Lab 4:
MATLAB Help and Demonstrations

4.1 Introduction

This self-directed assignment is aimed at showing you the basics of MATLAB, including the graphical user interface, demonstrations, and help files. After completing it, you should be able to identify the different parts of the GUI, be able to locate and run the various demonstrations, and be able to search for help in a variety of ways. There is no formal assignment to be turned in.

To run MATLAB at the workstation, log in using your NET ID and password. After the initialization is complete, right-click and select `Open Terminal`. This will bring up a window that serves the same purpose as the terminal client on your PC or X11R6 on your Mac - only now you are actually sitting at the machine you are controlling. That also means you do *not* need to change the DISPLAY environment.

4.2 Resources

The additional resources required for this assignment include:

- Books: neither
- Pratt Pundit Pages: `MATLAB`

4.3 MATLAB Built-in Help

MATLAB has vast resources available for you to learn how best to use the program. Most of this assignment will be spent using the built-in help browser to read about and interact with MATLAB. When you typed `matlab &` above, the MATLAB development environment should have come up. Go to the `Help` pull-down menu at the top of the window and select the `Product Help` category. Within the `Help Navigator` (the left-hand pane of the Help window) click on the `Contents` tab and then click on the + symbol next to the word `MATLAB`. In the right-hand window, under the `Documentation Set` heading, click on `Getting Started`. Of the options that are presented in this group, click on the `MATLAB Getting Started Guide` link that is below the list of videos.

Follow along with the tutorial. Notice at the bottom of each page there are arrows to let you go backwards or forwards within the narrative. Also notice on the left-hand side that the particular section you are reading is highlighted and that the various topics will expand as you read them. Read everything in the `Introduction` and in `Matrices and Arrays`. Read all parts of the `Desktop Tools and Development Environment` section through the end of the information on the `Editor/Debugger`.

4.4 MATLAB Demonstrations

MATLAB also has several demonstrations to show you how various aspects of MATLAB work. Within the `Help Navigator`, click on the `Demos` tab and read the `Getting Started with Demos`. After that, expand the `MATLAB` section of the demos by clicking the + next to the word MATLAB. You should run the demonstrations by clicking on the name of the demonstration in the Help Navigator and reading through the description. Each of the demonstrations has code you can open as well as run - click the links at the top of the demonstration window to open the file and run the code in the command window. The codes may not make sense yet, but at least you can start seeing what MATLAB code looks like. Though you are certainly welcome to go through all the demonstrations, the ones in particular that you should look at this week are:

- Mathematics: Basic Matrix Operations, Matrix Manipulation, Inverses of Matrices, Loma Prieta Earthquake
- Graphics: 2-D Plots, 3-D Plots, 3-D Surface Plots, Line Plotting, Earth's Topography, Viewing a Penny
- Gallery: All of them, just to see them
- Other Demos: Traveling Salesman, Game of Life, 3-D Drawing, Bending Truss