

McGill University
School of Computer Science
COMP-206

Software Systems

Due: January 31, 2014 on My Courses at 23:55
(two late days, -5% each day)

Systems & Operating Systems

Question 1: Short answer questions

1. Give a definition for the term Software System, as seen from our class lectures.
2. Why is Unix considered to be a system?
3. Google the “Linux Documentation Project” and look around the web site. Then Google “Linux Documentation Project Manifesto” and for this question, summarize the manifesto in one or two sentences.
4. Browse the <http://linuxcounter.net> web page. Identify the three top Linux using countries.
5. What are Vi, Vim, Emacs, and Pico?
6. Using Google identify which tools Vi, Vim, Emacs, and/or Pico have an active online user community. Identify this by writing down one example URL.
7. Given the information in the URL of the active user community you identified above, why do they support the tool?

Question 2: The Unix Command-line

Write a separate Unix command for each of the questions below:

1. List all the files in the current directory that have a three letter file extension of which we only care that the last 2 letters of the file extension are “oc”.
2. Finger all the currently logged in users who have the string “Bob” or “bob” in their name.
3. Assuming you are in your home directory, write all the Unix command-line commands you would use to do the following: create a sub-directory called Source. The Source directory will have two additional sub-directories: Backup and Docs, create these as well. Assume your home directory has a bunch of .doc and .java files. Write two commands but executed on a single command-line that copies all the .doc files into the Docs directory and the .java files into the Source

directory. Write all the above command-line commands without moving away from your home directory.

Question 3: Bash Programming

I am currently working on the back-end of an industry server where the following activity is required: when programmers log into their Unix account all the source files in their Source directory must be copied into their Backup directory automatically and immediately. The Source directory is a sub-directory of their home directory and the Backup directory is a sub-directory of their Source directory. They also want the programmers, while using the command-line, to be able to write a single command that would automatically do this backup operation immediately. Lastly, they want, after log-in, to alias the command “ls -l -a” to “lsa”. They also want to modify the command-line prompt to include the company motto (but you can put your own motto). This means that whatever the command-line prompt currently displays it should continue displaying but in addition it will include your motto (or phrase, anything you like).

Create the above directory structure on your Ubuntu account in Trottier. Use bash to write a script that will perform this backup operation using relative paths when typed at the command-line as a command. Assume this script is saved in the Source directory. Update your Trottier log-in script to automatically run this backup script every time you log-in. Modify your log-in script to also implement the alias operation and the prompt modification operation. Use the “man” command to help you do this.

Name your backup script “backup” and submit that as your answer. Identify which login script is your active login script in Trottier, modify it, then submit that file as your answer.

WHAT TO HAND IN

Everything must be submitted to My Courses before the due date. Remember that you can hand in your assignment up to two days late but there will be a penalty of 5% each day. After that, your assignment will not be accepted. Please hand in the following:

- For question 1: A text, word or PDF file named A1Q1 with the answers.
- For question 2: A text, word or PDF file named A1Q2 with the answers.
- For question 3: The bash and log-in file you edited.

HOW IT WILL BE GRADED

The TA will use the following instructions when grading your assignment. TA's are often given additional instructions not presented here but compiled from common student questions or found problems in the assignment or adjustments to the assignment procedures.

- ASSIGNMENT: is worth a total of 20 points.
- QUESTION 1: is worth 7 points
 - 1 point for each question
- QUESTION 2: is worth 3 points.
 - 1 point for each question
- QUESTION 3: is worth 10 points.
 - Graded proportionally.
 - 5 points for the backup script
 - 5 points for the log-in script

GRADING RULES

The following rules are followed by the TA when grading assignments:

- A program must run in order to get a grade (even if it does not run well). If it does not run (does not compile) it will receive a zero. (Make sure to run your programs from Trottier – they sometimes do not run the same from home when logging in using putty. Mimi is not the same server as the one you use in school.)
- All questions are graded proportionally (assuming the program runs at all). This means that if 40% of the question is correct, you will receive 40% of the grade.