value you're searching for from the drop-down list in the field (if the list includes values) or by typing a value or expression into the field. In a moment, we'll give you some tips and tricks for filling in the fields. You'll learn more about entering expressions in the later section on "Using Advanced Filter/Sort."
5. Repeat steps 3 and 4 as needed to specify additional criteria that must be true in any given record that makes it through the filter.

FIGURE 9.5

The Filter By Form window shown as a one-row datasheet, after we opened the list for the ProductID field. Notice the Look For and Or tabs at the bottom of the window.
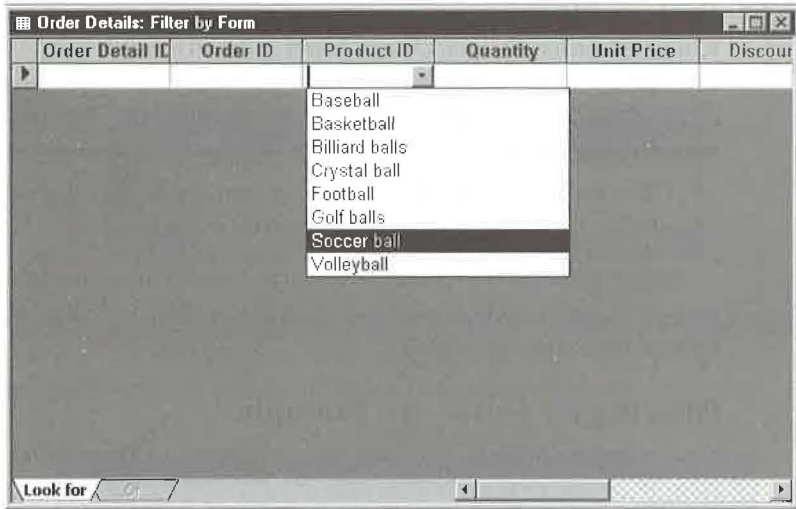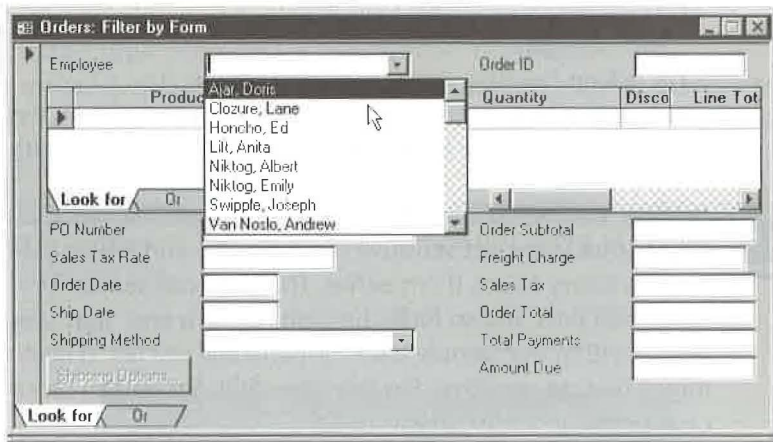

FIGURE 9.6

The Filter By Form window shown as a blank form, after we filled in some values and opened the list for the EmployeeID field. In this example, the bottom of the main form and subform includes Look For and Or tabs.

6. Click on an Or tab at the bottom of the window if you want to specify alternative values that records can have in order to make it through the filter; then specify criteria for that tab by repeating steps 3 and 4 as needed. You can continue setting up more Or criteria, and you can flip to a different tab by clicking on it.

> **TIP**
>
> Think of additional values shown on the same tab as meaning "And." For example, to include orders in which the product ordered is *tether ball* and the quantity ordered is *5*, specify *tether ball* in the ProductID field and *5* in the Quantity field. To also see orders for 2 of any item, click on the Or tab and type 2 in the Quantity field.

7. Click on the Apply Filter toolbar button when you're ready to apply the filter or choose Filter Apply Filter/Sort from the menus.

Access will filter the records as you asked and display them in the datasheet or form. As for Filter By Selection, you can remove the filter and save the filter from datasheet view or form view as needed.

Filtering by Form—an Example

Let's look at an example that will show how easy it is to use Filter By Form. Suppose you want to isolate records in the Order Details table in which customers ordered five (5) tether balls. You also want to see any order for basketballs, or any order for two (2) or more crystal balls. Here are the steps:

1. Open the Order Details table in datasheet or form view (we'll use datasheet view for our example).
2. Click on the Filter By Form toolbar button.
3. Type **tether ball** (if you're using the sample data that Access provided, typing **t** is enough to display *tether ball* in the field) in the ProductID field.

> **NOTE**
>
> Filters usually are not sensitive to uppercase and lowercase letters, so you don't have to worry about them either. Thus you can search for *tether ball* or *Tether Ball* or *TETHER BALL* and so forth. Remember, however, that spaces *are* important, so a search within our sample data for *tetherball* will fail. (Filters on attached data might be case-sensitive. For example, SQL Server can be configured to be either case-sensitive or case-insensitive.)

4. Type **5** in the Quantity field. The Filter By Form window looks like this:

Order Detail ID	Order ID	Product ID	Quantity
		"tether ball"	5

Look for / Or /

5. Click on the Or tab at the bottom of the Filter By Form window, click in the ProductID field, and then type **basketball** (or just **bask**, given our sample data), as shown below:
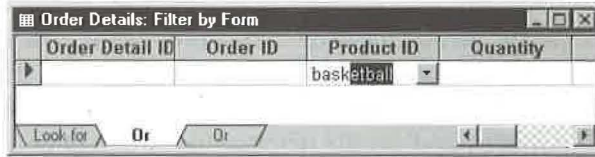
6. Click on the next Or tab at the bottom of the window, click in the ProductID field, type **crystal ball** (or just **c**), click in the Quantity field, and then type **>=2** (which means greater than or equal to 2). Here's what you'll see:

7. Click on the Apply Filter toolbar button to see the results.
8. Select the ProductID and Quantity columns and then click on the Sort Ascending toolbar button as a finishing touch. This step sorts the results by ProductID and then by quantity within the same ProductID.

