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Microsoft Windows 7 Unleashed

ISBN-13: 978-0-6723-3069-8
ISBN-10: 0-672-33069-5

Library of Congress Cataloging-in-Publication Data:

McFedries, Paul.

Microsoft Windows 7 unleashed / Paul McFedries.

p. cm.

ISBN 978-0-672-33069-8

1. Microsoft Windows (Computer file) 2. Operating systems (Computers) I. Title.

QA76.76.O63M398163 2010

005.4'46—dc22

2009024027

Printed in the United States of America

First Printing: July 2009

Trademarks

Warning and Disclaimer

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About the Author

Paul McFedries is a full-time technical author who has worked with computers in one form or another since 1975 and has used Windows since version 1. He is the author of more than 60 computer books that have sold over three million copies worldwide. His recent titles include the Sams Publishing book *Microsoft Windows Home Server Unleashed* and the Que Publishing books *Tweak It and Freak It: A Killer Guide to Making Windows Run Your Way, Networking with Microsoft Windows Vista,* and *Build It. Fix It. Own It: A Beginner's Guide to Building and Upgrading a PC*. Paul is also the proprietor of Word Spy (www.wordspy.com), a website devoted to tracking new words and phrases as they enter the English language. Please visit Paul's personal website at www.mcfedries.com or follow him on Twitter at twitter.com/paulmcf and twitter.com/wordspy.

Dedication

For Karen, of course, and for Gypsy, the Dog Unleashed!

Acknowledgments

I've been writing computer books for more than 18 years now (ouch!), which is a long time to do *anything*, much less something that exercises the old noodle the way researching and writing a computer book does. Despite that, however, I still leap out of bed most mornings and can't wait to get my hands on the keyboard once again and start tapping away.

Maintaining enthusiasm for your job is never easy, but it sure helps when you get to work with some amazingly smart, talented, and nice people. I speak, of course, of the bright lights who populate the Que editorial department, who are as awesome a collection of Hoosiers as you're ever likely to meet (assuming you come across Hoosier collections regularly). In particular, I'd like to extend my heartfelt and profuse thanks to the editors I worked with directly on this book, including Acquisitions Editor and Development Editor Rick Kughen; Project Editor Jennifer Gallant; Copy Editor Keith Cline; and Technical Editor Mark Reddin. Thanks to all of you for the excellent work.

We Want to Hear from You!

As the reader of this book, *you* are our most important critic and commentator. We value your opinion and want to know what we're doing right, what we could do better, what areas you'd like to see us publish in, and any other words of wisdom you're willing to pass our way.

As an associate publisher for Sams Publishing, I welcome your comments. You can email or write me directly to let me know what you did or didn't like about this book—as well as what we can do to make our books better.

Please note that I cannot help you with technical problems related to the topic of this book. We do have a User Services group, however, where I will forward specific technical questions related to the book.

When you write, please be sure to include this book's title and author as well as your name, email address, and phone number. I will carefully review your comments and share them with the author and editors who worked on the book.

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Introduction

We shall not cease from exploration
And the end of all our exploring
Will be to arrive where we started
And know the place for the first time.
—T. S. Eliot

Well, *that* was easy. After the "two steps forward, one step back" development process of Windows Vista, after the interminable Vista beta releases, and after the hype and hoopla that accompanied the Vista release, Windows 7 seemed to arrive on our digital doorsteps fully formed, like a kind of electronic Athena from the skull of some programming Zeus (or something like that).

The development and release of Microsoft's latest bouncing-baby operating system was nothing like its older sibling, but does that mean that Windows 7 itself is nothing like Windows Vista? Actually, in many ways, that's true. Sure, if you're familiar with Windows Vista, you'll have a relatively benign learning curve with Windows 7. But Microsoft didn't spend the past 3 years working on new desktop backgrounds! Windows 7 is loaded with new and changed features; some of them are almost too subtle to notice, whereas others represent veritable system sea changes.

Coincidentally (or not, depending on where you fall in the conspiracy theory spectrum), my approach to Windows has also changed in this edition of the book. Unlike in previous editions, *Windows 7 Unleashed* is *not* my attempt to cover all the features of Windows from Aero Glass to AutoPlay. Windows has simply become too big for that kind of book, and most Windows users know (or can figure out) the basics of most features. So in this edition of the book, I've changed

the focus from components (Internet Explorer, Mail, and so on) to subjects: customization, performance, power tools, security, troubleshooting, and networking, and scripting. You get in-depth and useful coverage of these seven areas that will help you unleash the full potential of Windows 7.

Who Should Read This Book

All writers write with an audience in mind. Actually, I'm not sure whether that's true for novelists and poets and the like, but it *should* be true for any technical writer who wants to create a useful and comprehensible book. Here are the members of my own imagined audience:

- **IT professionals—**These brave souls must decide whether to move to Windows 7, work out deployment issues, and support the new Windows 7 desktops. The whole book has information related to your job and Windows 7.
- **Power users—**These elite users get their power via knowledge. With that in mind, this book extends the Windows power user's know-how by offering scripts, Registry tweaks, group policy configurations, and other power tools.
- **Business users—**If your company is thinking of or has already committed to moving to Windows 7, you need to know what you, your colleagues, and your staff are getting into. You also want to know what Windows 7 will do to improve your productivity and make your life at the office easier. You learn all of this and more in this book.
- **Small business owners—**If you run a small or home business, you probably want to know whether Windows 7 will give you a good return on investment. Will it make it easier to set up and maintain a network? Will Windows 7 computers be more stable? Will your employees be able to collaborate easier? The answer turns out to be "yes" for all of these questions, and I'll show you why.
- **Home users—**If you use Windows 7 at home, you probably want to maximize performance, keep your system running smoothly, max out security, and perform customizations that make Windows 7 conform to your style. Check, check, check, check. This book's got your covered in all these areas.

Also, to keep the chapters uncluttered, I've made a few assumptions about what you know and what you don't know:

- I assume that you have knowledge of rudimentary computer concepts, such as files and folders.
- I assume that you're familiar with the basic Windows skills: mouse maneuvering, dialog box negotiation, pull-down menu jockeying, and so on.
- I assume that you can operate peripherals attached to your computer, such as the keyboard and printer.

