

# AN OVERVIEW OF ACCESS

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# 2

In Chapter 1, you learned basic database concepts. This chapter, on the other hand, is specific to Access (now called *Microsoft Office Access*).

Some caveats are in order. Unless you've previously used another high-end table-based database, you'll find Access to be a difficult program to learn and use. Unlike the other main applications in Microsoft Office (Word, Excel, PowerPoint, and Outlook), Access is not a program that is immediately obvious and understandable.

Before starting this book, I leafed through half a dozen elementary books on Access and discovered a commonality among them. Not one provided a comprehensive overview of the program or its terminology. Thus, my intent in this chapter is to start you off right by showing you *The Big Picture*—how Access works, how its many components fit together, and how you will eventually use them to create, modify, and enter data in databases. Once you see how the pieces of this software puzzle fit together, it is my hope that the more specific material presented in later chapters won't confuse you.

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## Key Concepts and Features

The following sections will help familiarize you with Access' basic concepts and features.

### Tables and datasheets

Regardless of the method used to create an Access database, the immediate result is at least one table. A *table* is a repository for data. The expression of a table is called a *datasheet*, a worksheet-like arrangement of rows and columns (Figure 2.1). Each row is a single record and each column is a single field.

If you don't mind their simple format, you can use datasheets to perform all common database activities, such as adding, deleting, and editing records; sorting; and filtering the data to display only records that meet your criteria. Adding and deleting fields, as well as changing a field's data type, are also done in the datasheet.

### Related tables

Because Access is a relational database, each table generally stores data on only one topic, such as address information, delivery services, or catalog items. To enable you to relate tables to one another, you create a primary key field for each table.

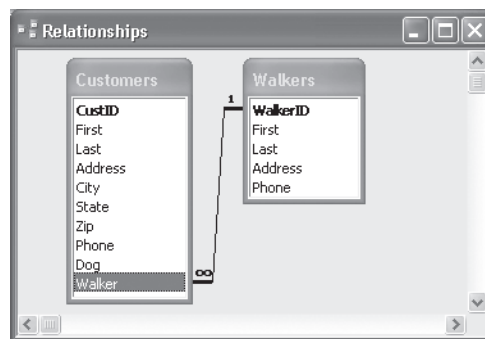
A *primary key field* is one that contains a unique number for every record. The number can be assigned by Access whenever a new record is created. Or if you have an existing unique numbering system, such as part numbers or Social Security numbers, you can make that field the primary key.

Relationships are graphically created and managed in the Relationships window (Figure 2.2). A relationship is defined by a pair of matching fields in two tables. In the main table, the field is the primary key. In the other table, it's an ordinary field referred to as a *foreign key*. The names of the matching fields are unimportant. However, both fields must contain the same type of data.

CustID	First	Last	Address	City	State	Zip	Phone	Dog	Walker
1	Susan	Smith	1945 Jemiah Rd.	Wendover	MA	01354	453-0029	Heather	3
2	Marcia	Johnson	670 Marsh Place	Wendover	MA	01357	453-7741	Suze	3
3	Robert	Anderson	4302 Soritag St.	Wendover	MA	01355	453-9989	Zippy	3
4	James	Anders	55 Aspen Rd.	Obersham	MA	01390	925-9923	Abbie	2
5	James	Marchan	545 Oak Street	Obersham	MA	01390	764-9264	Charlie	1
6	Reed	Withers	45 Hannah Rd.	Walham	MA	01299	467-6988	Frisky	2
7	Thomas	Crown	3465 Unah Way	Walham	MA	01289	453-4423	Tasha	1
	(Number)								0

Navigation controls

**Figure 2.1** This is a typical datasheet. Note the controls for navigating among records.



**Figure 2.2** In this two-table dog walker database, the relationship is the match between the Walker and WalkerID fields. Every customer has one dog walker, and every walker can have multiple customers.

### Databases and Projects

In addition to the databases discussed in this book, you can also create Access projects. A *project* provides a means of interacting with data tables stored on a Microsoft SQL (Structured Query Language) server. Projects are not discussed in this book.

Open the Customers form

**Figure 2.3** This simple form is designed to gather basic employee data. Note that unlike datasheets, forms can contain special items, such as buttons and graphics.