Figure 9.7 shows the Order Details datasheet after we did the eight steps above. As you see, we've isolated all basketball orders, crystal ball orders of two or more, and tether ball orders of five.

FIGURE 9.7

Filtered records in the Order Details table.

Order Detail ID	Order ID	Product ID	Quantity
45	21	Basketball	1
40	17	Basketball	1
37	17	Basketball	2
22	8	Basketball	2
3	1	Basketball	2
13	3	Crystal ball	2
1	1	Crystal ball	2
34	15	Crystal ball	3
2	1	Tether ball	5
(AutoNumber)			

Record: 1 of 9 (Filtered)

Tips and Tricks for Using the Filter By Form Window

These tips and tricks can help you use the Filter By Form window more efficiently:

- **To clear all fields in the Filter By Form window**, click on the Clear Grid toolbar button (shown at left), or choose Edit ➤ Clear Grid.
- **To delete an Or tab at the bottom of the Filter By Form window**, click on the tab you want to delete and then choose Edit ➤ Delete Tab.
- **To get quick help with using the Look For or the Or tabs** on the Filter By Form window, click on the Help toolbar button or press Shift+F1; then click on the tab you need help with.

Speeding Up when Filtering by Form

Using Filter By Form will be fast on small tables, but it might be slow on very large ones. Fortunately, you can speed up overall performance for Filter By Form or optimize performance on individual forms.

If lists seem to display slowly while you're creating a Filter By Form filter, you can change some settings to speed things up. To speed up Filter By Form list performance for all tables, queries, and forms, choose Tools ➤ Options and then click on the Edit/Find tab. Check or clear options in the Show List Of Values In group; then enter a maximum list size to display when you open a drop-down list for a field value. The more options you check and the more items you show in lists, the slower your filter will display the drop-down lists when you create the filter. Click on OK when you're done making changes.

You also can speed up performance when displaying Filter By Form lists for text box controls on a specific form. To begin, open the design window for the form, choose View ➤ Properties, and then click on the Data tab in the property sheet. For each text box control you want to optimize, click on the text box control and then choose an appropriate Filter Lookup property. Your options are

Database Default Use the settings shown on the Tools ➤ Options ➤ Edit/Find tab.
Never Never show available values in the drop-down list for this field; instead, show only *Is Null* and *Is Not Null* in the list.
Always Always show available values in the drop-down list for the field.

Perhaps an example can help you decide when to turn off Filter Lookup for a field on a form. Suppose you work for a huge company, and you often use Filter By Form to select employees who have a particular last name. Because you rarely use the FirstName field's drop-down list when filtering by form, you can speed things up by setting the FirstName field's Filter Lookup property to Never. With this setting, an accidental click on the FirstName field's drop-down list won't bog you down while Access creates a long

list of first names that you don't need to see anyway. (Of course, you can always click in the FirstName field and type a first name value if you occasionally want to filter by first name.)
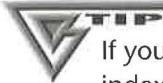
> **TIP**
>
> If you often use the same nonindexed field to filter your data, consider adding an index to that field, as explained in Chapter 6.

Using Advanced Filter/Sort

The Advanced Filter/Sort feature can be convenient to use if you need to create complex filters. With Advanced Filter/Sort you can sort fields and specify selection criteria all at once, without having to switch from tab to tab (as with Filter By Form). To use it:

1. Open the table, query, or form you want to filter, in datasheet view or form view.
2. Choose Records ➤ Filter ➤ Advanced Filter/Sort. The filter design window, shown in Figure 9.8, will appear.

> **TIP**
>
> You can view and update the "advanced" filter that's behind a Filter By Selection, Filter Excluding Selection, or Filter By Form at any time. Just create one of these filters as explained earlier in the chapter, and then choose Records ➤ Filter ➤ Advanced Filter/Sort or Filter ➤ Advanced Filter/Sort (depending on which options are available on the menu bar).

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The Filter window for the Order Details table. The first step generally is to copy the field (or fields) you want to search from the field list into the QBE grid.

Field list
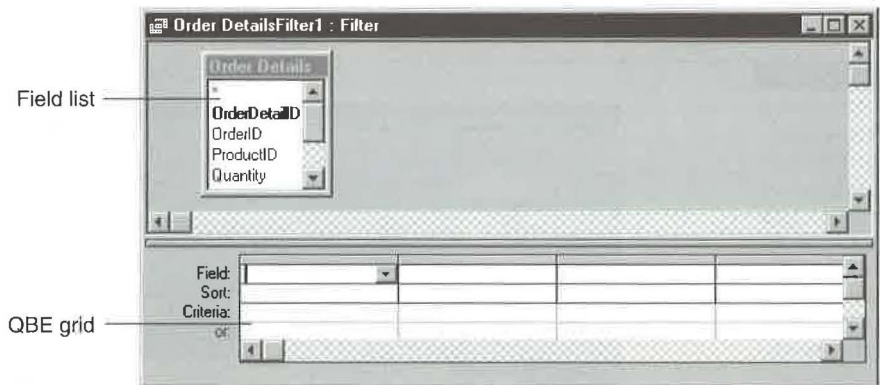
QBE grid

3. Drag the name of a field you want to search or sort by from the list in the upper pane of the window into the QBE grid in the lower pane of the window. Or double-click on a field to copy it to the next available Field cell in the QBE grid.

> **NOTE**
> QBE is short for *query-by-example,* so named because you *query* (ask for) certain records by presenting *examples* of what you want. (The search criterion you enter is the "example.") The QBE grid for a filter is similar to the QBE grid for a query (see Chapters 3 and 10).

4. Choose either Ascending or Descending from the Sort cell if you want to sort the records by the field you specified in step 3.