- I assume that you've used Windows for a while and are comfortable with concepts such as toolbars, scrollbars, and, of course, windows.
- I assume that you have a brain that you're willing to use and a good supply of innate curiosity.

How This Book Is Organized

As I mentioned earlier, I've completely revamped the structure and coverage in this edition, so the next few sections offer a summary of what you'll find in each part.

Part I: Unleashing Windows 7 Customization

Your purchase of this book (a sound and savvy investment on your part, if I do say so myself) indicates that you're not interested in using Windows 7 in its out-of-the-box configuration. If you're looking to make Windows 7 your own, begin at the beginning with the five chapters in Part I. You learn how to customize Windows Explorer (Chapter 1), Internet Explorer (Chapter 2), the file system (Chapter 3), startup and shutdown (Chapter 4), and the Start menu and taskbar (Chapter 5).

Part II: Unleashing Windows 7 Performance and Maintenance

Everybody wants Windows to run faster, so you'll no doubt be pleased that I devote an entire chapter to this important topic (Chapter 6). Everybody wants Windows to run smoother, so you'll also no doubt be pleased that I devote yet another chapter to *that* important topic (Chapter 7).

Part III: Unleashing Windows 7 Power User Tools

The chapters in Part III kick your advanced Windows 7 education into high gear by covering the ins and outs of a half dozen important Windows 7 power tools: Control Panel (Chapter 8), Local Group Policy Editor (Chapter 9), Microsoft Management Console (Chapter 10), the Services snap-in (Chapter 11), the Registry Editor (Chapter 12), and Command Prompt (Chapter 13).

Part IV: Unleashing Windows 7 Security

With threats to our digital lives coming at us from all sides these days, security may just be the most vital topic in technology. So perhaps that's why Part IV is the biggest section in the book, with no less than seven chapters devoted to various aspects of Windows 7 security. Your first learn some general techniques for locking down Windows 7 (Chapter 14), and you then learn how to configure web security (Chapter 15), email security (Chapter 16), file system security (Chapter 17), user security (Chapter 18), wired network security (Chapter 19), and wireless network security (Chapter 20).

Part V: Unleashing Windows 7 Troubleshooting

Windows 7 may represent the state of Microsoft's operating system art, but it *is* still Windows, which means problems, bugs, and glitches are pretty much inevitable. The four chapters in Part V can help when the Windows demons strike. You learn general troubleshooting techniques (Chapter 21), and how to troubleshoot device (Chapter 22), startup (Chapter 23), and networking (Chapter 24).

Part VI: Unleashing Windows 7 Networking

It's a rare home or small office that doesn't have (or doesn't want to have) a network, and Part VI is a reflection of this fact (that I just made up). You learn how to set up a small network (Chapter 25), how to access and use that network (Chapter 26), how to access your network from remote locations (Chapter 27), how to use Windows 7 as a web server (Chapter 28), and how to incorporate Macs into your network (Chapter 29).

Part VII: Unleashing Windows 7 Scripting

To close out the main part of this book, Part VII takes an in-depth look at two methods for automating Windows tasks with scripts: Windows Scripting Host (Chapter 30) and Windows PowerShell (Chapter 31).

Part VIII: Appendixes

To further your Windows 7 education, Part VIII presents two appendixes that contain extra goodies. You'll find a complete list of Windows 7 shortcut keys (Appendix A), and a detailed look at the TCP/IP protocols that underlie Windows 7 networking (Appendix B).

Conventions Used in This Book

To make your life easier, this book includes various features and conventions that help you get the most out of this book and Windows 7 itself:

Steps	Throughout the book, I've broken many Windows 7 tasks into easy-to-follow step-by-step procedures.
Things you type	Whenever I suggest that you type something, what you type appears in a **`bold monospace`** font.
Filenames, folder names, and code	These things appear in a `monospace` font.
Commands	Commands and their syntax use the `monospace` font, too. Command placeholders (which stand for what you actually type) appear in an *`italic monospace`* font.
Pull-down menu commands	I use the following style for all application menu commands: *Menu, Command*, where *Menu* is the name of the menu that you pull down and *Command* is the name of the command you select. Here's an example: File, Open. This means that you pull down the File menu and select the Open command.
Code continuation character	When a line of code is too long to fit on only one line of this book, it is broken at a convenient place and continued to the next line. The continuation of the line is preceded by a code continuation character ([➥]). You should type a line of code that has this character as one long line without breaking it.

This book also uses the following boxes to draw your attention to important (or merely interesting) information:

NOTE

The Note box presents asides that give you more information about the current topic. These tidbits provide extra insights that give you a better understanding of the task. In many cases, they refer you to other sections of the book for more information.

TIP

The Tip box tells you about Windows 7 methods that are easier, faster, or more efficient than the standard methods.

CAUTION

The all-important Caution box tells you about potential accidents waiting to happen. There are always ways to mess things up when you're working with computers. These boxes help you avoid at least some of the pitfalls.

How to Contact Me

If you have any comments about this book, or if you want to register a complaint or a compliment (I prefer the latter), please don't hesitate to send a missive my way. The easiest way to do that is to drop by my website, have a look around, and post a message to the forum: www.mcfedries.com/.

If you do the Twitter thing, you can follow my tweets here: http://twitter.com/paulmcf.

CHAPTER 1

Customizing Windows Explorer

IN THIS CHAPTER

Whoso would be a man, must be a nonconformist.
—Ralph Waldo Emerson

Although I'm sure you've got countless more important things to do with your precious time, at least some of your Windows 7 face time will be spent dealing with files, folders, and other Windows "f-words." These file system maintenance chores are the unglamorous side of the digital lifestyle, but they are, regrettably, necessary for the smooth functioning of that lifestyle.

This means that you'll likely be spending a lot of time with Windows Explorer over the years, so customizing it to your liking will make you more efficient and more productive, and setting up Windows Explorer to suit your style should serve to remove just a bit of the drudgery of day-to-day file maintenance. This chapter takes you through a few of my favorite Windows Explorer customizations.