Category      Subform data

**Figure 2.4** This subform displays all products for the selected category.

Sorted, filtered datasheet

CustomerID	First	Last	Address	City	State	Zip	Phone	Dog
3	Robert	Anderson	4302 Sertag St	Wendover	MA	01355	453-9959	Zippy
2	Marcia	Johnson	670 Marsh Place	Wendover	MA	01357	453-7741	Suze
1	Susan	Smith	1845 Jorah Rd.	Wendover	MA	01354	453-0029	Heather

Sorting and filtering criteria

**Figure 2.5** You can create an Advanced Filter/Sort that includes filtering criteria and sort instructions. In this example, only records with Wendover as the City are displayed, sorted by the Last and First fields.

## Custom forms

While you can certainly perform data entry chores using datasheets, things can occasionally get messy—particularly when a database involves many tables. To enter an order for a new customer, for example, you might have to enter data in several datasheets.

To make data entry easier, Access lets you create *forms* (Figure 2.3): layouts that show only the fields for which you want to gather data, arranged in an attractive manner. Forms can also display data from related tables. While the form backgrounds that Access provides vary from boring to ugly, you can use your own patterns or pictures, if you prefer.

Forms can also include subforms. A *subform* shows related data from another table or query. For example, the Northwind sample database has a Categories form that uses a subform to show all products for a given category (Figure 2.4). The subform data is taken from the Products table.

## Sorting, filters, and queries

By default, datasheets and forms display all records in their normal sort order; that is, arranged in order of the primary key field. Because this isn't always the way you'd like to view the data, you can use Access features to change the sort order or display only a subset of records (Figure 2.5).

You can sort by one or several fields in ascending or descending order. When sorting by multiple fields, you specify the most important field first. For example, you might sort an address table on City, Last Name, and First Name fields.

To specify a data subset to view, you can apply a *filter* (showing only records that contain CA in the State field, for example) or construct a complex *query* containing many criteria. Sort and filtering instructions are specific to the database object for which they were created.

## Reports

Access reports present and summarize data. Rather than viewing records one at a time or in a scrolling list as you'd do with forms or datasheets, you can display all of your data (or a selected subset) in an easy to comprehend fashion (**Figure 2.6**). You can also specify one or multiple sort fields, as well as grouping fields. The latter enable you to automatically split the data into convenient groups, such as months (examining purchases over the current year, for example) or sales regions.

## PivotTables and PivotCharts

Access has some data analysis features not commonly found in database software. First, using Microsoft Graph (an integrated component of Office), you can create colorful graphs and charts from selected data. Second, you can also generate interactive tables (PivotTables) and charts (PivotCharts). Based on a statistical function known as a crosstab, PivotTables (**Figure 2.7**) and PivotCharts allow you to view one field broken down by another. For example, you could create a PivotTable or PivotChart to show the breakdown of employee rank by sex. You can also add grouping levels for more detailed breakdowns.

## Data access pages

Any database can be opened for use by one person (*exclusive mode*) or multiple users on a network (*shared mode*). You can also post a database on the Internet or a company intranet to allow others to access it.

If you want people to be able to view but not interact with your database, you can export all or part of a table as a static HTML (*Hypertext Markup Language*) page (**Figure 2.8**) that's viewable by anyone with a Web browser. If you prefer that the data be live and interactive, you can publish it as a *data access page* that's accessible via a Web browser.

Walkers							
WalkerID	1	Walker_Phone	453-1198				
Walker_First	Steve						
Walker_Last	Simms						
Walker_Address	427 Jones Dr.						
Customers	CustID	Customers_Customer	Customers_Customer_Dog				
Crown	7	Thomas	3465 Uriah	453-4423	Tasha		
Marchan	5	James	546 Oak Str	453-9264	Charlie		
WalkerID	2	Walker_Phone	453-2201				
Walker_First	Marsha						
Walker_Last	Jameson						
Walker_Address	517 Jones Dr.						
Customers	CustID	Customers_Customer	Customers_Customer_Dog				
Anders	4	James	55 Aspen Rd	453-9923	Abbie		
Withers	6	Reed	45 Hannah	453-6688	Frisky		
WalkerID	3	Walker_Phone	453-0016				
Walker_First	Sally						
Walker_Last	Abrams						
Walker_Address	1845 Apple Rd.						
Customers	CustID	Customers_Customer	Customers_Customer_Dog				
Anderson	3	Robert	4302 Sorlag	453-9989	Zippy		
Johnson	2	Marcia	670 Mariah	453-7741	Suze		
Smith	1	Susan	1846 Jonah	453-0029	Heather		

