THE UNIVERSITY OF WESTERN ONTARIO

DEPARTMENT OF COMPUTER SCIENCE
LONDON   CANADA

Software Tools and Systems Programming
(Computer Science 2211a)

LAB 3
The week of September 27 - October 3, 2020
Due date: Monday, October 5, 2020, 11:55 pm Eastern Daylight Time
(Tuesday, October 6, 2020, 3:55 am Greenwich Mean Time)

The purpose of this lab is to get experience with Unix files, directories, symbolic links, and bash filename expansion.

1. Solve the following 16 questions in order.
In this question, we assume that you are in your home directory ∼ and directories ∼/*courses*, ∼/*courses/cs2211a*, ∼/*courses/cs2211a/Labs*, and ∼/*courses/cs2211a/Labs/lab3* already exist, and the **ls** command is **/usr/bin/ls**.

1. Create a symbolic link in your home directory named *lab_this_week* to ∼/*courses/cs2211a/Labs/lab3*.

2. Change your current directory to ∼/*lab_this_week*.

3. Use **man pwd** to check -P option.

4. Use **pwd** and **pwd -P** to display the current directory.

5. Use **man cd** to check -P option.

6. Use **cd .. ; pwd** to change to and then display the parent directory.

7. Change your current directory back to ∼/*lab_this_week*.

8. Use **cd -P .. ; pwd** to change to and then display the parent directory.

9. What is the difference between the results of the two **pwd** from questions 4? What is the difference between the two parent directories from questions 6 and 8?

10. Change your current directory to ∼/*lab_this_week* and create a directory named *filenames*. Change your current directory to ∼/*lab_this_week/filenames*.

11. In directory ∼/*lab_this_week/filenames*, create four files, *ab, abz, az,* and *Aa* and four directories, *.Ad, Ad, Bd,* and *Cd*. In directory *.Ad*, create a file *aa*, in directory *Ad*, create a file *aa*, in directory *Bd*, create a file *bb*, and in directory *Cd*, create a file *cc*.

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For question 12 to 16, your current working directory is $\sim$/lab_this_week/filenames.

12. Use **ls** command to list files whose filenames start with a and end with z.

13. Use **ls** command to list files whose file names start with A, C, or L without listing the directory contents, if any.

14. What is the result of **ls .*** and why? *.: A. ab abz Ad az Bd Cd ..: filename .Ad:aa*
Show all files and dictionaries

15. What is the result of **ls *** and why? *Aa ab abz az Ad:aa Bd:bb Cd:cc*
Show all files and dictionaries and their contents.

16. What is the result of **ls * *** and why? *Aa Aa ab ab abz abz az az Ad:aa Ad:aa Bd:bb Bd:bb*
Show all files and dictionaries and their contents twice. Cd:cc Cd:cc

For lab 3, you should have the following files in directory $\sim$/courses/cs2211a/Labs/lab3.

- **Lab_SubmissionForm.txt**
  Fill with the required information.

- **lab3_answer.pdf**
  Your answers for 1.9, 1.14, 1.15, and 1.16.

- **lab3.script**
  Use **script lab3.script** to capture screen session when typing commands for questions from 1.12 to 1.16.
  (Type *script lab3.script* in directory $\sim$/lab_this_week/filenames and when finished move *lab3.script* to the parent directory.)

- **filenames**

Change your current working directory to $\sim$/courses/cs2211a/Labs. Create file **YourUser-Name_lab3.tar.gz** and submit this file for lab 3. (For detailed information, please check *CS2211a Lab Submission Guidelines* and lab 2).

The following information can be found in *CS2211a Lab Submission Guidelines*. From next lab, we may not repeat these information.

For **lab3_answer.pdf**, the following six lines should appear on the first page.
CS2211a 2020
Lab number
Your name
Your student number
Your UWO User Name
Date Completed

For **lab3.script**, the first three commands should be:
date
who am i
pwd

2. Read the information in "Introduction to UNIX on the GAUL Network" provided in the course website on OWL.