Returning the Menus to Their Rightful Place

Microsoft seems to hate pull-down menus, for some reason. Over the past few years, Microsoft has hidden the menu system in many programs, and gotten rid of it altogether in Office 2007 (although the old menu keystroke combinations still work). In those programs where the menus are merely hidden, you can display them at any time by tapping the Alt key. This works in Windows Explorer, too, and that's a good thing because Windows Explorer's pull-down menus

have several useful commands that simply aren't available through the taskbar, keyboard shortcuts, or even by right-clicking.

Still, it sticks in my craw that accessing the Windows Explorer menus requires the extra step of Alt, particularly if I'm in mouse mode. If you feel the same way, follow these steps to force Windows Explorer to display the menu bar full-time:

1. If you have a folder window open, select Organize, Folder and Search Options. (No folder windows open at the moment? Click Start, type **`folder`**, and then press Enter to select Folder Options in the search results.) The Folder Options dialog box appears.
2. Click the View tab.
3. Click to activate the Always Show Menus check box.
4. Click OK. Windows Explorer (perhaps a tad grudgingly) restores the menu bar to its rightful place.

Changing the View

The icons in Windows Explorer's content area can be viewed in no less than *eight* different ways, which seems a tad excessive, but Windows has never been about restraint when it comes to interface choices. To see a list of these views, either pull down the Views button in the task pane or click View in the menu bar. You get four choices for icon sizes: Extra Large Icons, Large Icons, Medium Icons, and Small Icons. You also get four other choices:

- **List—**This view divides the content area into as many rows as will fit vertically, and it displays the folders and files alphabetically down the rows and across the columns. For each object, Windows Explorer shows the object's icon and name.
- **Details—**This view displays a vertical list of icons, where each icon shows the data in all the displayed property columns (such as Name, Date Modified, Type, and Size). See "Viewing More Properties," later in this chapter, to learn how to add to these columns.

TIP

The default property columns you see depend on the template that the folder is using. To change the folder template, right-click the folder, click Properties, and then display the Customize tab. In the Optimize This Folder For list, choose the type you want: General Items, Documents, Pictures, Music, or Videos.

- **Tiles—**This view divides the content area into as many columns as will fit horizontally, and it displays the folders and files alphabetically across the columns and down the rows. For each object, Windows Explorer shows the object's icon, name, file type, and (for files only) size.

- NEW TO 7 **Content**—This view, new to Windows 7, displays a vertical list of objects, and for each object it displays the object's icon, name, last modified date, size (files only), and any metadata associated with the object, such as author names and tags; the album name, genre, and track length (for music; see Figure 1.1); and the dimensions and date taken (for photos).

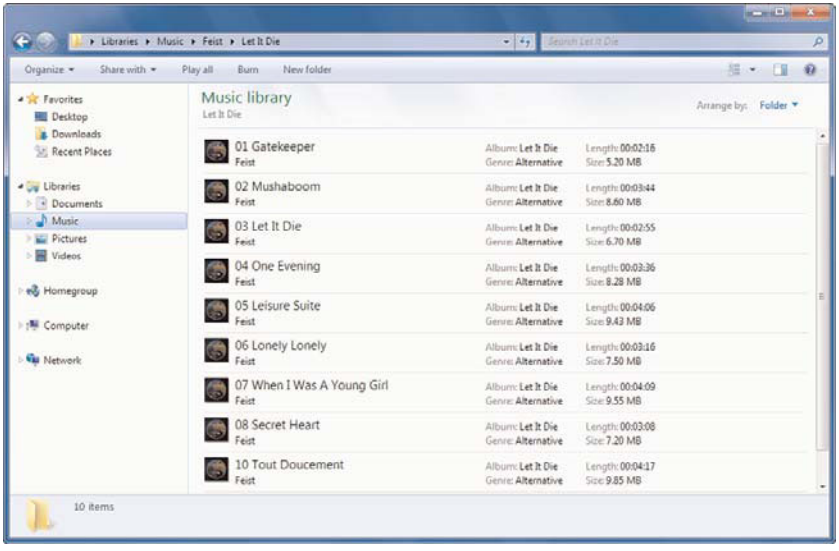

FIGURE 1.1 In Windows 7, Windows Explorer comes with a new Content view.

Viewing More Properties

Explorer's Details view is the preferred choice for power users because it displays a great deal of information in a relatively compact format. (The new Content view also provides lots of information, but each object takes up quite a bit of space, and the object properties that you see aren't customizable.) Details view also gives you a great deal of flexibility. For example, here are some techniques to you can use when working with the Details view:

- You can change the order of the property columns by dragging the column headings to the left or right.
- You can sort on a column by clicking the column heading.
- You can adjust the width of a column by pointing the mouse at the right edge of the column's heading (the pointer changes to a two-headed arrow) and dragging the pointer left or right.
- You can adjust the width of a column so that it's as wide as its widest data by double-clicking the right-edge of the column's heading.

TIP

To adjust all the columns so that they're exactly as wide as their widest data, right-click any column header and then click Size All Columns to Fit.

In addition, the Details view is informative because it shows you not only the name of each file, but also other properties, depending on the folder:

Documents—Name, Date Modified, Type, and Size

Pictures—Name, Date Taken, Tags, Size, and Rating

Videos—Name, Date Taken, Type, Size, and Length

Music—Track Name, Track Number, Track Title, Contributing Artists, and Album Title

Contacts—Name, E-mail Address, Business Phone, and Home Phone

These are all useful, to be sure, but Explorer can display many more file properties. In fact, there are nearly 300 properties in all, and they include useful information such as the dimensions of a picture file, the bit rate of a music file, and the frame rate of a video file. To see these and other properties, you have two choices:

- To see the most common properties for the current folder type, right-click any column header and then click the property you want to add.
- To see the complete property list, right-click any column header and then click More. The Choose Details dialog box that appears (see Figure 1.2) enables you to activate the check boxes for the properties you want to see, as well as rearrange the column order.

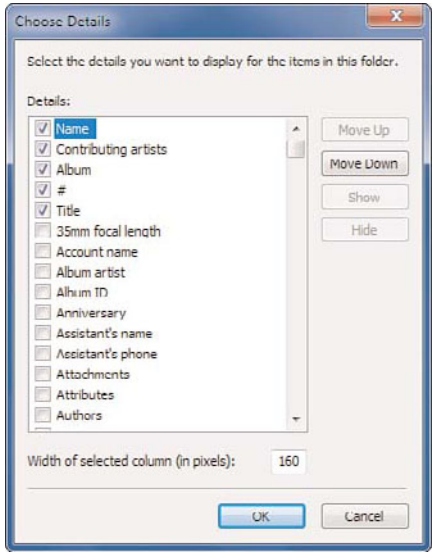

FIGURE 1.2 Use the Choose Details dialog box to add or remove property columns in Windows Explorer.