5. Type the value you're looking for into the Criteria cell under the field name.

> **NOTE**
> Access may translate your criteria into syntax it understands by adding quotation marks or other punctuation marks to whatever you type into the Criteria cells. Usually you can enter criteria without the quotation marks or other punctuation marks, although it's perfectly fine to type them yourself. The examples in Table 9.3 (later in this chapter) show ways to enter equivalent criteria with and without punctuation marks.

6. Repeat steps 3 through 5 to specify as many criteria as you wish. (We'll explain more about how to enter criteria under "Creating Complex Filters" later in this chapter.) Figure 9.9 shows the QBE grid after we copied the ProductID and Quantity fields to the QBE grid, typed **9** (the ProductID for a tether ball) into the Criteria cell below the ProductID field, and chose Ascending from the Sort cell below the Quantity field.

FIGURE 9.9

A completed Filter window that will select only tether ball records (ProductID 9), and sort the Quantity field in ascending (smallest-to-largest) order.
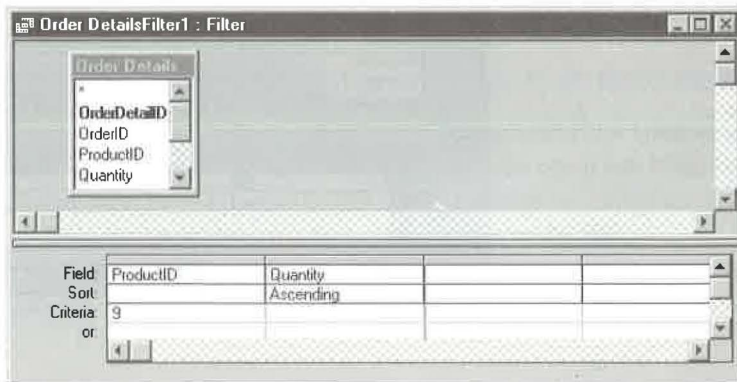
7. Click on the Apply Filter/Sort toolbar button when you're ready to apply the filter, or choose Filter ➤ Apply Filter/Sort.

Any records that do not meet the criteria you specified will just disappear from view. But don't worry—they're only hidden, not gone. The navigation bar shows *(Filtered)* and the status bar includes an *FLTR* indicator, to remind you that some records are hidden.

As for Filter By Form and Filter By Selection, you can remove the filter set up with Advanced Filter/Sort (click on the Remove Filter toolbar button), and you can save the filter with your datasheet or form (click on the Save toolbar button in datasheet or form view).

When you remove the filter, all the records in the table will be accessible again, and the *(Filtered)* and *FLTR* indicators will disappear. To reapply the filter, simply click on the Apply Filter toolbar button.

Using Lookup Fields in Filters

Entering Criteria values for a lookup field can be trickier in an Advanced Filter/Sort than it is in the simpler filters discussed earlier. That's because, in those simpler filters, Access creates an internal lookup query that joins lookup fields to their related tables and plugs in appropriate criteria values. To see this for yourself, create a Filter By Selection, Filter Excluding Selection, or a Filter By Form filter that selects values in a lookup field (such as ProductID), and apply the filter. Then choose Records ➤ Filter ➤ Advanced Filter/Sort to see the internal query that Access created automatically.

With the Advanced Filter/Sort feature, only one table (the table you're creating the filter for) usually appears in the filter window. Because you don't have the convenience of displaying values from the internal lookup query, you must enter (into the QBE grid's Criteria cell) the value that's actually stored in the lookup field, *not* the value shown when you're viewing the lookup field in a datasheet or form. In Figure 9.9, for example, we wanted to isolate orders for *tether balls*. To do that, we had to type 9 (the ProductID of a tether ball)—not the word *tether ball*—into the Criteria cell below ProductID.

See Chapter 6 for more about lookup fields and Chapter 10 for more about automatic joins between tables.

Creating Complex Filters

When filtering your records, you're not limited to looking for one value in one field. The fact is, you can isolate records based on the contents of any combination of fields

in the table. For example, you can select "all the orders that were placed within the last 60 days by companies in Bellevue, Washington, or Jackson, Mississippi."

NOTE
You can set up the same criteria with either Filter By Form or Advanced Filter/Sort. The main difference between these filtering methods is that Advanced Filter/Sort lets you see all your criteria at once, whereas you must switch from tab to tab to see the Or conditions in a Filter By Form filter. Also, Filter By Form doesn't offer built-in sorting (but, after applying the Filter By Form filter, you can arrange columns you want to sort by from left-to-right, select them, and then click on the Sort Ascending or Sort Descending toolbar buttons).

Choosing Fields to Filter

When setting up an Advanced Filter/Sort, you first need to tell Access which fields to filter or sort by copying field names from the field list into the QBE grid (see Figure 9.8). You've already learned two ways to copy field names, but here's the complete list of techniques for reference:

- **To locate a field name in the field list,** click in the field list and type (as many times as needed) the first letter of the field name you want to see, or use the vertical scroll bar.
- **To copy a field name into the QBE grid,** double-click on the field name in the field list or drag it from the field list to the first row (see Figure 9.9). Or click in an empty Field cell in the QBE grid and then type the first few letters in the field name. Or click in the Field cell, click on the drop-down arrow button that appears, and then scroll to and click on the field you want to copy.
- **To copy several field names to the QBE grid,** Shift-click to select multiple adjacent field names in the field list or Ctrl-click to select nonadjacent field names. Then drag any one of the selected field names into the QBE grid.
- **To copy all the field names from the field list into the QBE grid,** double-click on the title at the top of the field list and then drag any selected field name down to the QBE grid.

