Chapter 1

Starting with MATLAB

This chapter begins by describing the characteristics and purpose of the different windows in MATLAB. Next, the Command Window is introduced in detail. The chapter shows how to use MATLAB for arithmetic operations with scalars in much to the way that a calculator is used. This includes the use of elementary math functions with scalars. The chapter then shows how to define scalar variables (the assignment operator) and how to use these variables in arithmetic calculations. The last section in the chapter introduces script files. It shows how to write, save, and execute simple MATLAB programs.
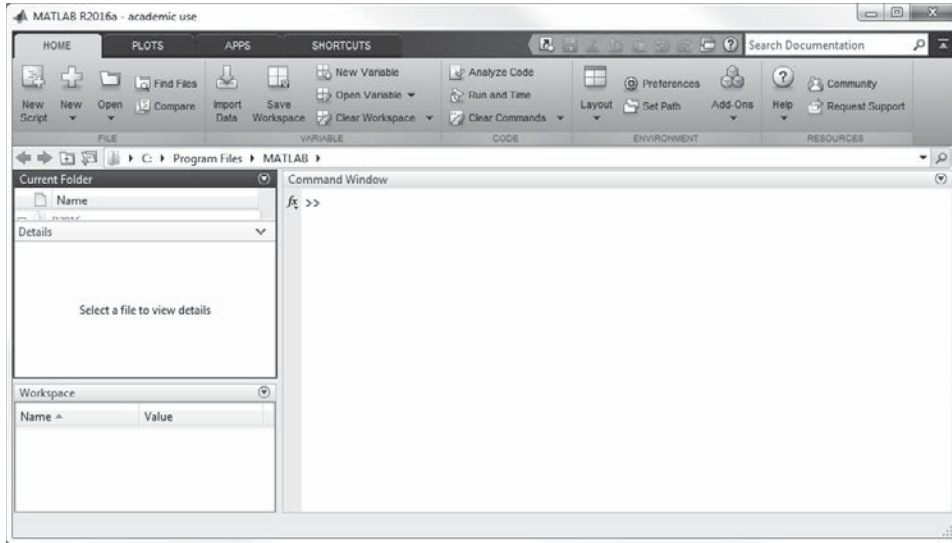
1.1 STARTING MATLAB, MATLAB WINDOWS

It is assumed that the software is installed on the computer, and that the user can start the program. Once the program starts, the MATLAB desktop window opens with the default layout, Figure 1-1. The layout has a Toolstrip at the top, the Current Folder Toolbar below it, and four windows underneath. At the top of the Toolstrip there are three tabs: HOME, PLOTS, and APPS. 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 this chapter. The PLOTS tab can be used to create plots, as explained in Chapter 5 (Section 5.12), and the APPS tab can be used for opening additional applications and Toolboxes of MATLAB.

The default layout

The default layout (Figure 1-1) consists of the following four windows that are displayed under the Toolstrip: the Command Window (the larger window), the Current Folder Window (on the top left), the Details Window and the Workspace Window (on the bottom lest). A list of several MATLAB windows and their purposes is given in Table 1-1.

Four of the windows—the Command Window, the Figure Window, the Editor Window, and the Help Window—are used extensively throughout the book

Figure 1-1: The default view of MATLAB desktop.

and are briefly described on the following pages. More detailed descriptions are included in the chapters where they are used. The Command History Window, Current Folder Window, and the Workspace Window are described in Sections 1.2, 1.8.4, and 4.1, respectively.

Command Window: The Command Window is MATLAB's main window and opens when MATLAB is started. It is convenient to have the Command Window as the only visible window. This can be done either by closing all the other windows, or by selecting **Command Window Only** in the menu that opens when the **Layout** icon on the Toolstrip is selected. To close a window, click on the pull-down menu at the top right-hand side of the window and then select Close. Working in the Command Window is described in detail in Section 1.2.

Table 1-1: MATLAB windows

Window	Purpose
Command Window	Main window, enters variables, runs programs.
Figure Window	Contains output from graphic commands.
Editor Window	Creates and debugs script and function files.
Help Window	Provides help information.
Command History Window	Logs commands entered in the Command Window.

Table 1-1: MATLAB windows

Window	Purpose
Workspace Window	Provides information about the variables that are stored.
Current Folder Window	Shows the files in the current folder.

Figure Window: The Figure Window opens automatically when graphics commands are executed, and contains graphs created by these commands. An example of a Figure Window is shown in Figure 1-2. A more detailed description of this window is given in Chapter 5.
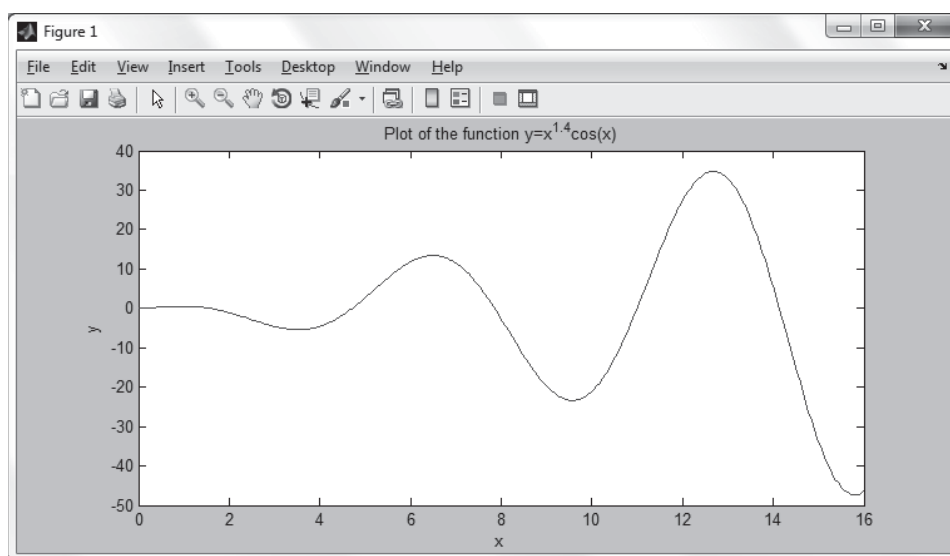

Figure 1-2: Example of a Figure Window.