Turning On File Extensions

Microsoft figures that, crucial or not, the file extension concept is just too hard for new users to grasp. Therefore, right out of the box, Windows Explorer doesn't display file extensions. This may not sound like a big whoop, but not being able to see the extension for each file can be downright confusing. To see why, suppose you have a folder with multiple documents that use the same primary name. This is a not uncommon scenario, but it's also a fiendish one because it's often difficult to tell which file is which.

For example, Figure 1.3 shows a folder with 18 different files, all apparently named `Project`. Windows unrealistically expects users to tell files apart just by examining their icons. To make matters worse, if the file is an image, Windows 7 shows a thumbnail of the image instead of an icon. (This happens in thumbnail views such as Tiles, Medium Icons, and Large Icons.) The result is that in Figure 1.3 it's impossible to tell at a glance which image is a GIF, which is a JPEG, and so on.

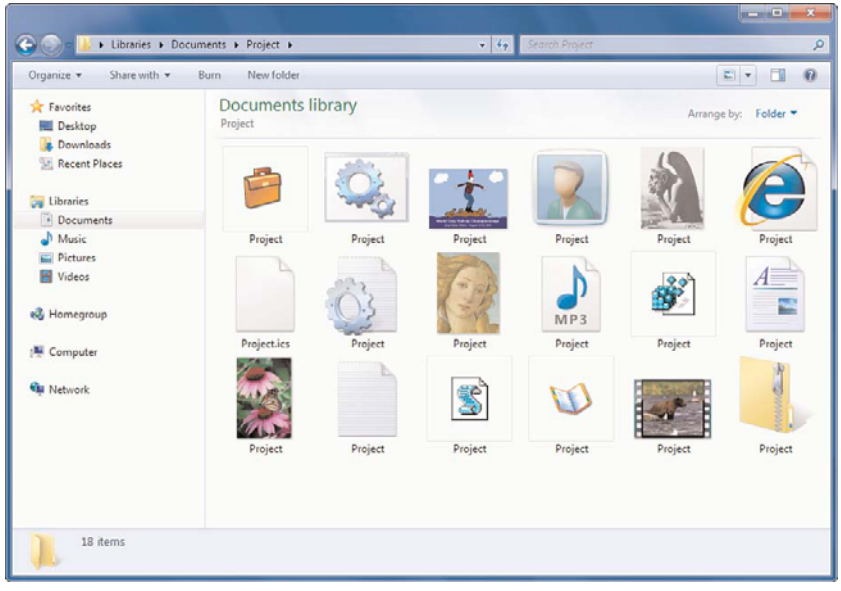

FIGURE 1.3 With file extensions turned off, it's tough to tell one file from another.

The need to become an expert in Windows iconography is bad enough, but it gets worse. Not being able to see file extensions also leads to two other problems:

- **You can't rename extensions—**For example, suppose you have a text file named `index.txt` and you want to rename it to `index.html` to make it a web page file. Nope, sorry, you can't do it with file extensions hidden. If you try—that is, if you click the file, press F2 to choose the Rename command, and then type **`index.html`**—you just end up with a text file named **`index.html.txt`**.
- **You can't save a document under an extension of your choice—**Similarly, with file extensions turned off, Windows 7 forces you to save a file using the default extension associated with an application. For example, if you're working in Notepad, every file you save must have a `.txt` extension. If you create your own web pages, for example, you can't rename these text files with typical web page extensions such as `.htm`, `.html`, `.asp`, and so on.

TIP

There is a way to get around the inability to save a document under an extension of your choice. In the Save As dialog box, use the Save as Type list to select the All Files option, if it exists. You can then use the File Name text box to type the filename with the extension you prefer to use.

You can overcome all these problems by turning on file extensions, as described in the following steps:

1. If you have a folder window open, select Organize, Folder and Search Options (or Tools, Folder Options if you have the menu displayed; otherwise, click Start, type **`folder`**, and then press Enter to select Folder Options in the search results). The Folder Options dialog box appears.
2. Click the View tab.
3. Deactivate the Hide Extensions for Known File Types check box.
4. Click OK.

Figure 1.4 shows the Project files with extensions in full display.

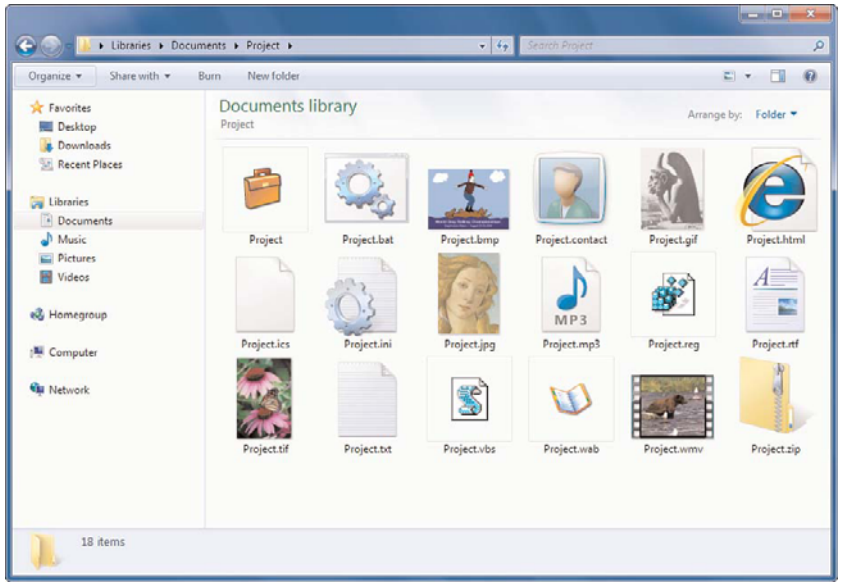

FIGURE 1.4 With file extensions turned on, it's much easier to tell the files apart.