Specifying Selection Criteria

The selection criteria tell Access what you're looking for. To specify criteria, you type an expression in the Criteria cell under a field name. The expression can be the exact thing

you're looking for (such as **Smith** or **100** or **6/15/96**), or it can use comparison operators such as > (greater than), < (less than), and so forth. Here are some rules about typing an expression:

- **In a number, currency, or autonumber field**, don't include a currency sign or thousands separator. For instance, type **10000** to search for the value $10,000.
- **In a date/time field**, the left-to-right order of the month, date, and year ultimately must match the order defined on the Date tab of the Regional Settings Properties dialog box in the Windows Control Panel. For instance, in the United States, you can enter **11/9/96** or **9 November 1996** or **9-Nov-96** or **Nov 9 96**, and Access will replace the entry automatically with #11/9/96#.
- **In a text field**, you can type the text you're looking for in either uppercase or lowercase letters. Put quotation marks around text that includes spaces, punctuation, or Access operators.
- **In a memo field**, you'll probably want to use the * wildcard to search for text embedded within the field. See "Finding Part of a Field" later in this chapter for examples.
- **In a Yes/No field**, enter -1, Yes, True, or On for Yes; or 0, No, False, or Off for No.
- **Operators are optional**. If you omit the operator, Access assumes you mean equals (=).

Using Operators and Wildcard Characters

When typing expressions in the QBE grid or the Filter By Form datasheet or form, you can use the operators and wildcards listed in Table 9.3 and the mathematical operators shown in Table 9.4.

TABLE 9.3: OPERATORS AND WILDCARD CHARACTERS			
OPERATOR	**OPERATOR MEANING**	**EXAMPLE**	**EXAMPLE MEANING**
Comparison Operators			
=	Equals	=smith *or* ="smith"	Equals *smith*
>	Greater than	>5000	Greater than *5,000*
<	Less than	<1/1/97 *or* <#1/1/97#	Less (earlier) than *January 1, 1997*

TABLE 9.3: OPERATORS AND WILDCARD CHARACTERS (CONTINUED)

OPERATOR	OPERATOR MEANING	EXAMPLE	EXAMPLE MEANING
>=	Greater than or equal to	>=M or >="M"	Greater than or equal to the letter M
<=	Less than or equal to	<=12/31/96 or <=#12/31/96#	Less (earlier) than or equal to December 31, 1996
<>	Not equal to	<>CA or <>"CA"	Does not equal CA
Between	Between two values (inclusive)	Between 15 and 25	A number from 15 to 25
In	Within a set or list of values	In(NY, AZ, NJ) or In("NY", "AZ", "NJ")	New York, Arizona, or New Jersey
Is Null	Field is empty	Is Null	Records that have no value in this field
Is Not Null	Field is not empty	Is Not Null	Records that do have a value in this field
Like	Matches a pattern	Like MO-* or Like "MO-*"	Records that start with MO- followed by any other characters (see Wildcard Characters in this table)

Logical Operators

And	Both are true	>=1 And <=10	Between 1 and 10
Or	One or the other is true	UT or AZ or "UT" or "AZ"	Either Utah or Arizona
Not	Not true	Not Like MO-??? or Not Like "MO-???"	Records that don't start with Mo- followed by exactly three characters.

TABLE 9.3: OPERATORS AND WILDCARD CHARACTERS (CONTINUED)

OPERATOR	OPERATOR MEANING	EXAMPLE	EXAMPLE MEANING
Wildcard Characters			
?	Any single character	P?-100 *or* "P?-100"	Values that start with *P* followed by any single character, followed by *-100*
*	Any characters	(619)* *or* "(619)*"	Any text that starts with *(619)* e.g., phone or fax numbers
[*field name*]	Some other field in the QBE grid	<[UnitPrice]	Records where this field's value is less than the value in the UnitPrice field

TABLE 9.4: MATHEMATICAL OPERATORS

OPERATOR	MEANING
+	Addition
-	Subtraction
*	Multiplication
/	Division
\	Integer division
^	Exponent
Mod	Remainder of division (modulo)
&	Join two text strings

You also can use the Date( ) function to search for records by date relative to the current date. Table 9.5 shows some examples. Another function, DateAdd( ), is handy for specifying a range of dates based on some interval other than days.

TABLE 9.5: SAMPLE DATE() AND DATEADD() FUNCTIONS

EXAMPLE	EXAMPLE MATCHES
Date( )	The current date
<=Date( )	The current date and all dates before
>=Date( )	The current date and all dates after
<=Date( )-30	Dates earlier than or equal to 30 days ago
Between Date( ) And Date( )-30	Dates within the last 30 days
Between Date( ) And Date( )+30	Dates within the next 30 days
Between Date( )-60 And Date( )-30	Dates between 30 and 60 days ago
>DateAdd("m",1,Date( ))	Dates that are greater than 1 month ("m") from the current date
Between DateAdd ("m",-2,Date( )) And Date( )	Dates between two months ago and the current date
Between DateAdd("m",2,Date( )) And Date( )	Dates between the current date and two months from now
<DateAdd('yyyy",-1,Date())	Dates that are earlier than 1 year ("yyyy") ago

For more information on functions and how to use them, go to the Access Help Index, look up *References, Functions* or search for the function you're interested in.

Specifying "And/Or" Criteria

Sometimes you'll want to show only those records that meet all of your criteria. For instance, to locate records in the Customers table for Wilbur Stumingi in San Diego, structure your criteria to match only records that have Wilbur in the ContactFirstName field *and* Stumingi in the ContactLastName field, *and* San Diego in the City field.

At other times you'll want to show records that match *any of* the search criteria. For example, you might want to show products that have a unit price of $4.95 or $12.95.

Table 9.6 summarizes the techniques you use in the QBE grid to specify "And" and "Or" relationships among criteria.

TABLE 9.6: TECHNIQUES FOR SPECIFYING *AND* AND *OR* RELATIONSHIPS

TO SPECIFY THIS RELATIONSHIP...	IN...	DO THIS...
AND	Multiple fields	Place the criteria in the same row of the QBE grid.
AND	A single field	Use the And operator.
OR	Multiple fields	Place the criteria in separate rows of the QBE grid.
OR	A single field	Use the Or operator or use the In operator or stack the criteria in the QBE grid.

