

<u>Command</u>	<u>Outcome</u>
<code>clear x y z</code>	Removes only variables <code>x</code> , <code>y</code> , and <code>z</code> from the memory.
<code>who</code>	Displays a list of the variables currently in the memory.
<code>whos</code>	Displays a list of the variables currently in the memory and their sizes together with information about their bytes and class (see Section 4.1).

## 1.8 SCRIPT FILES

So far all the commands were typed in the Command Window and were executed when the **Enter** key was pressed. Although every MATLAB command can be executed in this way, using the Command Window to execute a series of commands—especially if they are related to each other (a program)—is not convenient and may be difficult or even impossible. The commands in the Command Window cannot be saved and executed again. In addition, the Command Window is not interactive. This means that every time the **Enter** key is pressed only the last command is executed, and everything executed before is unchanged. If a change or a correction is needed in a command that was previously executed and the result of this command is used in commands that follow, all the commands have to be entered and executed again.

A different (better) way of executing commands with MATLAB is first to create a file with a list of commands (program), save it, and then run (execute) the file. When the file runs, the commands it contains are executed in the order that they are listed. If needed, the commands in the file can be corrected or changed and the file can be saved and run again. Files that are used for this purpose are called script files.

**IMPORTANT NOTE:** This section covers only the minimum required in order to run simple programs. This will allow the student to use script files when practicing the material that is presented in this and the next two chapters (instead of typing repeatedly in the Command Window). Script files are considered again in Chapter 4, where many additional topics that are essential for understanding MATLAB and writing programs in script file are covered.

### 1.8.1 Notes About Script Files

- A script file is a sequence of MATLAB commands, also called a program.
- When a script file runs (is executed), MATLAB executes the commands in the order they are written, just as if they were typed in the Command Window.
- When a script file has a command that generates an output (e.g., assignment of a

value to a variable without a semicolon at the end), the output is displayed in the Command Window.

- Using a script file is convenient because it can be edited (corrected or otherwise changed) and executed many times.
- Script files can be typed and edited in any text editor and then pasted into the MATLAB editor.
- Script files are also called M-files because the extension .m is used when they are saved.

### 1.8.2 Creating and Saving a Script File

In MATLAB script files are created and edited in the Editor/Debugger Window. This window is opened from the Command Window by clicking on the **New Script** icon in the Toolstrip, or by clicking **New** in the Toolstrip and then selecting **Script** from the menu that open. An open Editor/Debugger Window is shown in Figure 1-6.

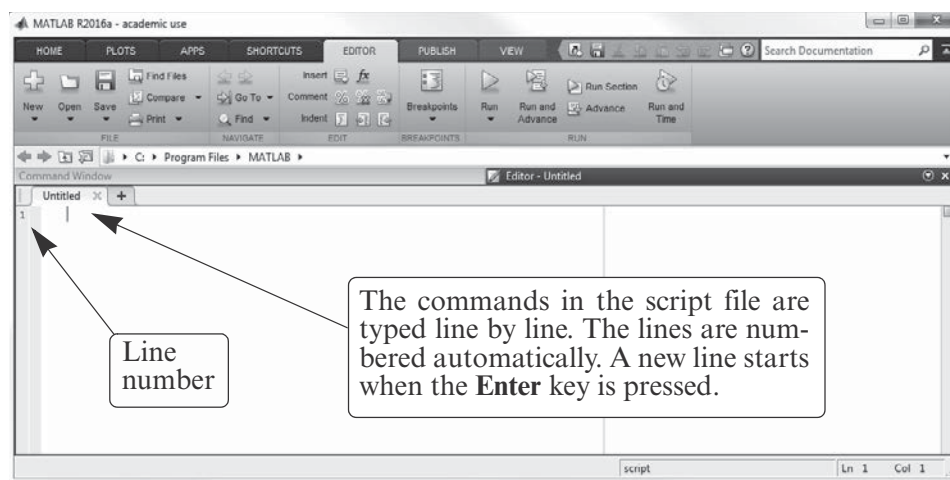


Figure 1-6: The Editor/Debugger Window.

The Editor/Debugger Window has a Toolstrip at the top and three tabs EDITOR, PUBLISH, and VIEW above it. Clicking on the tabs changes the icons in the Toolstrip. Commonly, MATLAB is used with the HOME tab selected. The associated icons are used for executing various commands, as explained later in the Chapter. Once the window is open, the commands of the script file are typed line by line. MATLAB automatically numbers a new line every time the **Enter** key is pressed. The commands can also be typed in any text editor or word processor program and then copied and pasted in the Editor/Debugger Window. An example of a short program typed in the Editor/Debugger Window is shown in Figure 1-7. The first few lines in a script file are typically comments (which are not executed, since the first character in the line is %)

that describe the program written in the script file.