Stopping Delete Confirmations

My biggest Windows pet peeves center around tasks that require you to jump through extra hoops that are totally unnecessary. In Windows XP, for example, clicking the Shut Down command on the Start menu doesn't shut down your computer, at least not right away. Instead, a dialog box shows up and you need to click Shut Down yet again. Dumb!

Another unnecessary dialog box that shows up in all versions of Windows is the "Are you sure you want to move this file to the Recycle Bin?" prompt that pops up when you press Delete. Now you either need to move your hand to the mouse to click Yes, or you can keep your hands on the keyboard by pressing Alt+Y. Either way, it's an extra step that just slows you down.

One way to avoid this confirmation dialog box is to click and drag the file you want to delete and then drop it on the desktop's Recycle Bin icon. That's nice to know, but most of us rarely see our desktops these days, so this method is not very practical.

A much better solution is to configure Recycle Bin to not display the confirmation dialog box at all. Here's how it's done:

1. Right-click the desktop's Recycle Bin icon and then click Properties. Windows 7 displays the Recycle Bin's property sheet.
2. Click to deactivate the Display Delete Confirmation Dialog check box.
3. Click OK to put the new setting into effect.

Now let's consider this tweak from the opposite point of view. The reason Windows displays the delete confirmation dialog box by default is to prevent you from accidentally deleting a file. You and I are savvy, knowledgeable users, so we know when we want to delete something, but not everyone falls into this boat. If you have young kids or elderly folks who use Windows, you know that the delete confirmation dialog box is an excellent safeguard for these and other inexperienced users.

In that case, you might be wondering if there's a way to ensure that a novice user *can't* turn off the delete confirmation dialog box. Yes, in fact, there is, although it's a bit harder to implement because it involves changing a policy setting on the user's computer. A *policy setting* is a kind of rule that an administrator applies to a Windows system, and that rule can't be overridden except by another administrator. To apply a policy setting, you use the Local Group Policy Editor, which I discuss in detail in Chapter 9, "Policing Windows 7 with Group Policies."

NOTE

The Local Group Policy Editor is available only with Professional, Enterprise, and Ultimate versions of Windows 7. If you're not running one of these versions, I'll show you how to perform the same tweak using the Registry (see Chapter 12, "Tweaking the Windows 7 Registry").

You can use two ways to prevent a user from turning off delete confirmations:

- Disable the Display Delete Confirmation Dialog check box that appears in the Recycle Bin's property sheet.
- Disable the Recycle Bin's Properties command so that the user can't display the Recycle Bin's property sheet.

Follow these steps to implement one of these policies:

1. On the other user's computer, click Start, type **`gpedit.msc`**, and then press Enter to select the `gpedit` program that appears in the search results.
2. Open the User Configuration branch.
3. Open the Administrative Templates branch.
4. Display the property sheet of the policy you want to use, as follows:
    - If you want to disable the Display Delete Confirmation Dialog check box, open the Windows Components branch and then click Windows Explorer. Double-click the policy named Display Confirmation Dialog When Deleting Files. If you don't have access to the Group Policy Editor, open the Registry Editor and create a DWORD setting named `ConfirmFileDelete` with the value 1 in the following key:

      ```
      HKCU\Software\Microsoft\Windows\CurrentVersion\Policies\Explorer
      ```

    - If you want to disable the Recycle Bin's Properties command, click Desktop and then double-click the Remove Properties from the Recycle Bin Context Menu

policy. If you don't have access to the Group Policy Editor, open the Registry Editor and create a DWORD setting named `NoPropertiesRecycleBin` with the value 1 in the following key:

```
HKCU\Software\Microsoft\Windows\CurrentVersion\Policies\Explorer
```

NOTE

The Remove Properties from the Recycle Bin Context Menu policy has a misleading name because, when enabled, the policy disables some but, strangely, not *all* instances of the Recycle Bin's Properties command. For example, if the user displays the desktop in a folder window and clicks Recycle Bin, the Properties command is disabled in both the Organize menu and the File menu. However, the Properties command is still enabled when you right-click the Recycle Bin icon the desktop, but choosing the command only displays an error message.

5. Click the Enabled option.
6. Click OK to put the policy into effect.

Figure 1.5 shows the Recycle Bin property sheet with the Display Confirmation Dialog When Deleting Files policy in effect. As you can see, the Display Delete Confirmation Dialog check box is activated and disabled, so the setting can't be changed.

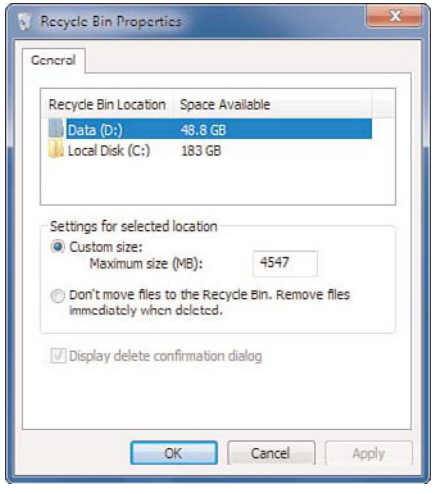

FIGURE 1.5 With the Display Confirmation Dialog When Deleting Files policy in effect, the Display Delete Confirmation Dialog check box is activated and disabled.

Running Explorer in Full-Screen Mode

If you want the largest possible screen area for the contents of each folder, you can place Windows Explorer in full-screen mode by pressing F11. (You can also hold down Ctrl and click the Maximize button; if Explorer is already maximized, you first have to click the

Restore button.) This mode takes over the entire screen and hides the title bar, menu bar, status bar, address bar, and search bar. To work with the address bar or search bar, move your mouse pointer to the top of the screen. To restore the window, either press F11 again or display the address bar and search bar and then click the Full Screen button (which is to the right of the Search box).

Exploring the View Options

Windows Explorer's view boasts a large number of customization options that you need to be familiar with. To see these options, you have two choices:

- In Windows Explorer, select Organize, Folder and Search Options (or Tools, Folder Options if you have the menu bar displayed).
- Click Start, type **`folder`**, and then press Enter to select the Folder Options item in the search results.