Arranging the QBE Grid

If you're creating a really complex filter with lots of fields, you may want to rearrange the QBE grid. Roughly the same techniques that work for customizing the datasheet view also work with the QBE grid. For example:

- **To select a QBE column,** click on the column selector at the top of the column. (The mouse pointer changes to a heavy black ↓ when it's positioned on a column selector.)
- **To select multiple columns,** drag the mouse pointer through several column selectors. Or click on the column selector for the first column you want to select and then Shift-click on the column selector for the last column you want.
- **To select a criteria row,** click on the row selector at the left edge of the row. (The mouse pointer changes to a heavy black → when it's positioned on a row selector.)
- **To select multiple criteria rows,** drag the mouse though the row selectors of several rows. Or click on the row selector of the first row you want to select and then Shift-click on the row selector of the last row you want.
- **To delete the selected rows or columns,** press the Delete key or choose Edit ➤ Delete Rows or Edit ➤ Delete Columns.

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- **To insert as many blank rows or columns as you selected**, press the Insert key or choose Insert ➤ Rows or Insert ➤ Columns.
- **To move the selected rows or columns**, click on the row selector (for selected rows) or the column selector (for selected columns) inside the selected area. Then drag the selected rows or columns to a new position.

To adjust column widths in the QBE grid, drag or double-click on the right boundary of the column selector at the top of the column(s).

Sample Filters

The various operators, functions, and And/Or logic in Access allow you to create a practically endless variety of filters. Following are some examples of filters that are meaningful in the context of our sample database; they should give you some food for thought (and useful guidelines) for creating your own filters.

Finding Part of a Field

Wildcards are useful for finding information that's embedded within a field. The filter below will isolate records for customers on the street named Polk in the city of San Francisco.

Field:	BillingAddress	City	
Sort:			
Criteria:	Like "*polk*"	"San Francisco"	
or			

Initially, we typed the criterion into the BillingAddress field as simply ***polk***. Access added the "Like" and quotation marks automatically.

The City criterion, San Francisco, is on the same row as the BillingAddress field criterion. So in order to pass through the filter, a record must have Polk somewhere within the BillingAddress field and also have San Francisco in the City field.

Wildcard characters work with all data types except OLE Objects. Suppose you create a table of journal references, and the table structure includes a memo field named Abstract. To find all the records that have the phrase "vernal equinox" embedded somewhere in the Abstract field, set the field's filter criterion to **vernal equinox** or *Like "*vernal equinox*"*.

Wildcards are handy for isolating records with dates in a specific month. This criterion isolates records that have dates in March, 1997, stored in the Order Date field (assuming the standard mm/dd/ty notation for dates in the United States):
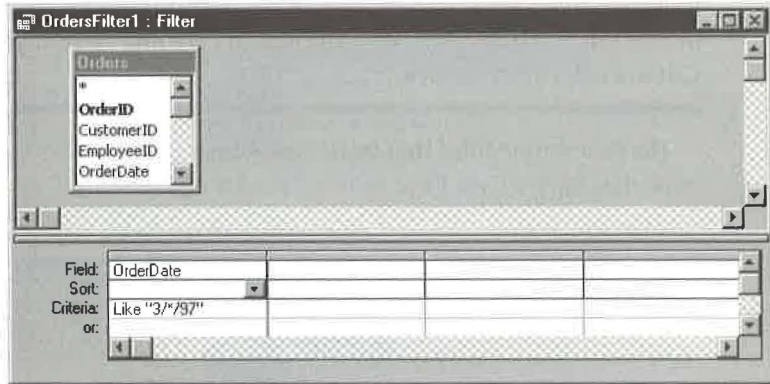

Finding Ranges of Values

You can use the various comparison operators to search for ranges of data values. For example, the filter below isolates customers whose last names begin with the letters A through M and sorts the names alphabetically by last name.
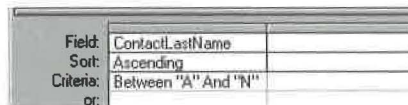
Notice that we used N at the high end of the range. That's because any name (or word) beginning with the letter *m*, even mzzxxyxyx, is "less than" *n*. But anything that comes after the letter *n* (in the dictionary) is considered to be "greater than" *n*. So even a simple last name like *na* is excluded because *na* is greater than *n*.

Here's a filter that isolates and sorts (by PostalCode) customers located in the postal code range 92000 to 99999-0000:
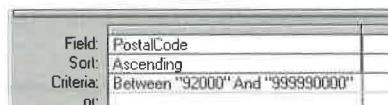
> **NOTE**
>
> When entering criteria, be sure to specify only characters that are actually stored in the table. For example, the input masks for fields in Wizard-generated tables display punctuation characters (such as hyphens in a Zip code and parentheses in a phone number) in a datasheet or form, but they do not store those characters in the table. That's why we omitted the hyphen punctuation character in the Criteria cell shown above.

Here's a simple filter that isolates and sorts (by UnitPrice) records in the Products table that have a Unit Price value of $25.00 or less.

Field:	UnitPrice	
Sort:	Ascending	
Criteria:	<=25	
or:		

Filtering Dates

The filter below isolates records with dates from the first quarter of 1997 (January 1 through March 31, 1997). In this example, we didn't have to type the # symbols. Access adds them automatically when you type a date into the Criteria cell.
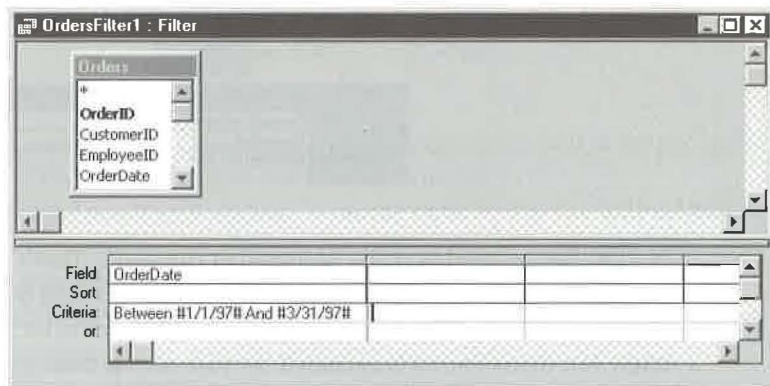
> **TIP**
>
> You can use the Date( ) function in a filter to stand for the current date. See Table 9.5 earlier in this chapter.

