1.2 Windows, Folders, and Files

This preliminary section presents some terms used in this book.

Windows and Its Little Windows

Windows gets its name from the way it organizes the screen into rectangular regions. When you run a program, the program runs inside a bordered rectangular box. Unfortunately Windows jargon calls these *windows*, so there's only a lowercase "w" to distinguish them from the operating system called Windows. Figure 1.2 shows the window that results from running one of the programs in this book. In Visual Basic terminology, such a window is also called a **form**.

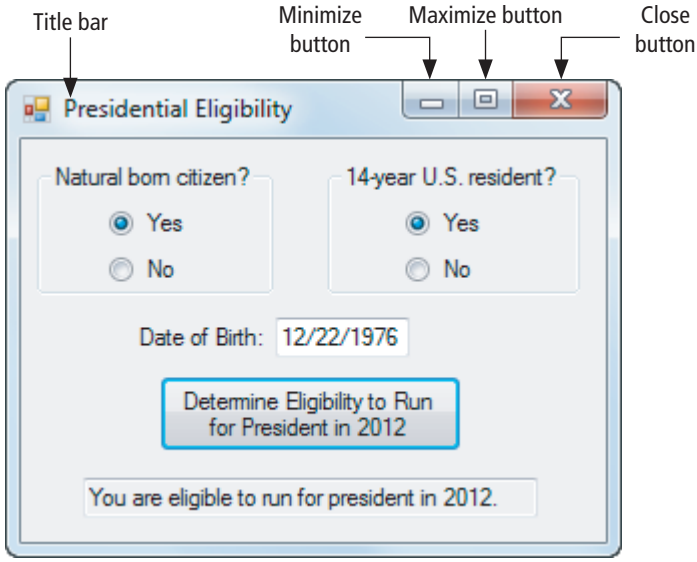

FIGURE 1.2 A Visual Basic window.

Mouse Actions

Hover: Linger the mouse at a particular place and wait for a message (such as a tooltip) to appear.

Drag an object: Move the mouse pointer until it is at the object, press the left mouse button and hold it down, move the mouse pointer until the object moves to where you want it to be, and finally, release the mouse button. (Sometimes this whole activity is called *drag-and-drop*.)

Right-click: Press and release the right mouse button once.

Click: Press and release the left mouse button once. (sometimes referred to as *single-click* or *left-click*)

Double-click: Click the left mouse button twice in quick succession.

Note: An important Windows convention is that clicking selects an object so you can give Windows further directions about it, but double-clicking tells it to perform a default operation. For example, double-clicking on a folder will open that folder.

Files and Folders

(A detailed discussion of files and folders can be found in Appendix C.)

Disk: A hard disk, a diskette, a USB flash drive, a CD, or a DVD. Each disk drive is identified by a letter followed by a colon.

File: Either a program file or a data file. Its name typically consists of letters, digits, and spaces. The name of the file is also called the *base name*.

Extension of a file name: One or more letters, preceded by a period, that identify the type of file. For example, files created with Word have the extension *doc* or *docx*.

Filename: The combination of the base name, the period, and the extension. The only characters that cannot be used in filenames are \, /, :, *, ?, <, >, ", and |. Filenames are not case sensitive.

Folder: A container holding files and other folders. Folders also are known as *directories*.

Subfolder: A folder contained inside another folder.

Path: A sequence of folders, separated by backslashes (\), where each folder is a subfolder of the folder preceding it. Paths are used to identify the locations of folders and files. An example is:

```
Programs\Ch07\Text_Files_for_Exercises
```

Filespec: An abbreviation of *file specification*, it is the combination of a drive letter followed by a colon, a path, and a filename. An example is:

```
C:\Programs\Ch07\Text_Files_for_Exercises\USPres.txt
```

In practice, you rarely have to type a filespec, since both Windows and Visual Basic provide Browse facilities that locate files and folders for you.

Root folder (also known as the **base folder):** The highest folder on a disk. It contains all the other folders on the disk and can also contain files. The filespec of the root folder of your hard drive is most likely C:\.

Windows Explorer: A program used to view, organize, and manage the folders and files on your disks. The details are presented in Appendix B in the section *Manage Files and Folders with Windows Explorer*. To invoke Windows Explorer, right-click the Windows Start button and click on *Explore* or *Open Windows Explorer* in the context menu that appears.

Displaying File Extensions: By default, Windows shows only the base names of files. The following steps configure Windows to also display the extensions. (In this book we assume that extensions are always shown).

