School of Computer Science, McGill University

COMP-206 Introduction to Software Systems, Winter 2020

Mini Assignment 1: Familiarizing with Linux

Due Date Jan 23rd, 23:55

This is an individual assignment. You need to solve these questions on your own. Use the discussion forum on Piazza if you have any questions. You can also reach out to the course email address, utilize TA/Instructors office hours as necessary. Late penalty is -5% per day. Even if you are late only by a few minutes it will be rounded up to a day. Maximum of 2 late days are allowed.

You MUST use mimi.cs.mcgill.ca to create the solution to this assignment. You must not use your Mac command-line, Windows command-line, nor a Linux distro installed locally on your laptop. You can ssh or putty from your laptop to mimi.cs.mcgill.ca, or you can go to the third floor of Trottier and use any of those labs to ssh to mimi to complete this assignment. All of your solutions should be composed of commands that are executable in mimi.cs.mcgill.ca.

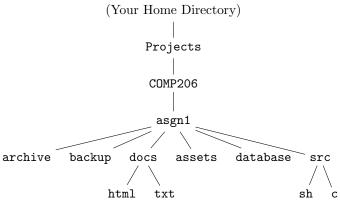
Questions in this exercise requires you to take screen shots of your work. This will serve as proof that you have done this assignment by yourself. Instructors/TAs upon their discretion may ask you to demonstrate/explain your solution. No points are awarded for commands that do not execute at all. (Commands that execute, but provide incorrect behavior/output will be given partial marks.) All questions are graded proportionally. This means that if 40% of the question is correct, you will receive 40% of the grade. Please read through the entire assignment before you start working on it. You can loose up to 3 points for not following the instructions.

Lab A and lab B will provide some background help for this mini assignment.

Total Points: 20

Ex. 1 — Familiarising with the File System (7 Points)

 (3 Points) Your first task is to create a folder structure similar to the one given below, immediately under your home directory. The structure below represents a typical directory heirarchy that can be employed in developing complex software applications. Below, Projects is a subdirectory of your home directory, COMP206 is a subdirectory of Projects, asgn1 is a subdirectory of COMP206, and so forth. Nothing to be turned in for this question.



2. (2 Points) Next, starting from you home directory (i.e., pwd shows that you are in your home directory), perform the change directory command, cd, to the asgn1 directory that you just created in the above step (i.e., now the pwd command should show that you are in the asgn1 directory). You MUST perform this using a single cd command execution that will take you directly from your home directory to the asgn1 directory.

3. (2 Points) Now use the 1s command to list all the directories that are immediately under the asgn1 directory. The listing should also include the permissions and the owner/group names associated each directory. (Therefore, this should demonstrate that you are the owner of these directories).

Turn in a screen shot of your shell that shows clearly that you executed the cd command from the previous question and the 1s command. The screenshot must be an image, either EX1.PNG or EX1.JPG.

Ex. 2 — Editing Files with vi (9 Points)

1. (a) (4 Points) In the docs directory, create a file by name license.txt using the vi editor. Enter the following contents in it.

```
Copyright : <your full name>, <year> - All Rights Reserved
Email : <your email address>
Dept : <name of your department>
```

- (b) (1 Point) From inside the docs directory, execute the pwd command.
- (c) (1 Point) From within the docs directory, execute the 1s command. Make sure that the 1s command show that the file was created by your user id, and its time stamp.
- (d) (1 Point) Next, cat the license file you just created to display its contents.

Turn in a screen shot that shows the pwd, 1s, and cat commands and the output that they produce. Include all of it in a single screen shot, EX2_1.PNG or EX2_1.JPG.

- 2. (a) (1 Point) From within the docs directory, execute the pwd command.
 - (b) (1 Point) Now make a copy of the license file to the backup directory that you had created before, with a new name, license_old.txt, by using the cp command (You MUST execute the cp command from the docs directory).

Turn in a screen shot that shows the pwd, cp commands and the output (if any) that they produce. Include all of it in a single screen shot, EX2_2.PNG or EX2_2.JPG.

Ex. 3 — Using grep (4 Points)

From the docs directory, use pipe to make the 1s and grep commands (with appropriate arguments to them) to interact such that it produces the following output. (You would of course have different owner/group names, permissions, file sizes and time stamp for your output. However, the names and order of the files and the content format of the output should be the same.)

```
-rw----- 1 jdsilv2 root 133 Dec 20 12:21 license.txt
drwx----- 2 jdsilv2 root 2 Dec 20 11:24 txt
```

Turn in a screen shot that shows the command you executed and the output that it produces as EX3.PNG or EX3.JPG.

WHAT TO HAND IN

Turn in the 4 screen shots, named properly as mentioned above (so that the TA can identify which screen shot is for which which question. You do not have to zip all of the images together.

FOOD FOR THOUGHT!

The following discussion is meant to encourage you to search independently for creative and optimal ways to perform rudimentary tasks with less effort and does not impact the points that you can achieve in the above questions.

- Can you find a way in which you can create all the directories using a single command in Exercise 1.1?
- Can you execute the copy command in such a way so that the timestamp of license_old.txt ends up being the same as that of license.txt in Exercise 2.2?