Accepting Several Values from a Field

Suppose you want to isolate customers in the states of Alaska, California, and Wyoming. In this case, you want to accept records that have AK or CA or WY in the StateOrProvince field. There are three ways to set up the filter. Here's one:

Field:	StateOrProvince	
Sort:		
Criteria:	"ak" Or "ca" Or "wy"	
or:		

This "stacked" setup works just as well:

Field:	StateOrProvince	
Sort:		
Criteria:	"ak"	
or:	"ca"	
	"wy"	

And so does this version, which uses the "In" operator to list acceptable entries:

Field:	StateOrProvince	
Sort:		
Criteria:	In ("ak","ca","wy")	
or:		

No particular method is better than another. So use whichever method seems most natural or convenient. Remember, too, that Access isn't picky about uppercase and lowercase letters in the Criteria cells; therefore, it's fine to enter the abbreviation for Alaska as **AK** or **Ak** or **ak**, or even **aK**.

Saving a Filter as a Query

Earlier in this chapter we showed you how to save a filter with the datasheet or form. Filters saved with the datasheet or form are available anytime you open the datasheet or form and apply the filter and anytime you display a filtered datasheet or form and then create a new form or report from the filtered records.

You also can save a filter as a separate query object, which will be available anytime you need it. Here's how:

1. Return to the Advanced Filter/Sort filter design window. If you're viewing the datasheet or a form, choose Records ➤ Filter ➤ Advanced Filter/Sort. If you're in the Filter By Form window, choose Filter ➤ Advanced Filter/Sort.
2. Click on the Save toolbar button or choose File ➤ Save As Query or right-click in the upper pane of the window and choose Save As Query.
3. Type a name for the query and click on OK. As usual in Access, the name can be up to 64 characters, including blank spaces (see the sidebar titled "Object Naming Rules" in Chapter 6). Access will save the filter as a query.

When you want to reuse the query in the future:

1. Open the table to which you want to apply the filter. This must be the same table you used to create the filter originally.
2. Return to the filter window (see step 1 of the procedure for saving a filter as a query, just above).
3. Choose File ➤ Load From Query, or right-click in the upper pane of the window and choose Load From Query.
4. Double-click on the name of the filter you saved earlier. The filter will appear in the filter window. (The filter might look slightly different from the one you saved earlier, but it will work the same way.)
5. Click on the Apply Filter toolbar button.

Troubleshooting Filters

Remember these points if your filtered results seem to have gone awry:

- If an Access operator (such as the word "And") happens to occur within text that you're searching for (such as the company name *Dewey Cheathem And Howe*), place the entire text in quotation marks:

    ```
    "Dewey Cheathem And Howe"
    ```

    Otherwise, Access will misinterpret your text as

    ```
    "Dewey Cheathem" And "Howe"
    ```

- If you're searching for text that contains punctuation marks (that is, anything other than numbers or letters), put quotation marks around the text. You can use single quotation marks ('') or double quotation marks ("").

- Avoid confusing "And" and "Or" logic. This logic doesn't always work the way you'd think of it in English. For instance, to find customers in Mississippi and Washington, you must use an "Or" criterion, such as **"MS" Or "WA"**. If you use an "And" criterion instead, Access never finds a match. That's because Access can't answer Yes when it asks the question "Does this record have MS in the StateOrProvince field and WA in the StateOrProvince field?"
- Remember that each Criteria row in the filter asks an entirely separate and independent question. If Access can answer Yes to any one of those questions, the record passes through the filter.

This last point is an important one and the cause of much confusion among neophyte database users. For example, look at this filter and see if you can figure out which Order Detail records will get through it.

Field:	ProductID	Quantity	
Sort:			
Criteria:	9	5	
or:		3	

At first you might say "It'll show all the orders for tether balls (ProductID 9) in which the Quantity ordered is 5 or 3." But that's not exactly correct. The filter will show all the tether balls in which the quantity ordered is 5 and all products (regardless of ProductID) for which the quantity ordered is 3. Why? Because two separate questions are being asked of each record:

Question 1: Does this record have 9 in the ProductID field and 5 in the Quantity field?
Question 2: Does this record have 3 in the Quantity field?

Any record that can pass either question comes through the filter. The second question above places no filter criterion on the ProductID field.

If you want to select all the tether ball orders that have a quantity ordered of 5 AND all the tether ball orders that have a quantity ordered of 3, you must set up two complete questions, like this:

Field:	ProductID	Quantity	
Sort:			
Criteria:	9	5	
or:	9	3	

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This second filter asks these two questions:

> **Question 1**: Does this record have 9 in the ProductID field and 5 in the Quantity field?
>
> **Question 2**: Does this record have 9 in the ProductID field and 3 in the Quantity field?

Only records that have the 9/5 combination or the 9/3 combination will pass through the filter.

As with most things in Access, you can get help as you create your own advanced filters. Go to the Access Help Index, search for *Filters*, and explore any topics of interest. As you scroll through the *Filters* topics, you'll discover a *Troubleshooting Problems* subtopic that can help you diagnose and solve problems with filters.

Quick Prints

If you're looking at a datasheet or form on the screen and need a printed copy of that object, you can click on the Print toolbar button (shown at left) to print the data without being prompted for further information. Of course, Access also gives you fancier ways to print things, as the next few sections will explain.