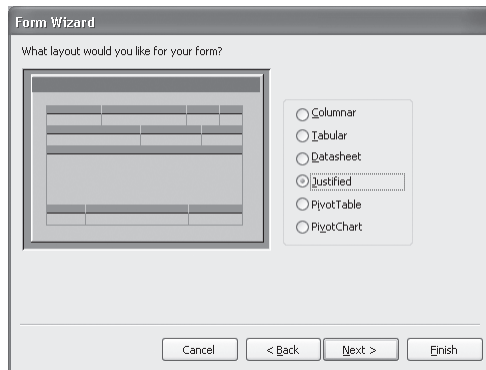
**Figure 2.6** Reports present data in ways that make it simple to understand and draw conclusions.

Month	Expense Amt	Grand Total
Jan	\$45.50	\$45.50
Feb	\$43.88	\$43.88
Mar	\$32.50	\$32.50
Apr	\$31.53	\$124.83
May	\$50.38	\$90.33
Jun	\$25.88	\$25.88
Jul	\$31.53	\$81.89
Aug	\$40.30	\$40.30
Sep	\$44.85	\$44.85
Oct	\$77.68	\$252.00
Nov	\$42.58	\$42.58
Dec	\$46.50	\$46.50
Grand Total	\$50.36	\$511.91

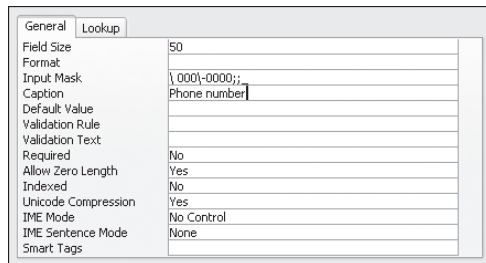
**Figure 2.7** This PivotTable shows the breakdown of car expenses by month.

CustID	Customers_First	Customers_Last	Address	Customers_Phone	Dog	WalkerID	Walkers_First	Walkers_Last	Walkers_Phone
1	Dean	Loth	1845 Jonah Rd.	453-0029	Heather	3	Sally	Johnson	453-0016
2	Sheloch	Johnson	670 Mariah Road	453-7741	Zepp	2	Sally	Johnson	453-9918
3	Robert	Anderson	4302 Sorlag St.	453-9989	Zepp	3	Sally	Johnson	453-0016
4	James	Anders	55 Aspen Rd	453-9923	Abbie	4	Marsha	Jameson	453-2201
5	Susan	Marchan	546 Oak Street	453-9264	Charlie	5	James	Simms	453-1198
6	Reed	Withers	45 Hannah Rd.	453-6688	Frisky	6	Marsha	Jameson	453-2201
7	Thomas	Crown	3465 Uriah Rd.	453-4423	Tasha	7	Steve	Simms	453-1198

**Figure 2.8** You can create a static HTML table from any data table.



**Figure 2.9** Wizards help you create new objects by presenting options to you in a series of dialog boxes.



**Figure 2.10** Open a table in Design View to examine or change field properties.

## Wizards

Although you can manually design any table, form, chart, or report, Access provides tools called *wizards* that step you through the process. For example, if you'd rather not draw fields on a blank layout to create a custom form, the Form Wizard (**Figure 2.9**) allows you to select fields from lists and then automatically arranges them in one of several predefined layouts.

Until you become adept at manually designing Access objects, it's a good idea to take advantage of the wizards. Even if the wizard result isn't perfect, it's often easier to edit it than to create an object from scratch.

## Objects, controls, and properties

Every major element in Access is an *object*—whether it be a table, form, report, query, data access page, or macro. The types of objects that you can create are listed in the Database window.

*Controls* are placed within objects. Examples include fields, list boxes, and option groups for collecting data. Controls such as these that have a specific data source are called *bound controls*. Static text, lines, and other elements that are not tied to a data source are called *unbound controls*.

Objects and controls all have *properties* that you can set or modify. Examples of properties include Format, Decimal Places, and Width (for a field on a form); and On Click and Display When (for a button on a switchboard). To view or alter the properties of any object and its controls, open the object in Design View.