Either way, the view options can be found, appropriately enough, on the View tab of the Folder Options dialog box, as shown in Figure 1.6.

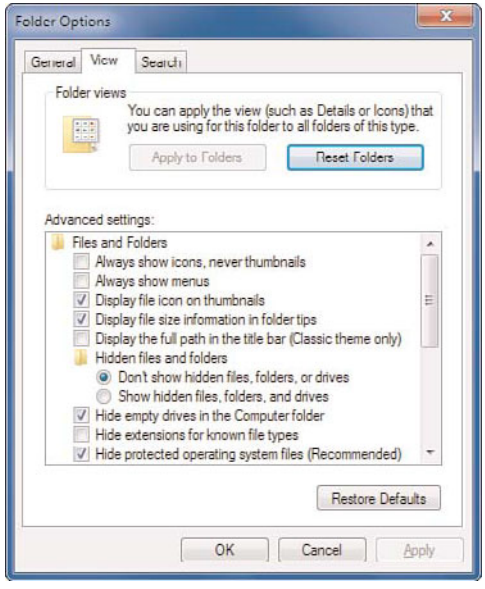

FIGURE 1.6 The View tab has quite a few options for customizing Windows Explorer.

Here's a complete list of the various items in the Advanced Settings list:

- **Always Show Icons, Never Thumbnails**—Activate this check box to prevent Windows Explorer from displaying file thumbnails. This can speed up the display of some folders that are heavy on pictures and other "thumbnail-able" file types.

- **Always Show Menus**—As you saw earlier (see "Returning the Menus to Their Rightful Place"), you activate this check box to display the menu bar full time in Windows Explorer.
- **Display File Icon on Thumbnails**—When this check box is activated, Windows Explorer superimposes the file type icon on the lower-right corner of each file's thumbnail. This is usually a good idea because the extra icon allows you to figure out the file type at a glance. However, if you find the icon getting in the way of the thumbnail image, deactivate this setting.
- **Display File Size Information in Folder Tips**—When this setting is activated and you hover your mouse pointer over a folder icon, Windows Explorer calculates the size of the files and subfolders within the folder, and displays the size in a pop-up banner. This is useful information, but if you find that your system takes too long to calculate the file size, consider deactivating this setting.

NOTE

If you activate the Display File Size Information in Folder Tips setting, you must also activate the Show Pop-Up Description for Folder and Desktop Items setting, described later.

- **Display the Full Path in the Title Bar**—Activate this setting to place the full pathname of the current folder in the Windows Explorer title bar. The full pathname includes the drive, the names of the parent folders, and the name of the current folder. Note that this only applies to Classic folders, which you activate by clicking the Use Windows Classic Folders option in the General pane.
- **Hidden Files and Folders**—Windows 7 hides certain types of files by default. This makes sense for novice users because they could accidentally delete or rename an important file. However, it's a pain for more advanced users who might require access to these files. You can use these options to tell Windows Explorer which files to display:
  Do Not Show Hidden Files, Folders, or Drives—Activate this option to avoid displaying objects that have the hidden attribute set.

  Show Hidden Files, Folders, and Drives—Activate this option to display the hidden files.

NOTE

Files are hidden from view by having their Hidden attribute activated. You can work with this attribute directly by right-clicking a visible file, clicking Properties, and then toggling the Hidden setting on and off.

- **Hide Extensions for Known File Types—**As you saw earlier (see "Turning On File Extensions"), you deactivate this setting to display file extensions.
- **Hide Protected Operating System Files—**This setting is activated by default, and it tells Windows 7 to hide files that have the System attribute activated. This is not usually a problem because you rarely have to do anything with the Windows system files. However, if you do need to see one of these files, deactivate this setting. When Windows 7 asks whether you're sure, click Yes.
- **Launch Folder Windows in a Separate Process—**Activating this setting tells Windows 7 to create a new thread in memory for each folder you open. This makes Windows Explorer more stable because a problem with one thread won't crash the others. However, this also means that Windows Explorer requires far greater amounts of system resources and memory. Activate this option only if your system has plenty of resources and memory.
- **Show Drive Letters—**If you deactivate this check box, Windows Explorer hides the drive letters in the Computer folder and in the address bar when you open a drive.

NOTE

If you hide drive letters, Windows Explorer displays drive names such as `Local Disk`. This isn't particularly useful, so consider renaming your drives. Right-click the drive and then click Rename. Note that you must enter administrator credentials to perform this operation.

- **Show Encrypted or Compressed NTFS Files in Color—**When this setting is activated, Windows Explorer shows the names of encrypted files in a green font and the names of compressed files in a blue font. This is a useful way to distinguish these from regular files, but you can deactivate it if you prefer to view all your files in a single color. Note that this only applies to files on NTFS partitions because only NTFS supports file encryption and compression.
- **Show Pop-Up Description for Folder and Desktop Items—**Some icons display a pop-up banner when you point the mouse at them. For example, the default desktop icons display a pop-up banner that describes each icon. Use this setting to turn these pop-ups on and off.
- **Show Preview Handlers in Preview Pane—**When this check box is activated, Windows Explorer includes controls for previewing certain types of files in the

Reading pane. For example, when you display a video file in the Reading pane, Windows Explorer includes playback controls such as Play, Pause, and Stop.

- **Use Check Boxes to Select Items—**Activate this check box to add check boxes beside each folder and file. You can then select objects by activating their check boxes.
- **Use Sharing Wizard—**When this check box is activated, Windows 7 uses a simplified file and folder sharing method called the Sharing Wizard. Power users will want to disable the Sharing Wizard (see Chapter 26, "Accessing and Using Your Network").

  ▶ **See** "Deactivating the Sharing Wizard," **p. 410**.

- **When Typing into List View—**These options determine Windows Explorer's behavior when you open a folder and begin typing:

  Automatically Type into the Search Box—Activate this option to have your typing appear in the Search box.

  Select the Typed Item in the View—Activate this option to jump to the first item in the folder with a name that begins with the letter you type.