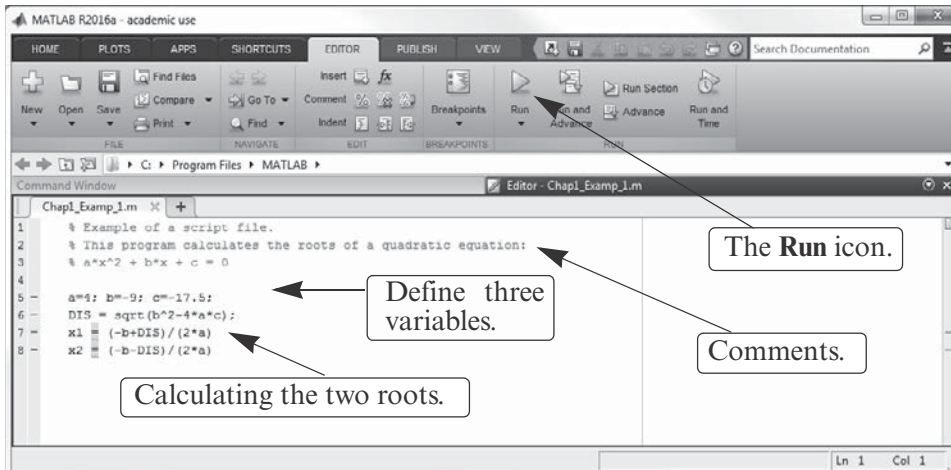


Figure 1-7: A program typed in the Editor/Debugger Window.

Before a script file can be executed it has to be saved. This is done by clicking **Save** in the Toolstrip and selecting **Save As...** from the menu that opens. When saved, MATLAB adds the extension `.m` to the name. The rules for naming a script file follow the rules of naming a variable (must begin with a letter, can include digits and underscore, *no spaces*, and up to 63 characters long). The names of user-defined variables, predefined variables, and MATLAB commands or functions should not be used as names of script files.

### 1.8.3 Running (Executing) a Script File

A script file can be executed either directly from the Editor Window by clicking on the **Run** icon (see Figure 1-7) or by typing the file name in the Command Window and then pressing the **Enter** key. For a file to be executed, MATLAB needs to know where the file is saved. The file will be executed if the folder where the file is saved is the current folder of MATLAB or if the folder is listed in the search path, as explained next.

### 1.8.4 Current Folder

The current folder is shown in the "Current Folder" field in the desktop toolbar of the Command Window, as shown in Figure 1-8. If an attempt is made to execute a script file by clicking on the **Run** icon (in the Editor Window) when the current folder is not the folder where the script file is saved, then the prompt shown in Figure 1-9 opens. The user can then change the current folder to the folder where the script file is saved, or add it to the search path. Once two or more different current folders are used in a session, it is possible to switch from one to another in the **Current Folder** field in the Command Window. The cur-

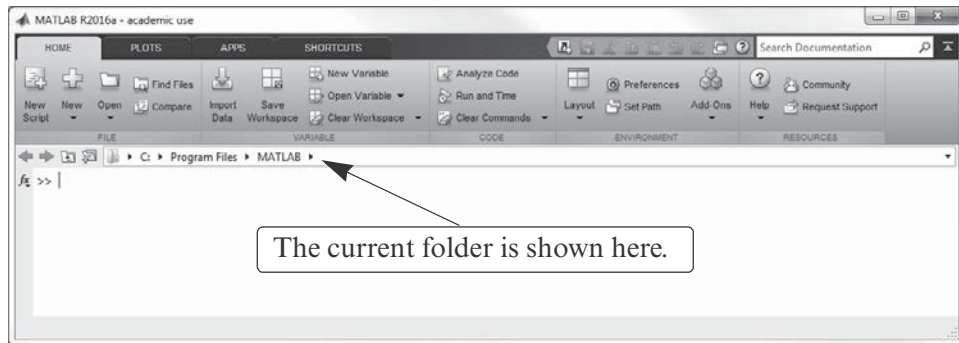


Figure 1-8: The Current folder field in the Command Window.

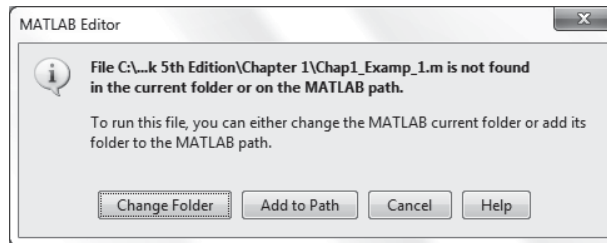


Figure 1-9: Changing the current directory.

rent folder can also be changed in the Current Folder Window, shown in Figure 1-10, which can be opened from the **Desktop** menu. The Current Folder can be changed by choosing the drive and folder where the file is saved.

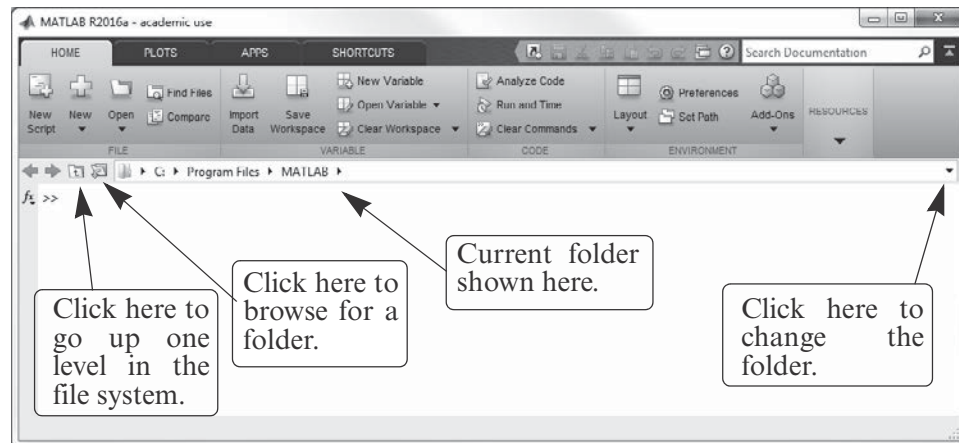


Figure 1-10: The Current Folder Window.