### ✓ Tip

- To modify critical properties of a field (such as its length or data type), open its table in Design View (**Figure 2.10**). This is also where you create and delete fields.

## The Access Interface

The following sections explain the parts of the Access interface and how to use them.

### The Startup Task Pane

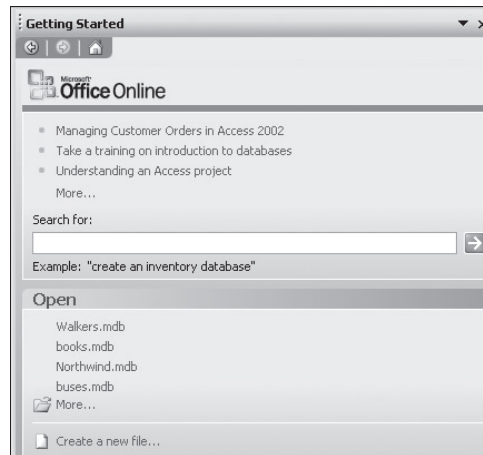
When you launch Access from the Start menu, the Startup Task Pane (**Figure 2.11**) is the first thing you see. (Note that if you launch Access by opening a database, the Startup Task Pane doesn't appear.) You can initiate the following tasks by clicking text links in the pane:

- ◆ View training materials from Office Online
- ◆ Search for help on a topic by entering a keyword, phrase, or question
- ◆ Open a recently used database by clicking its file name
- ◆ Open any other database by clicking More
- ◆ Create a new database

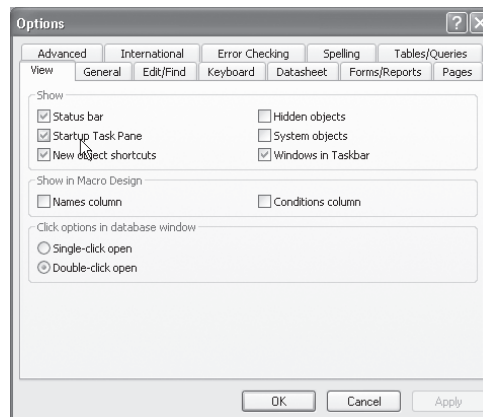
After opening a database, the Startup Task Pane automatically closes. You can also close the pane manually by clicking its close box.

#### ✓ Tip

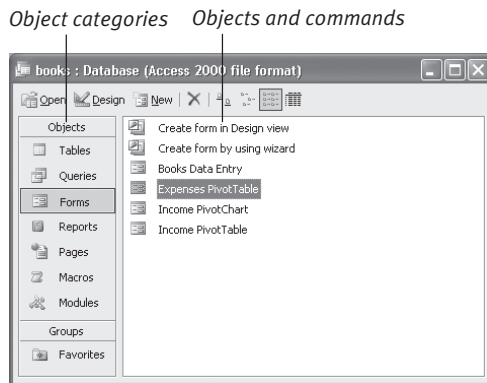
- If you'd rather not see the Startup Task Pane when you launch Access, choose Tools > Options, click the View tab, and remove the checkmark from Startup Task Pane (**Figure 2.12**).



**Figure 2.11** You can open a database, create a new database, or request help in the Startup Task Pane.



**Figure 2.12** You can turn off the automatic display of the Startup Task Pane.



**Figure 2.13** Select an object category from the list on the left and then double-click an object or command in the list on the right.

## The Database window

After you open a database, the most important component of the Access interface appears: the Database window (**Figure 2.13**). Think of it as Access Command Central. From the Database window, you can open datasheets, forms, reports, and queries for data entry, viewing, or design changes.

Down the left side of the window is the Objects list. Click an object category to list all defined objects of that type in the right side of the window. To open a listed item, double-click it. Other things that you can do in the Database window include the following:

- ◆ Create a new object of the selected type (Forms or Reports, for example) by clicking the New toolbar icon or by double-clicking any of the Create entries in the right-hand side of the window.
- ◆ Delete any database object that's no longer needed. Select the object, and either click the Delete toolbar icon or press **[Del]**.
- ◆ Change the design of any object (adding fields to a table, changing field data types, or modifying a form, for example). Select an object and click the Design toolbar icon.
- ◆ Change the name of an object by right-clicking it and choosing Rename.

