**COMP 2560 Fall 2020**

**Lab 1**

There are 3 parts of this lab.

**Part 1**

The main purpose of this part is to show you how to easily record the whole computer screen. There are a few ways to do it and all are very easy.

**Option 1 (using Powerpoint):**

Watch this video and try it if you have PowerPoint <https://www.youtube.com/watch?v=fN4XL_EziKU&t>

**Option 2 (using an online free screen recorder):**

Go to this page  [https://www.apowersoft.com/free-online-screen-recorder](%20https:/www.apowersoft.com/free-online-screen-recorder) and hit the “Start Recording” button (not the “Download App” button), then follow the prompt.

**Option 3 (using quicktime on Mac):**

Watch this video and try it if you have QuickTime on Mac <https://www.youtube.com/watch?v=qwkW9hk1Brk>

No matter which option you will be using for this semester. Please make sure you record the whole computer screen and know where the recorded file is stored on your machine because you will be required to submit your screen recording file later for exams.

You will be required to record a short video later in Part 3 and you will be required to submit that short video.

**Part 2**

The main purpose of this part is to set up a working environment on your laptop to do all future labs, assignments, and exams throughout the semester.

It is strongly recommended to complete all your labs, assignments, and exams on the Linux server operated by the School of Computer Science.

**Even if you decide to do all the coding on your own machine, it is your responsibility to make sure all your code works properly on the Linux servers operated by the school because markers cannot replicate the exact working environment on your personal laptop.**

Please check out this link for information on Linux servers operated by the school, <http://www.help.cs.uwindsor.ca/en/top/servers/>.

There are 3 options to set up a working environment on your machine. Each option has its pros and cons.

**Option 1 (NoMachine):**

Please follow the steps below to set up a working environment on your laptop to use the CS Linux servers. It is very simple.

1. Read the information on this page <http://www.help.cs.uwindsor.ca/en/servers/remote-access/no-machine/> and then watch the demo video on this link as well to download and install No Machine on your laptop.
2. Finish setting up your working environment according to the demo video in the link above.

What you have done in the above two steps is to enable you to connect to the Linux server operated by the school from your laptop and then you can from now on work on all the assignments/Labs via No Machine on the school’s server if choose to do so.

The pros of this option is it provides a GUI to the cs server and resembles windows OS that most of you are familiar with. The cons is that occasionally, for various reasons, the NoMachine connection is not reliable and appears slow.

In the case that NoMachine does not work properly, we have another option.

**Option 2 (Remote SSH):**

Please follow the steps below to set up a working environment on your laptop to use the Linux servers via remote SSH. It is very simple as well.

1. Read the information on this page <https://help.cs.uwindsor.ca/en/servers/remote-access/secure-shell/> and then watch the demo video on this link as well to download and install the SSH client.
2. Finish setting up your working environment according to the demo video in the link above.

I recommend the Bitvise SSH client.

The pros of this option is that it normally gives you a fast and reliable connection to the CS servers. The cons is that it provides no GUI and you need to work via command line.

**You need to set up BOTH options on your machine and start practising using BOTH options.**

**The reason is that you need a back up plan during an exam if one of the options above is suddenly not working for you, although this situation is rare.**

**Part 3**

The main purpose of this part is to start coding using the working environment you set up in Part 2.

**First your lab instructor is going to show you how to edit, compile, and run the “Hello World” C program to get you warmed up and started using No Machine.**

If you are not familiar with Linux/Unix commands, a few should suffice for you to start. Practice the following command after **your lab instructor demonstrates.**

ls cd mkdir rmdir rm cat cp mv pwd who ps more man

Now get to the system programming part of this lab.

1. In class we discussed a few different flags when opening/creating a file. There are many flags discussed in the textbook, many of them are not related to what we are learning right now. Could you write a program that makes use of the flags O\_CREAT and O\_EXCL, and observe what does it do when try to open an existing file?
2. On BB course site, Under **Resources/Week 1 of Sep. 14-18/Intro To Unix Slides,** on page 20 of the PPT file, there is a C program. Using what you have learned in Part 1 and 2 of this lab, experience how to compile and run this program in the working environment you set up (either NoMachine or SSH client) and record a short video showing the source code, you compiling the code, and running the code. BTW, what does this program do?

For those students who are apt at Linux/Unix/MacOS/etc and already have a preferred working environment for coding on your own machine, please remember **, it is your responsibility to make sure all your code works properly on the Linux servers operated by the school because markers cannot replicate the exact working environment on your personal laptop.**

Please submit the short video file you made in step 2 above via BB course site. There will be a link for lab submissions.