Previewing Your Printout

To get a sneak preview of how the data on the screen will look when printed:

1. Start from datasheet view or form view, then
2. Click on the Print Preview toolbar button (at left) or choose File ➤ Print Preview. A full-page image of the datasheet or form will appear.
3. Do any of the following:

   - **To zoom into or out of a portion of the image**, click on the Zoom toolbar button or click on the image itself. Figure 9.10 shows our sample Products table after zooming in on the data.
   - **To zoom so that you can see two pages at a time**, click on the Two Pages toolbar button. To return to one-page view, click on the One Page toolbar button, or click on the Multiple Pages toolbar button and click on 1x1.
   - **To zoom so that you can see from 1 to 6 pages at a time**, click on the Multiple Pages toolbar button and click on your choice (1x1, 1x2, etc.).

FIGURE 9.10

The Print Pre-
view window
for our sample
Products table,
after zooming
in on the data.

- **To zoom to any magnification** between 10 and 200 percent or best fit, click on the drop-down arrow next to the Zoom Control box on the toolbar and then choose a magnification.
- **To output the data to another Microsoft program,** click on the drop-down arrow next to the OfficeLinks toolbar button, and then choose Merge It with MS Word, Publish It With MS Word, or Analyze It With MS Excel. (See Chapter 7.)
- **To select options from a convenient shortcut menu,** right-click anywhere in the image and choose an option from the menu, shown below. *Zoom* offers the same magnification options shown in the Zoom Control box, *One Page* shows one page at a time, *Multiple Pages* displays up to 6 "thumbnail" pages at a glance, *Page Setup* opens a dialog box where you can set margins and orientation for printing, *Print* opens the Print dialog box, *Save As/Export* exports data

to another format (see Chapter 7), and *Send* sends the data as an e-mail message (see Chapter 7).
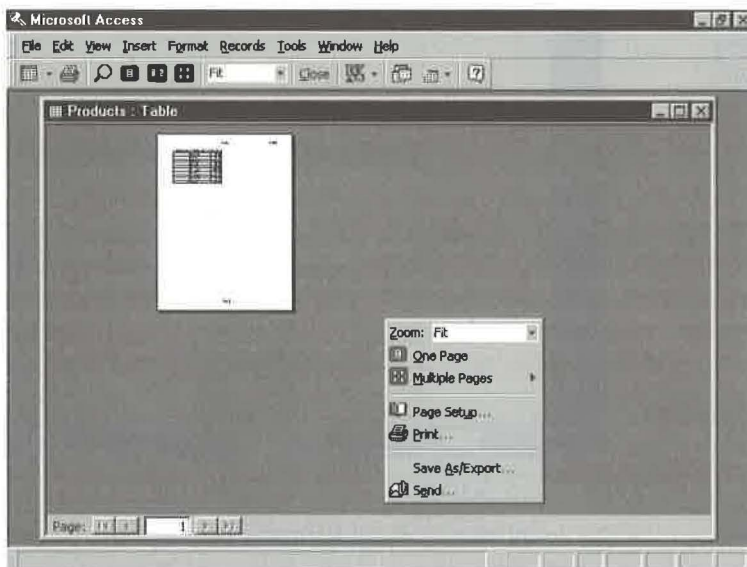
- **To immediately print** whatever is in the print preview window, click on the Print toolbar button. Or choose File Print (or press Ctrl+P) and continue with step 3 of the procedure given in the next section.
- **To return to datasheet view or form view without printing**, click on the Close toolbar button.

Printing Your Form or Datasheet

To print the current form view or datasheet view data without previewing it first:

1. Select the record(s) you want to print if you want to print selected records.
2. Click on the Print toolbar button (shown at left) if you want to use the default printing options and print immediately.
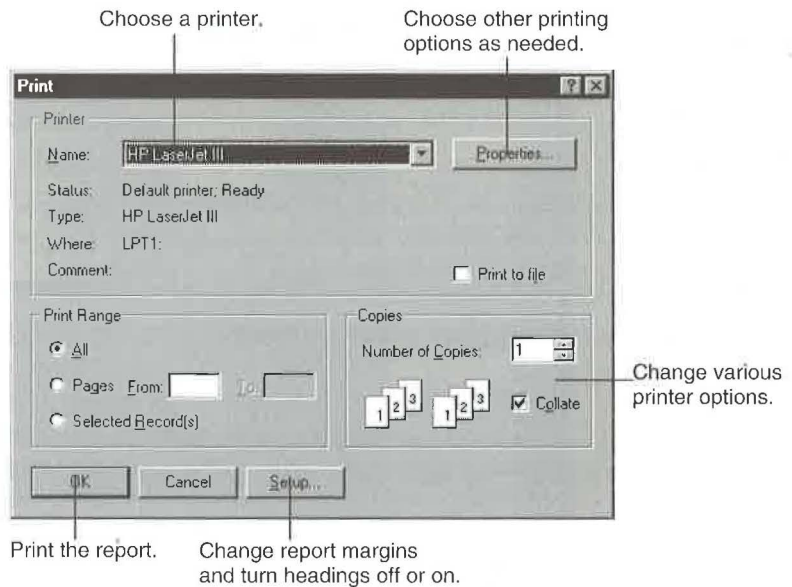
Or

If you want more control over printing, choose File ➤ Print or press Ctrl+P. You'll see the Print dialog box shown in Figure 9.11.

FIGURE 9.11

The Print dialog box.

Choose a printer.

Choose other printing options as needed.

Change various printer options.

Print the report.

Change report margins and turn headings off or on.