### ✓ Tips

- Closing the Database window is the same as closing the current database. Leave it open or minimized until you're ready to close the current database.
- Only one database can be open at a time. Normally, you will close the current database before opening another. If you need to view multiple databases, you can run multiple Access sessions by opening additional databases from the Desktop.

## Menus and toolbars

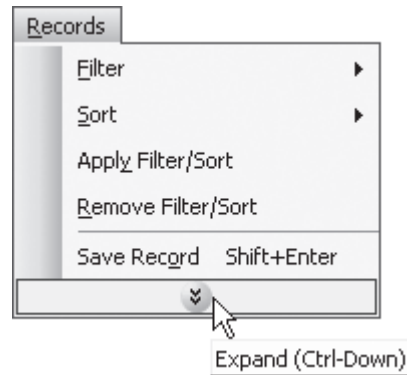
Menus and toolbars in Access work as they do in other Windows applications. For instance, as you switch from one task to another, Access automatically displays appropriate menus and toolbars. There are, however, two differences.

The first difference is that—in order to prevent new users from being overwhelmed by the number of commands in each menu—Access can present abbreviated menus that show only the commands you’ve recently used (**Figure 2.14**). The behavior of the Expand indicator at the bottom of each menu is governed by a setting on the Options tab of the Customize dialog box (**Figure 2.15**).

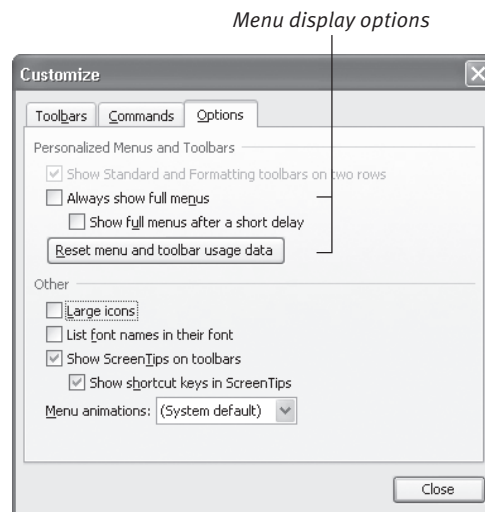
The second difference is that Access actively tracks the commands and toolbar elements that you use. This data is used to continually modify the menus and toolbars to match your usage patterns.

### ✓ Tips

- To change the toolbars that are displayed, choose Tools > Customize, click the Toolbars tab of the Customize dialog box, and check the toolbars that you want to show.
- In Access, you can customize the standard toolbars and menus, as well as create new ones. For instructions, refer to Chapter 20.



**Figure 2.14** To expand an abbreviated menu, click this Expand indicator or rest the cursor on it (depending on the settings in the Customize dialog box shown in Figure 2.15).

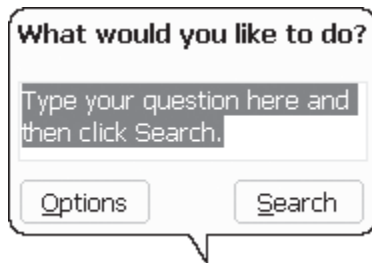


**Figure 2.15** You can choose between showing full and abbreviated menus. With abbreviated menus, you can also set how they will expand: automatically or only when clicked.

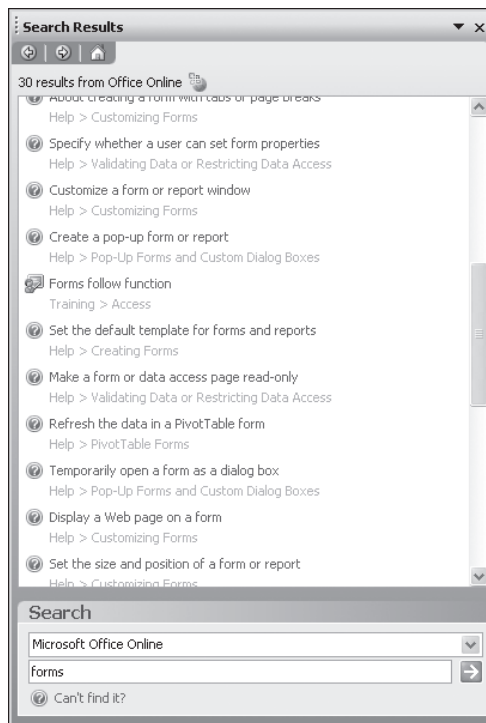




**Figure 2.16** This text box is always available for help questions.



**Figure 2.17** This Office Assistant text box can also be used to request help.



**Figure 2.18** Results of all help searches appear as entries in this Search Results pane.

## Requesting Help

Regardless of where you are in Access at the moment, there are several ways for you to request assistance. While you will usually enter search questions and phrases for Microsoft Office Access Help (described below), you can also do the following:

