THE UNIVERSITY OF WESTERN ONTARIO

DEPARTMENT OF COMPUTER SCIENCE
LONDON   CANADA

Software Tools and Systems Programming
(Computer Science 2211a)

LAB 2
The week of September 20-26, 2020
Due date: Monday, September 28, 2020, 11:55 pm Eastern Daylight Time
(Tuesday, September 29, 2020, 3:55 am Greenwich Mean Time)

The purpose of this lab is to get experience with Gaul system login/logout and file transfer processes with **ssh** and **sftp**, create and extract compressed archive (tar) files with **tar -czvf** and **tar -xvf**, basic unix commands, and how to submit labs and assignments through OWL.

1. Follow instructions of the following 8 steps.
In this question, we assume that in your home directory ∼, directories ∼*/tmp*, ∼*/courses/cs2211a*, ∼*/courses/cs2211a/Labs*, and ∼*/courses/cs2211a/Labs/lab2* are already exist, if not, use *mkdir* to create these directories.

- From your home computer, use **ssh** to login to your Gaul account.

- In your Gaul account, goto directory ∼*/courses/cs2211a/Labs/lab2*, create a C program, *HelloWorld.c* which prints "Hello World!", with **vi** and then use **gcc HelloWorld.c** to compile it.

- From your home computer, access course website and download *"CS2211a lab submission form"*.

- Use **sftp** to upload the *"CS2211a lab submission form"* from your home computer to the directory ∼*/courses/cs2211a/Labs* in you Gaul account. Make a copy of the form and save it to ∼*/courses/cs2211a/Labs/lab2*.

  - From your home computer, use **sftp** to connect to you Gaul account
  - Navigate your Gaul account (remote) file system to the directory ∼*/courses/cs2211a/Labs*
  - Navigate your home computer (local) file system to the directory containing *"CS2211a lab submission form"*
  - Upload the form
  - disconnect **sftp** from your Gaul account

- – Copy the form to $\sim$/courses/cs2211a/Labs/lab2
- – Fill the form with the required information

- Use **tar -czvf tar_file_name dir_name** to create a compressed tar file containing all the files and directories under $\sim$/courses/cs2211a/Labs/lab2.

  - – In your Gaul account, goto directory $\sim$/courses/cs2211a/Labs
  - – Use **tar -czvf YourUserName_lab2.tar.gz lab2** to create a compressed tar file *YourUserName_lab2.tar.gz* containing all files and directories under $\sim$/courses/cs2211a/Labs/lab2. **YourUserName** should be your UWO email user name or your Gaul account user name.

- Goto $\sim$/tmp directory and open and restore the tar file with **tar -xvf tar_file_name**. The purpose of this step is to make sure that you did not make mistake in the previous step in creating the tar file.

  - – Copy *YourUserName_lab2.tar.gz* to $\sim$/tmp.
  - – Goto directory $\sim$/tmp.
  - – Use **tar -xvf YourUserName_lab2.tar.gz** to restore *lab2* under $\sim$/tmp
  - – Check if you now have two identical directories $\sim$/courses/cs2211a/Labs/lab2 and $\sim$/tmp/lab2.
    In each directory, you should have the following files:
      Lab_SubmissionForm.txt,
      HelloWorld.c, and
      a.out.

- Use **sftp** to download tar file *YourUserName_lab2.tar.gz* from your Gaul account to your home computer.

- From your home computer, you are now ready to submit this file, *YourUserName_lab2.tar.gz*, for lab 2 through OWL.

- Note that the process of submitting assignments would be very similar to the process of submitting this lab. Therefore it is important that you understand the process and know the steps of submitting this lab.

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