Editor Window: The Editor Window is used for writing and editing programs. This window is opened by clicking on the **New Script** icon in the Toolstrip, or by clicking on the **New** icon and then selecting **Script** from the menu that opens. An example of an Editor Window is shown in Figure 1-3. More details on the Editor Window are given in Section 1.8.2, where it is used for writing script files, and in Chapter 7, where it is used to write function files.

Help Window: The Help Window contains help information. This window can be opened from the **Help** icon in the Toolstrip of the Command Window or the toolbar of any MATLAB window. The Help Window is interactive and can be used to obtain information on any feature of MATLAB. Figure 1-4 shows an open Help Window.

When MATLAB is started for the first time, the screen looks like that shown in Figure 1-1. For most beginners it is probably more convenient to close
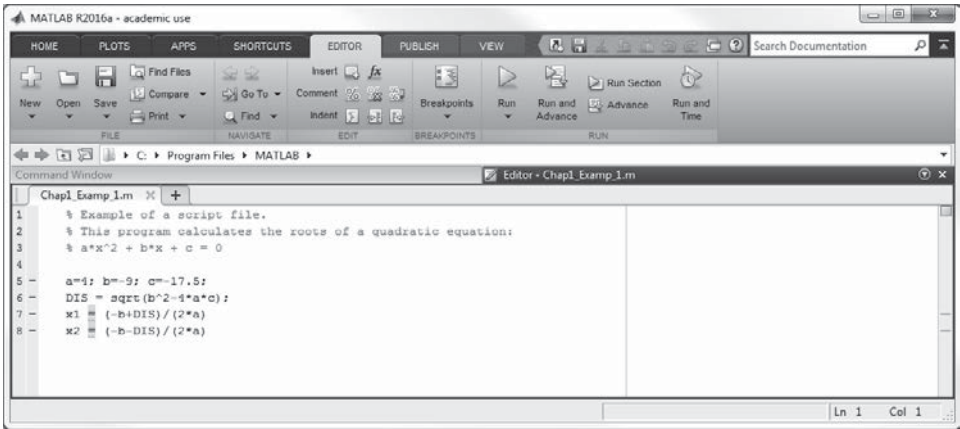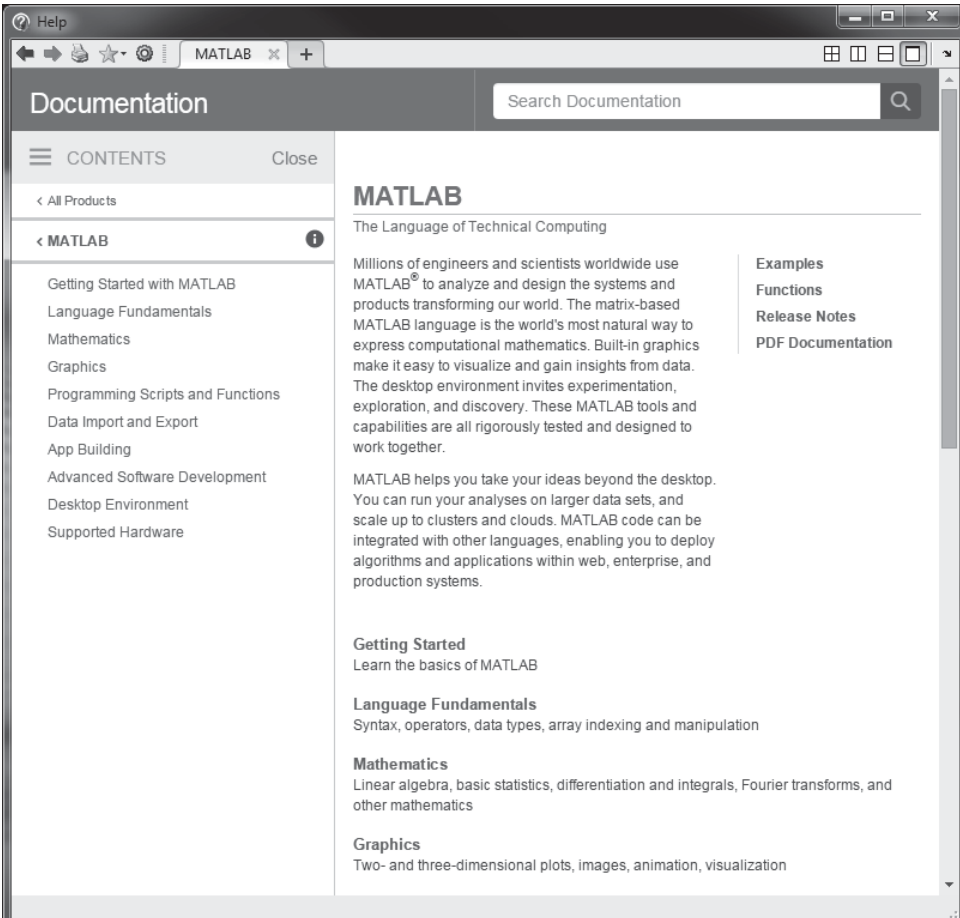
Figure 1-3: Example of an Editor Window.

Figure 1-4: The Help Window.