

CSCI 3294 (Seminar: UNIX Power Tools), Fall 2018

Homework 3

Credit: 20 points.

1 Reading

Be sure you have read, or at least skimmed, the assigned readings for 9/12.

2 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 and the assignment (e.g., “csci 3294 hw 3” or “UNIX hw 3”). 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.

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. Probably it should also print a message if the old and new names would be the same.

Hint: See the examples in the class notes and the example scripts on the <http://www.cs.trinity.edu/~>

- (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 <http://www.cs.trinity.edu/~>

- (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.

3 Honor Code Statement

Include the Honor Code pledge or just the word “pledged”, plus *at least one of the following* about collaboration and help (as many as apply).¹ Text *in italics* is explanatory or something for you to fill in. For programming assignments, this should go in the body of the e-mail or in a plain-text file `honor-code.txt` (no word-processor files please).

- This assignment is entirely my own work. (*Here, “entirely my own work” means that it’s your own work except for anything you got from the assignment itself — some programming assignments include “starter code”, for example — or from the course Web site. In particular, for programming assignments you can copy freely from anything on the “sample programs page”.*)
- I worked with *names of other students* on this assignment.
- I got help with this assignment from *source of help — ACM tutoring, another student in the course, the instructor, etc.* (*Here, “help” means significant help, beyond a little assistance with tools or compiler errors.*)
- I got help from *outside source — a book other than the textbook (give title and author), a Web site (give its URL), etc..* (*Here too, you only need to mention significant help — you don’t need to tell me that you looked up an error message on the Web, but if you found an algorithm or a code sketch, tell me about that.*)
- I provided help to *names of students* on this assignment. (*And here too, you only need to tell me about significant help.*)

4 Essay

Include a brief essay (a sentence or two is fine, though you can write as much as you like) telling me what about the assignment you found interesting, difficult, or otherwise noteworthy. For programming assignments, it should go in the body of the e-mail or in a plain-text file `essay.txt` (no word-processor files please).

¹ Credit where credit is due: I based the wording of this list on a posting to a SIGCSE mailing list. SIGCSE is the ACM’s Special Interest Group on CS Education.