**INFORMATION YOU NEED TO WORK ON YOUR HOMEWORK**

**Step 1: Obtaining Matlab or Octave for your personal computer**

In class, we will use an open-source (FREE) program called Octave, which is very similar to Matlab. Whatever you learn using Octave will apply to Matlab -- for the purposes of this class, the two languages are interchangeable. I will be using Octave in my lectures and discussion sections.

You can buy the student version of Matlab for ~$100 at the bookstore or use it for free in some engineering labs.

You can download Octave for FREE for Windows, UNIX, and Macs [here](http://www.gnu.org/software/octave/download.html). [(Shortcut to Windows version)](http://sourceforge.net/projects/octave/files/Octave_Windows%20-%20MinGW/Octave%203.2.4%20for%20Windows%20MinGW32%20Installer/Octave-3.2.4_i686-pc-mingw32_gcc-4.4.0_setup.exe/download).

Once you have installed Octave, an icon should appear in your Quick Launch toolbar, on your Desktop, and/or under **Start > Programs > GNU Octave 3.2.4 > Octave**. Clicking this icon will start Octave. (Note: The latest version of Octave was 3.2.4 when this site was created. Your version of Octave may be different.)

**Step 2.1: Using Octave on your personal computer**

After clicking the Octave icon, you will see a black window pop up with some text:

GNU Octave, version 3.2.4
Copyright (C) 2009 John W. Eaton and others.
This is free software; see the source code for copying conditions.
(stuff)
octave-3.2.4.exe:1> (blinking cursor)

All commands are issued from a command line, symbolized by the *greater than* sign (>).

ls or dir - see contents of current directory
cd - change directories
delete - remove file
copyfile - copy file
movefile - renames or moves files
mkdir - make directory
rmdir - remove directory
clc - clear screen
exit - closes terminal
edit - opens text editor
pwd - lists the pathway to the current directory
.. - double dots indicate one directory higher

Keep in mind these commands are case sensitive.

Let's try some commands out. First, where are we?

> pwd
ans = C:\Octave\3.2.4\_gcc-4.4.0\bin

We are in the folder **bin**, which is in the folder **3.2.4\_gcc-4.4.0**, which is in the folder **Octave**, which is in the hard drive (**C:**). Let's look at the contents of this folder.

> ls
Volume in drive C is TI100712V0E
Volume Serial Number is B82B-4BED
Directory of C:\Octave\3.2.4\_gcc-4.4.0\bin
[.] history.dll
[..] iconv.dll
amd.dll intl.dll
arpack.dll jpeg-7.dll

(more files and folders)

hdf5.dll zlib1.dll
120 File(s) 99,509,623 bytes
2 Dir(s) 148,684,947,456 bytes free

These are the files that run Octave and we don't want to mess around with them. Let's try moving around our computer using commands at the command line. First, move out of the current directory into the home directory. Type **cd** at the command line.

> cd
> pwd
ans = C:\Users\Paul

We are now in the **home** directory -- that is, we are in the folder **Paul** which is in a folder **Users** which is in the **C:** drive (the hard drive). You can get to the same folder using the graphical user interface (GUI). Go to My Computer > C: > Users > Paul. Note that the name *Paul* likely will be replaced by your username. Let's see what is in this directory.

> ls
Volume in drive C is TI100712V0E
Volume Serial Number is B82B-4BED
Directory of C:\Users\Paul
[.] [Documents] sample.txt
[..] [Downloads] [Saved Games]

(more files and folders)

18 File(s) 537,890 bytes
13 Dir(s) 197,522,796,544 bytes free

We can access what is on the Desktop by moving to the **Desktop** folder.

> cd Desktop
> pwd
ans = C:\Users\Paul\Desktop

You are now in the **Desktop** folder and can see what is on your Desktop.

> ls
Volume in drive C is TI100712V0E
Volume Serial Number is B82B-4BED
Directory of C:\Users\Paul\Desktop

(some files and folders)

24 File(s) 545,995,563 bytes
19 Dir(s) 197,522,755,584 bytes free

This is the list of items on your Desktop. Let's create a folder on your Desktop called **HW\_Assignments**.

> mkdir HW\_Assignments
> ls

You should be able to see the folder **HW\_Assignments** on your Desktop. What is in it?

> cd HW\_Assignements
> pwd
ans = C:\Users\Paul\Desktop\HW\_Assignments

You are in the correct folder.

> ls

You should see nothing because there are no files or folders in this directory. Let's make a simple text file.

> edit firstfile.txt

A simple text editor should open up. Type anything you want, save the file, then close the text editor if you wish.

> ls
Volume in drive C is TI100712V0E
Volume Serial Number is B82B-4BED
Directory of C:\Users\Paul\Desktop\HW\_Assignments
[.] [..] firstfile.txt
1 File(s) 21 bytes
2 Dir(s) 187,437,633,536 bytes free

Ta da! You have created a text file. Note that you can open this file from your normal graphical user interface. Next, we will move the file into a sub-folder.

> mkdir HW1
> ls           (see the new directory 'HW1' and the old file 'firstfile.txt'?)
> movefile firstfile.txt HW1
> ls           ('firstfile.txt' has been moved into the folder 'HW1')
> cd HW1
> ls           (this is the new location of 'firstfile.txt')

If you want to move the file up one directory (out of **HW1** and back into **HW\_Assignments**) you can type the following command,

> movefile firstfile.txt ..       (the double dots mean one level up)
> ls               ('firstfile.txt' has been moved out of 'HW1')
> cd ..
> ls               (there it is)

You can make a copy of a file with the **copyfile** command.

> copyfile firstfile.txt backup\_firstfile.txt
> ls             (you have made an identical copy with a different name)

There are a couple of time-saving tricks you can use.
- Cycle through old commands with the up arrow
- Use TAB to auto-complete commands, file names, and folder names.

**Step 2.2: Starting Matlab**

This is pretty easy. In Windows, you can start Matlab by clicking on **Start > Programs > Matlab > Matlab**.

As stated earlier, you may use either Matlab or Octave for this class.

**Step 3: Working from computer labs on campus**

There also is a computer lab in ECT123, but discussion sections for other classes are held in that lab at certain times (during which you are not supposed to be in there) and it is not open 24/7.