- ◆ In the top section of the Startup Task Pane (see Figure 2.11), click a tutorial topic.
- ◆ To visit Microsoft's Web site, choose Help > Microsoft Office Online.

After you've begun using the program, you'll find that most of the help information is in Microsoft Office Access Help. Access offers many ways for you to open and search for information in Microsoft Office Access Help, as described in the following lists.

### To request assistance from Microsoft Office Access Help:

1. *Do one of the following:*
  - ▲ Open the Access Help pane by choosing Help > Microsoft Office Access Help, pressing (F1), or clicking the Microsoft Office Access Help toolbar icon. Then type a question or search string in the Search for text box.
  - ▲ In the top section of the Startup Task Pane (see Figure 2.11), enter a search string in the text box.
  - ▲ Type a question or search string in the box at the top of the document window (**Figure 2.16**).
  - ▲ Click the Office Assistant, type a question or search string in its text box (**Figure 2.17**), and click Search. (If the Office Assistant isn't visible, choose Help > Show the Office Assistant.)

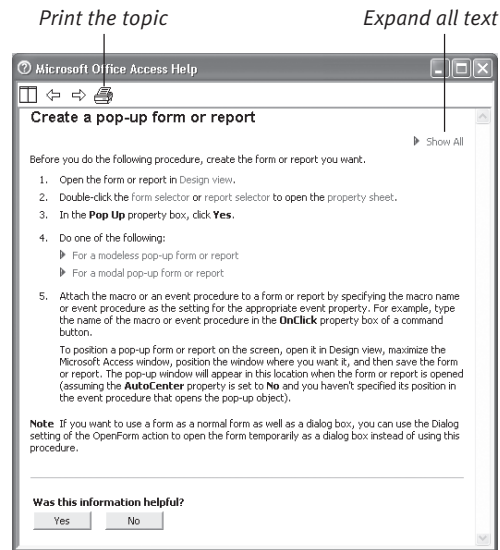
Results are displayed in the Search Results pane (**Figure 2.18**).

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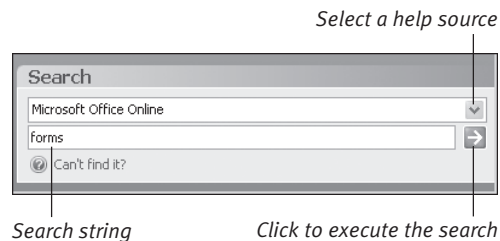
2. Do any of the following:
  - ▲ To review a result, click the blue text link. The help text appears in a new pane (**Figure 2.19**).
  - ▲ Click any gray text link that's preceded by *Help >* to open the Table of Contents to that help entry.
  - ▲ To go forward or backward through the pane pages you've viewed, click the arrow icons at the top of the pane.
  - ▲ To change the help source being searched (switching from Microsoft Office Online to Offline Help, for example), click the down-arrow in the Search section of the pane, choose the help material to search, and click the Start Searching button (**Figure 2.20**).
3. With the help text displayed (see **Figure 2.19**), you can do any of the following:
  - ▲ Click any blue text string to view the word or phrase's definition.
  - ▲ Click any blue topic that's preceded by a triangle to show/hide the topic text.
  - ▲ Click Show All/Hide All to show or hide all topic text and definitions.
  - ▲ Click the Print icon at the top of the pane to print the help text. (Expand any desired topics or definitions prior to clicking the Print icon.)

✓ **Tip**

- To avoid paper waste, you can restrict help printouts to only selected text. Click and drag within a help topic to select text, click the Print icon, and then click the Selection radio button in the Print Range section of the Print dialog box.



**Figure 2.19** A clicked Help result appears in this pane.



**Figure 2.20** In the Search section of the Search Results pane, you can select a different source of help information to search.