Moving User Folders

By default, all your user folders are subfolders of the `%USERPROFILE%` folder, which is usually the following (where *`User`* is your username):

`C:\Users\`*`User`*

This is not a great location because it means that your documents and Windows 7 are on the same hard disk partition. If you have to wipe that partition to reinstall Windows 7 or some other operating system, you'll need to back up your documents first. Similarly, you might have another partition on your system that has lots of free disk space, so you might prefer to store your documents there. For these and other reasons, moving the location of your user folder is a good idea. Here's how:

1. Create the folder in which you want your user folder to reside.
2. Click Start, type **`c:\users\`** (replace `c` with the letter of the drive where your version of Windows 7 is installed), and then click your username in the search results. Windows 7 displays your user profile folders.
3. Right-click the user folder you want to move, and then click Properties. The folder's property sheet appears.
4. In the Location tab, use the text box to enter the full path (drive and folder name) of the folder you created in step 1. (Or click Move to select the folder using a dialog box.)
5. Click OK. If Windows Explorer asks whether you want to create the new folder and then to move your documents to the new location, click Yes in both cases.

TIP

An ideal setup is to have Windows 7 and your programs in one partition and your documents (that is, your user folders) in a separate partition. That way, your documents remain safe if you have to wipe the system partition.

Taking Ownership of Your Files

When you're working in Windows 7, you may have trouble with a folder (or a file) because Windows tells you that you don't have permission to edit (add to, delete, whatever) the folder. You might think the solution is to give your user account Full Control permissions on the folder (see Chapter 17, "Securing the File System"), but it's not as easy as that. Why not? Because you're not the owner of the folder. (If you were, you'd have the permissions you need automatically.) So the solution is to first take ownership of the folder, and then assign your user account Full Control permissions over the folder.

▶ **See** "Setting Security Permissions on Files and Folders," **p. 359**.

Here are the steps to follow:

1. Use Windows Explorer to locate the folder you want to take ownership of.
2. Right-click the folder and then click Properties to open the folder's property sheet.
3. Display the Security tab.
4. Click Advanced to open the Advanced Security Settings dialog box.
5. Display the Owner tab.
6. Click Edit.
7. In the Change Owner To list, click your user account.
8. Activate the Replace Owner on Subcontainers and Objects check box.
9. Click OK. Windows 7 warns you that you need to reopen the property sheet to change the folder's permissions.
10. Click OK in the open dialog boxes.
11. Right-click the folder and then click Properties to open the folder's property sheet.
12. Display the Security tab.
13. If you do not see your user account in the Group or User Names list, click Edit, click Add, type your username, and click OK.
14. Click your username.
15. Click the Full Control check box in the Allow column.
16. Click OK in the open dialog boxes.

Note that, obviously, this is quite a bit of work. If you only have to do it every once in a while, it's not big thing, but if you find you have to take ownership regularly, you'll probably want an easier way to go about it. You've got it! Listing 1.1 shows a Registry Editor file that modifies the Registry in such a way that you end up with a Take Ownership command in the shortcut menu that appears if you right-click any folder and any file.

NOTE

You can find the Registry Editor file (`TakeOwnership.reg`) on my website at www.mcfedries.com/Windows7Unleashed.

LISTING 1.1 A Registry Editor File That Creates a Take Ownership Command

```
Windows Registry Editor Version 5.00


[HKEY_CLASSES_ROOT\*\shell\runas]
@="Take Ownership"
"NoWorkingDirectory"=""

[HKEY_CLASSES_ROOT\*\shell\runas\command]
@="cmd.exe /c takeown /f \"%1\" && icacls \"%1\" /grant administrators:F"
"IsolatedCommand"="cmd.exe /c takeown /f \"%1\" && icacls \"%1\" /grant administra-
tors:F"

[HKEY_CLASSES_ROOT\Directory\shell\runas]
@="Take Ownership"
"NoWorkingDirectory"=""

[HKEY_CLASSES_ROOT\Directory\shell\runas\command]
@="cmd.exe /c takeown /f \"%1\" /r /d y && icacls \"%1\" /grant administrators:F /t"
"IsolatedCommand"="cmd.exe /c takeown /f \"%1\" /r /d y && icacls \"%1\" /grant
administrators:F /t"
```

To use the file, double-click it and then enter your UAC credentials when prompted. As you can see in Figure 1.7, right-clicking (in this case) a folder displays a shortcut menu with a new Take Ownership command. Click that command, enter your UAC credentials, and sit back as Windows does all the hard work for you!

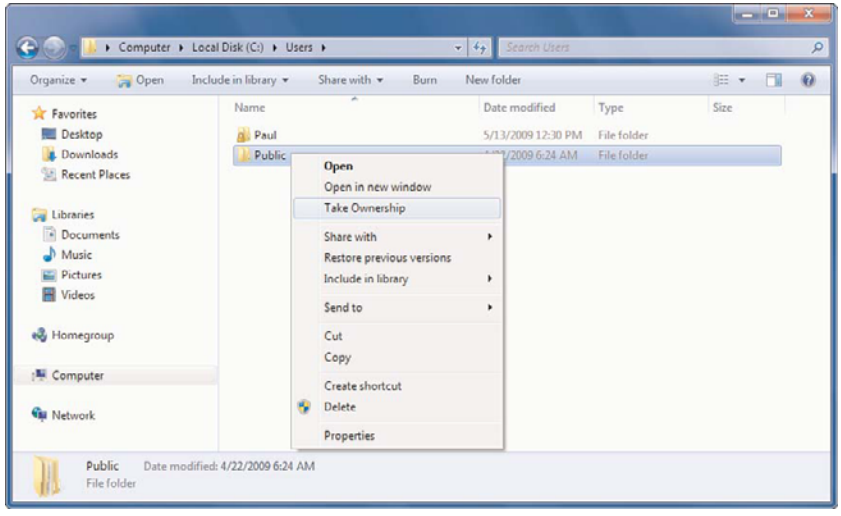

FIGURE 1.7 When you install the Registry mod, you see the Take Ownership command when you right-click a file.

Running Custom Searches

When you open a folder window, you know that you can click inside the Search box, type some text, and you get a list of files and folders that match your text. This worked well in Windows Vista, but it really rocks in Windows 7 because the latest version of the Desktop Search engine is even faster. However, simple text searches aren't going to radically boost anyone's productivity or help you find a file needle in a hard disk haystack. To take searching to the next level, you need to know about two obscure but powerful search features: Advanced Query Syntax and natural language queries.

