

In this homework, you will need to work on the eniac-l.seas.upenn.edu server. If you need help logging in to this machine see the following webpage: <http://www.seas.upenn.edu/cets/answers/remote.html> (note: you need to swap eniac-l.seas.upenn.edu for eniac.seas.upenn.edu).

In most questions below, you will be asked to enter some command with some set of arguments. Depending on the command, there may or may not be output generated. For each command, you should use your mouse to highlight the command (including the prompt) and the output (if there is any) and copy it to a separate *text* document. Obviously, when you make mistakes, you should not copy the text. You should also copy the question to the text document as well. For questions that do not ask you to enter a command, you can simply type the answer into the text document.

When you are finished with the assignment, attach the text document to an email and send to mcorliss@cis.upenn.edu. The subject of the email should be "cse399 - hw1" (without the quotes). The homework is due by the beginning of Wednesday's class. Total points: 50.

1. [32 Points] Basic Unix/Linux commands.

- (a) Make a new directory called cse399.
- (b) Change your location to this directory.
- (c) Make a new directory called hw1. You should specify a flag to print out a message after the directory is created (*i.e.*, use 'man' pages to find this flag).
- (d) Copy the directory /home1/m/mcorliss/teaching/cse399/hw1 and all of its subcontents to your current location.
- (e) Change your location to this directory.
- (f) List only files ending in '.txt' using the long format (hint use 'man' to find out to list files using the long format).
- (g) List only files ending in '.jpg'. Again, use the long format and in addition, the files should be sorted by modification time.
- (h) Remove files starting with 'cse399' and ending in '.jpg'. You should specify an argument that forces the system to ask you if you want to delete each file.
- (i) Print out the file 'print-file.txt'.
- (j) Rename the file 'cse399-9.txt' to 'print-file.txt'. This will remove the old 'print-file.txt'. You should specify an argument that will backup this old file.
- (k) Print out the new 'print-file.txt'. Each line should be numbered.
- (l) Move all the contents from directory 'tmp/' to the current location.
- (m) Remove the directory 'tmp/'.
- (n) List all files using the long format. The files should be sorted by file size.
- (o) List the contents of the directory 'foo' without changing your location.
- (p) List only the directory name 'foo' (and not its contents) without changing your location.

2. [8 Points] Advanced uses of man.

- (a) In your current location, there is a file called 'cse399.1'. This is actually a manpage. Enter a command to man this page.
- (b) Use the man command to search all man pages to find man pages whose command or description contain 'printf'.

- (c) Man pages are separated into different sections ('man man' to find out what the sections are). In some cases, multiple sections have pages with the same name. (*e.g.*, read). By default, man only gives you the first man page it finds. Use man to give you all man pages for 'read'.
 - (d) Use man to view the man page for the read system call only. Make sure the command you enter does not force you to view any of the other read man pages from other sections.
3. [10 Points] New command: *less*. In the lab, we talked about the command 'more'. 'less' is similar to 'more', *i.e.*, it allows you to view a file. However, less is a lot more powerful (thus, less is more). In this problem, you do not need to cut and paste commands, but rather can just type your answers directly into the text document.
- (a) When viewing a file using 'less', what key do you use to go to the top of the file and to the bottom of the file?
 - (b) What key do you use to scroll up a line or down a line?
 - (c) What key do you use to scroll up N lines or down N lines?
 - (d) What key do you use to enter a search expression?
 - (e) What key do you use to search forwards or search backwards using the current search expression?
4. About this assignment.
- (a) Approximately, how long did it take you to complete this homework?
 - (b) Would you classify this assignment as easy, straight-forward, or difficult?