Editing with Emacs

In this exercise you will learn how to use the emacs editor to enter and change a program. You will also learn how to print a listing of a program, how to print a sample run of your program, and how to turn in your assignment by copying the program to my "inbox".

1. If you have not already done so, take the emacs tutorial. You should allow about an hour for this, but you can always interrupt it and come back to it later. You can take the tutorial by starting emacs and then pressing control-H followed by control-T. If you have copied the start-up file `.cshrc` as suggested in Exercise 01 then you can also take a short-cut by giving the command "`learn-emacs`", but this is not a general command in Unix.

2. Using emacs, type in the program `AVGVAR` exactly as it appears in the handout from the web. The name of the file in which you should put this program should be your own userid, followed by "04" (for exercise 04), followed by ".`f`". Thus Matthew Vassar would edit the file `mavassar04.f` with the command:

   ```
   %  emacs mavassar04.f
   ```

   You must type the file in yourself! Don't just cut and paste with the mouse, and don't just copy the file from the web server. The point of this is to give you practice with the editor. If you don't learn to use the editor now you will have more difficulties later on.

3. Once you think you have entered the program correctly try it out. First compile it with `f77`, like so:

   ```
   %  f77 mavassar04.f  -o mavassar04
   ```

   If there are any typing errors then you will have to edit the file to correct them.

   Then run the program by giving the name of the executable file (for example, '`mavassar04`' but without the ".`f`", and of course with your own userid) and feed it some sample numbers. You should check that it really is working as it should, and correct any errors.

4. Once you are sure the program is working correctly, print out a copy of it (a "listing") on the laser printer with the '`lpr`' command:

   ```
   %  lpr mavassar04.f
   ```

The contents of the file will be printed on the default printer, which should be the laser printer in the Physics department office.

5. You also want to print a sample run of the program. To do this you must record into a file a copy of your dialogue with the computer, then print that file with the 'lpr' command. In Unix the 'script' command will spawn a subshell and record the entire terminal session in a file called typescript. Thus,

```
%  script
Script started, file is typescript
%  mavassar04
 This program will compute the average and variance
 of a set of numbers.  Please enter the numbers one
 at a time.  Enter ZERO to stop input and print the
 final results.
 Enter your numbers:
1
    1.000000
2
    2.000000
3
    3.000000
0
  0.0000000E+00
 You entered                3 values.
 The average is:    2.000000
 The variance is:    1.000000
 (The standard deviation is   1.00000)
%  exit
Script done, file is typescript
%
```

Don't forget to type 'exit' when you are done to exit the subshell, otherwise the file typescript will probably be empty. Then print that file on the line printer, like so:

```
%  lpr  typescript
```

Turn in both the listing and the sample run to your instructor.

6. You should also copy the file containing the program to your instructor's "inbox" subdirectory. The command is:

```
%  cp  mavassar04.f  ~myers/inbox
```

7. Finally, if you wish you can send an e-mail saying that you have completed this exercise.

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To summarize what needs to be turned in for each assignment:

☐ Printed listing of your program.

☐ Printed copy of a sample run (the `typescript` file).

☐ Copy your program to my `inbox` directory.