Using Advanced Query Syntax to Search Properties

When you run a standard text search from any Search box, Windows looks for matches not only in the filename and the file contents, but also in the file metadata: the properties associated with each file. That's cool and all, but what if you want to match only a *particular* property. For example, if you're searching your music collection for albums that include the word *Rock* in the title, a basic search on *rock* will also return music where the artist's name includes *rock* and the album genre is Rock. This is not good.

To fix this kind of thing, you can create powerful and targeted searches by using a special syntax—called Advanced Query Syntax (AQS)—in your search queries.

For file properties, you use the following syntax:

```
property:value
```

Here, *property* is the name of the file property you want to search on, and `value` is the criteria you want to use. The property can be any of the metadata categories used by Windows. For example, the categories in a music folder include Name, Track, Title, Artists, Album, and Rating. Right-click any column header in Details view to see more properties such as Genre and Length, and you can click More to see the complete list.

Here are a few things to bear in mind:

- If the property name is a single word, use that word in your query. For example, the following code matches music where the Artists property is Coldplay:

  ```
  artists:coldplay
  ```

- If the property name uses two or more words, remove the spaces between the words and use the resulting text in your query. For example, the following code matches pictures where the Date Taken property is August 23, 2009:

  ```
  datetaken:8/23/2009
  ```

- If the value uses two or more words and you want to match the exact phrase, surround the phrase with quotation marks. For example, the following code matches music where the Genre property is Alternative & Punk:

  ```
  genre:"alternative & punk"
  ```

- If the value uses two or more words and you want to match both words in any order, surround them with parentheses. For example, the following code matches music where the Album property contains the words Head and Goats in any order:

  ```
  album:(head goats)
  ```

- If you want to match files where a particular property has no value, use empty braces, [], as the value. For example, the following code matches files where the Tags property is empty:

  ```
  tags:[]
  ```

You can also refine your searches with the following operators and wildcards:

`>` Matches files where the specified property is greater than the specified value. For example, the following code matches pictures where the Date Taken property is later than January 1, 2009:

```
datetaken:>1/1/2009
```

>= Matches files where the specified property is greater than or equal to the specified value. For example, the following code matches files where the Size property is greater than or equal to 10000 bytes:

```
size:>=10000
```

< Matches files where the specified property is less than the specified value. For example, the following code matches music where the Bit Rate property is less than 128 (bits per second):

```
bitrate:<128
```

<= Matches files where the specified property is less than or equal to the specified value. For example, the following code matches files where the Size property is less than or equal to 1024 bytes:

```
size:<=1024
```

.. Matches files where the specified property is between (and including) two values. For example, the following code matches files where the Date Modified property is between and including August 1, 2008 and August 31, 2008:

```
datemodified:8/1/2008..8/31/2008
```

* Substitutes for multiple characters. For example, the following code matches music where the Album property includes the word *Hits*:

```
album:*hits
```

? Substitutes for a single character. For example, the following code matches music where the Artists property begins with Blu and includes any character in the fourth position:

```
artists:blu?
```

For even more sophisticated searches, you can combine multiple criteria using Boolean operators:

AND (or +) Use this operator to match files that meet *all* of your criteria. For example, the following code matches pictures where the Date Taken property is later than January 1, 2009 and the Size property is greater than 1000000 bytes:

```
datetaken:>1/1/2009 AND size:>1000000
```

OR Choose this option to match files that meet *at least one* of your criteria. For example, the following code matches music where the Genre property is either Rock or Blues:

```
genre:rock OR genre:blues
```

NOT (or –) Choose. For example, the following code matches pictures where the Type property is not JPEG:

```
type:NOT jpeg
```

NOTE

The Boolean operators AND, OR, and NOT must appear with all-uppercase letters in your query.

Using Natural Language Queries

In the preceding section, I showed you how to use advanced query syntax to create powerful search queries. The only problem is that it's a chore having to memorize all those operators and what they're used for. If you're not up for all that, Windows 7 offers an alternative. It's called *natural language search*, and it enables you to perform complex searches without using *any* operators. Sweet!

First, follow these steps to turn on natural language search:

1. If you have a folder window open, select Organize, Folder and Search Options (or Tools, Folder Options if you have the menu displayed; otherwise, click Start, type **`folder`**, and then press Enter to select Folder Options in the search results). The Folder Options dialog box appears.
2. Select the Search tab.
3. Activate the Use Natural Language Search check box.
4. Click OK to put the new setting into effect.

Crafting natural language queries is a bit of a black art because Microsoft has no documentation available. Feel free to experiment to get the feel of these queries.

A basic natural language query looks like this:

```
adjective kind verb value
```

Here, *`adjective`* is an optional value that narrows down the search, usually by using a value from a property (such as a genre for music or a file type for images); *`kind`* is the type of file, such as `music` or `images`; `verb` is a verb that more or less corresponds to the property you want to match, such as *modified* (the Date Modified property), *(the Date Created property),* `from` (the From property in an email), and `by` (the Artist property in a music file); and *`value`* is the specific value you want to match.

For example, if you want to return all the pop music done by the band Sloan, you'd enter the following query:

```
pop music by sloan
```

Similarly, if you want all the JPEG images that were created today, you'd use the following query:

```
jpeg images created today
```

You can keep adding more properties and values to target your searches. For example, if we want our Sloan search to return only those songs rated with five stars, we'd modify the search as follows:

```
pop music by sloan rating *****
```

You can still perform Boolean searches in natural language queries. For example, if you want documents where the Author property includes *Paul* or *Karen*, you'd use the following query:

```
documents by paul or karen
```

Similarly, if you want to return all your videos except those in the QuickTime format, you'd use the following:

```
videos not quicktime
```

NOTE

Unlike with AQS, the Boolean operators `or` and `not` can appear in lowercase letters. (The Boolean operator `and` is implied in all multiterm natural language queries, so you never have to use it.)

Finally, note that when you're working with dates, there are several keywords you can use in your natural language queries, including the following: `yesterday`, `today`, `tomorrow`, `week`, `month`, `year`, `last`, `this`, and `next`. For example, if you want to see all the TIFF images created this week, you'd use the following:

```
jpeg images created this week
```