CSCI 3194 (Seminar (UNIX Power Tools)), Fall 2014
Homework 2

Credit: 40 points.

1 Reading

Be sure you have read the assigned readings for classes through 10/22.

2 Problems

Answer the following questions. You may write out your answers by hand or using a word processor or other program, but please submit hard copy, either in class or in my mailbox in the department office. Answers to most questions will involve experimentation on a UNIX or Linux system. You are free to use any appropriate system (unless a specific problem says otherwise); if you use something other than one of our classroom/lab machines please tell me what.

2.1 Text editors; vi and emacs

1. (8 points) Spend at least half an hour (more if you have the time and interest) working through the vim tutorial (and/or reading other parts of the online help). Start the tutorial by typing vimtutor at the command prompt. Access online help by typing :help or :help sometopic; exit help by typing :q. Then tell me at least two things you learned that you didn't know before and you think you might find useful. (If you have already read part of this tutorial for a previous class, read further in it than you have before.)

2. (8 points) Repeat the previous question, but with the emacs tutorial and/or online help. Start it by typing emacs and then control-h followed by t. Access online help as described in the tutorial. By default emacs will create a new window if it can. If you don't want that, start it with emacs -nw. (If you have already read part of this tutorial for a previous class, read further in it than you have before.)

3. (4 points) Which editor do you feel more inclined to learn more about at this point (considering features, ease of use, etc.). Why? ("Neither" is an acceptable answer if you explain why!)

3 Programming Problems

Do the following programming problems. You will end up with at least one code file per problem. Submit your program source (and any other needed files) by sending mail to bmassing@cs.trinity.edu, with each file as an attachment. Please use a subject line that mentions the course number and the assignment (e.g., "csci 3194 homework 2"). You can develop your programs on any system that provides the needed functionality, but I will test them on one of the department's Linux machines, so you should probably make sure they work in that environment before turning them in.

3.1 Shell scripting

1. (10 points)   Do one of the following:

   (a) Write a shell script that renames a file (specified as a parameter), changing any blanks in its name to underscores. If no filename is given, or if the file does not exist, the script should print an error message.

   Hint: See the examples in the class notes and the example scripts on the <u>sample programs page</u>[1].

   (b) Write a shell script that makes use of a conditional (`if/then/else/fi`) and at least one positional parameter and does something you find useful or interesting. Include comments at the top of the script describing its purpose.

2. (10 points)   Do one of the following:

   (a) Write a shell script that searches all directories in your search path for a specified file/executable and prints the directories where it is found. For example, if the script is called `find-in-path`, `find-in-path ls` would print `/bin` or `/bin/ls`. If the specified file is found in more than one directory, the script should print them all. If it is not found at all, the script can print an error message or just do nothing. If no file/executable is specified, the script should print an error message.

   Hint: See the examples in the class notes and the example scripts on the <u>sample programs page</u>[2].

   (b) Write a shell script that makes use of a loop (`for` or `while`) and does something you find useful or interesting. Include comments at the top of the script describing its purpose.

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[1]`http://www.cs.trinity.edu/~bmassing/Classes/CS3194_2014fall/SamplePrograms/index.html`
[2]`http://www.cs.trinity.edu/~bmassing/Classes/CS3194_2014fall/SamplePrograms/index.html`