

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

Homework 1

Credit: 30 points.

1 Reading

Be sure you have read, or at least skimmed, the assigned readings for 8/27 and 8/29.

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 one of my mailboxes (outside my office or in the ASO). 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.

How to find out information

(You will learn more about this topic if you use the `man` and `info` commands rather than Google!)

1. (5 points) When you are reading a `man` page, is there a way to search for particular text? What is it?
(Hint: Look in the man page for `man` for mentions of a pager, and then read the man page for the appropriate other program.)
2. (5 points) What command(s) could you use to find out how much disk space is available on all the mounted disks? What command(s) could you use to find out how much disk space is taken up by all the files in your home directory?
(Hint: `man -k` or `apropos` may be helpful.)
3. (5 points) The Linux `date` command will, among other things, print today's date or a specified other date. How would you use this command to find out what day of the week you were born? (I.e., tell me the line or lines you would type in a terminal window to accomplish this.)
(Hint: The info page for `date` may be more helpful than the man page.)
(To observe how UNIX systems are sometimes *not* alike, if you have access to an OS X (Mac) machine, try the same command on it.)

Files and filesystem basics

1. (5 points) On one of the lab machines, the command `ls -l /bin/vi` produces the following output:

```
-rwxr-xr-x. 1 root root 910264 Apr 12 16:08 /bin/vi
```

What does all of this mean? (I.e., what does the string of dashes and letters mean? The 1? The 910264? and so on.)
(Hint: `man ls` and `info ls` may be helpful.)

2. (5 points) What command(s) would you use to create a directory in your home directory called `KeepOut` to which you have full access (read, write, and execute), but no one else has any access?

Processes and job control

1. (5 points) Suppose you have started a GUI application called `bigpig` that for some reason doesn't seem to be responding to any input. How do you terminate it without logging out or rebooting the machine? Describe as many ways as you can think of.
(Hint: `man ps` and `man kill`.)

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.