3. Choose options in the Print dialog box as needed (more on these options in a moment).

4. Click on OK when you're ready to start printing.

Most of the printing options are quite straightforward, but if you need more help, see "Changing the Page Setup" and "Changing Printer Properties" below, or click on the ? button in the upper-right corner of the dialog box and then click on the option you're curious about. You also can explore topics in the Access Help Index that start with the word *Printing*.
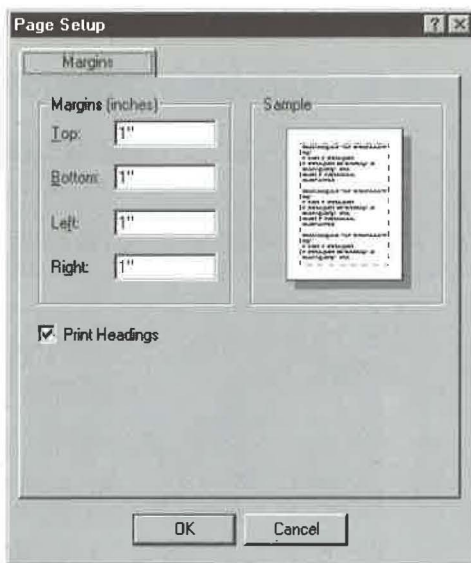
Changing the Page Setup

The Setup button in the Print dialog box takes you to the Page Setup dialog box (see Figure 9.12). From there you can choose margin settings for your printed output and choose whether to print headings or whether to print the data only—without borders, gridlines, or layout graphics.

NOTE

The options available depend on the type of object you're printing. For example, Figure 9.12 shows the Page Setup dialog box for a table that we opened in datasheet view. The Page Setup dialog box for a form or report also includes a Layout tab; the Print Data Only checkbox replaces the Print Headings checkbox on the Margins tab (see Figure 9.12).

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The Page Setup dialog box appears when you click on the Setup button in the Print dialog box. A more powerful Page Setup dialog box opens when you choose File ➤ Page Setup from the menu bar.

You can reach a more powerful Page Setup dialog box than the one shown in Figure 9.12 by choosing File ➤ Page Setup from the menu bar. When you use the menu bar options, you can change the page margin and header settings (from the Margins tab) and you can change various printer settings and properties (from the Page tab). If you're printing a form or report, you'll also find a Columns tab, which lets you control such things as the distance between rows of data on a report.

Changing Printer Properties

If you want to change the properties for the currently selected printer, click on the Properties button in the Print dialog box. Or if you choose File ➤ Page Setup, click on the Page tab, click the Use Specific Printer option, click on the Printer button, select a printer (if necessary), and then click on the Properties button.

Figure 9.13 shows the Paper tab of the Properties dialog box for an HP LaserJet III printer. Other types of printers will have different tabs and property settings.

> **TIP**
>
> For even more control over your printer's properties, click on the Start button on the Windows Taskbar and choose Settings ➤ Printers (or use any equivalent techniques for opening the Printers window). Then right-click on the printer you want to customize and choose Properties. Changes that you make by starting from the Printers window affect printer properties for *all* Windows programs, not just Access.

FIGURE 9.13

The Properties dialog box for an HP LaserJet III printer.

You use the Properties dialog box for a printer the same way you use properties dialog boxes for other objects in Windows:

1. Click on the tab for the property you want to change.
2. Set any options you want on the selected tab. If you're unsure about what to do, click on the ? button in the upper-right corner of the Properties dialog box, and then click on the option or button you need help with.
3. Repeat steps 1 and 2 as needed.
4. Click on any of the buttons described below:

   - **To display copyright information and the printer driver version number**, click on the About button in the Paper tab. Click on OK to close the About dialog box.
   - **To restore the settings to their factory defaults**, click on the Restore Defaults button in any tab that offers it.
   - **To apply the settings you've chosen so far**, click on Apply.

5. Click on OK when you're done choosing printer Properties.

Making Your Print Settings Stick

At first glance, it's downright tricky trying to figure out which print settings will stick each time you print and which won't. These tips can help you:

- Changes made in the Print dialog box are always temporary; the next time you open the Print dialog box (File ➤ Print or Ctrl+P) the default settings reappear.

- Changes made from the Page Setup dialog box or printer Properties dialog box are stored with each form and report and will take effect anytime you open the form or report and print. (This is true whether you get to those dialog boxes from the Print dialog box or the File ➤ Page Setup menu options.)

- Print settings are always returned to the defaults after you print and close a table, query, or module. That is, changes you make in the Print, Page Setup, or printer Properties dialog boxes are discarded after you print and close the table or query.

Printing Tips

Here are some tips that should come in handy whenever you're printing from datasheet or form view:

- If you customize datasheet view before printing, your printout will show the custom datasheet.
- The Print Preview window will reflect any changes that you make via the Page Setup dialog box (File ➤ Page Setup).
- If you've created a shortcut to an Access object on the Windows desktop or in a folder, you can quickly preview, print, or send the object via e-mail. First locate the shortcut and then right-click on it. Then choose Preview, Print, or Send To ➤ Mail Recipient from the shortcut menu.
- In Windows 95, you can print by dragging the shortcut icon for your Access object to a printer icon. To locate your printer icons, open My Computer and double-click on the Printers folder; or click on the Start button on the Windows Taskbar, and choose Settings ➤ Printers. Or open Control Panel (Start ➤ Settings ➤ Control Panel) and double-click on the Printers folder.

See Chapter 1 for information about creating shortcuts from Access objects.

What's New in the Access Zoo?

The folks at Microsoft added some new features to Access for Windows 97 for viewing data. These include

- Filter by Input, which lets you filter records from a field's shortcut menu;

you can use comparison operators, wildcards, or functions in the filter expressions.

- More powerful Print Preview with new options for previewing multiple thumbnail pages and zooming.

Where to Go from Here

This chapter has presented a potpourri of procedures for sorting, searching, filtering, and printing data in datasheet view and form view. The next step is to learn about queries, which let you ask questions about data and change data automatically. If you feel comfortable using the Advanced Filter/Sort features described in this chapter, queries will seem easy.

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Chapter

10

Querying Your Tables

FEATURING