Windows Vista and Windows 7

1. Click on the Start button.
2. **Windows Vista:** Type "Folder Options" into the "Start Search" box and press the Enter key. (A Folders Options dialog box will appear.)

   Windows 7: Type "Folder Options" into the "Search programs and files" box. (A Control Panel box will appear.) Click on *Folder Options*. (A Folders Options dialog box will appear.)
3. Click on the View tab in the Folder Options dialog box. (With Windows 7, the dialog box in Fig. 1.3 will appear. A similar dialog box will appear with Windows Vista.)
4. If there is a check mark in the box next to "Hide extensions for known file types," click on the box to remove the check mark.
5. Click on the *OK* button to close the Folder Options dialog box.

Windows XP

1. From Windows Explorer, click on *Options* in the *Tools* menu to display the Folder Options dialog box.

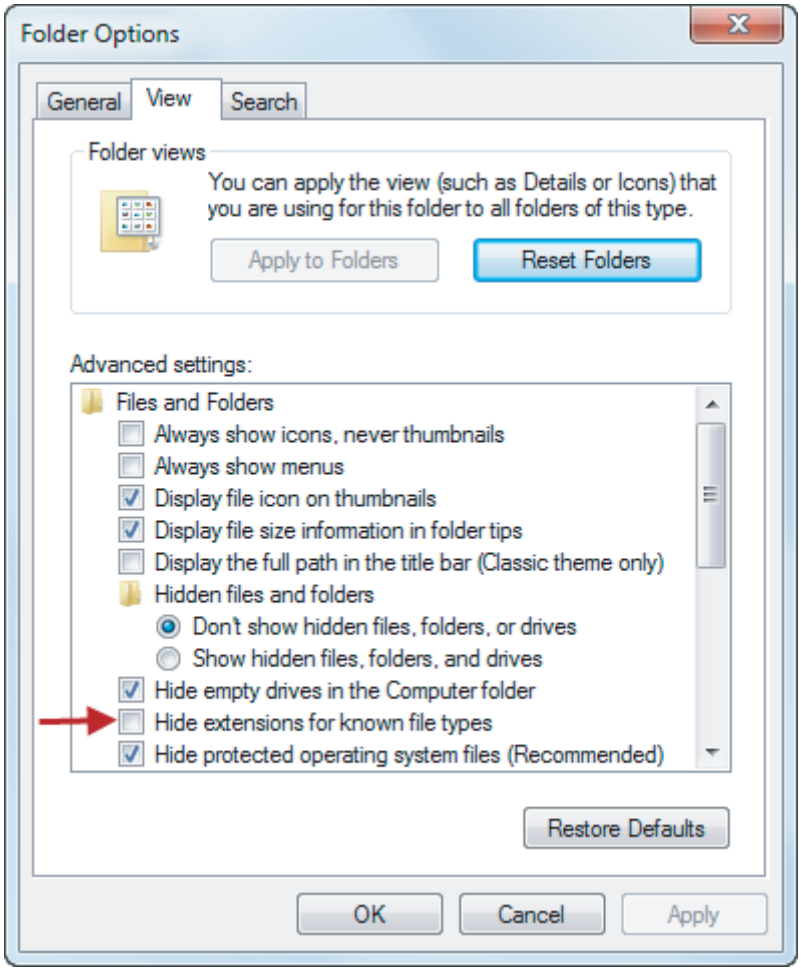

FIGURE 1.3 **Folder Options dialog box.**

2. Click on the View tab in the dialog box. (A dialog box similar to the one in Fig. 1.3 will appear.)
3. If there is a check mark in the box next to "Hide extensions for known file types," click on the box to remove the check mark.
4. Click on the *OK* button to close the Folder Options dialog box.

1.3 Program Development Cycle

We learned in Section 1.1 that hardware refers to the machinery in a computer system (such as the monitor, keyboard, and CPU) and software refers to a collection of instructions, called a **program**, that directs the hardware. Programs are written to solve problems or perform tasks on a computer. Programmers translate the solutions or tasks into a language the computer can understand. As we write programs, we must keep in mind that the computer will do only what we instruct it to do. Because of this, we must be very careful and thorough with our instructions. ***Note:*** A program is also known as a **project**, **application,** or **solution**.

Performing a Task on the Computer

The first step in writing instructions to carry out a task is to determine what the **output** should be—that is, exactly what the task should produce. The second step is to identify the data, or