CCNU-UOW
CSCI851 Autumn 2020
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Laboratory 1

1 Part One: The environment (You can also use MinGW/Cygwin on Win OS/ gcc on MAC OS or Linux)

This is preliminary material that should ideally be read/completed before the first lab. If you don't, you will need to do it during the first lab.

Those of you unfamiliar with Unix should follow the instructions quite explicitly. There is a file `UnixHelp.pdf` with some of the useful Unix functions. If you are unsure what is going on, please ask for help at the start of the first lab.

General information about the labs:

1. You should be keeping the code, and other answers. You don't need to submit this but it will be useful to have notes to refer back to and we may check progress as part of determining eligiblity for the mark. The mark is primarily based on being at the lab and working through the material, but it's recognised that people work at different rates and to different depths.

2. This lab is Unix based, students need to be connected to Banshee. To connect to Banshee you can use `BitVise`. It's installed on the lab computers and the Windows installer is available on the Moodle site. You should connect to the server `banshee.cs.uow.edu.au`, **Port number: 22**. Use your SOLS username and specify password as the method. This should come up with a query relating to the server identity. The fingerprint should match that specified on the Moodle site. Provided it matches, select `Yes`. Some information will be posted on Moodle for those connecting from a Mac.

3. Once you have connected you will be in your home directory. You can use `pwd`, present working directory, to determine where you are at any particular time.

   ```
   $ pwd
   /home/staff/l/lukemc
   ```

   Note that $ is the default command prompt. When you see that, you can enter a command.

4. It's a good idea to set up a directory off your home directory to store CSCI851 lab material. Organising it by week is a good idea.

   ```
   $ cd ~                  This will take you to your home directory from anywhere.
   $ mkdir CSCI251         This will create (make) a directory.
   $ cd CSCI251            This changes into the directory you have just made.
   $ mkdir W2              This is a subdirectory for the first lab, in week 2.
   $ cd W2                 Change into the subdirectory just made.
   ```

5. The material for each week will be in a subdirectory of `/share/cs-pub/251/Labs` on Banshee. If you are in your own directory for a week you will be able to copy the lab material for a week, such as W2, using the following command:

   ```
   $ cp /share/cs-pub/251/Labs/W2/* .
   ```

   The full stop is a necessary part of the command, it specifies where you are copying to.

6. You can go to a directory, such as that for W2, using

   ```
   $ cd /share/cs-pub/251/Labs/W2
   ```

   You don't need to go to the directory now.

7. You can look at the content of a directory using `ls`.

   ```
   $ ls

   or in more detail using ...

   $ ls -la
   ```

8. With text files you can read them using something like `cat` or `less` or `more`.

9. It would be useful to learn how to use one of the editors on Banshee, something like `je` or `pico`.

2 Part Two: Compilation

1. Make sure you can use an editor, and get the following code into a file `Hello.cpp`.

   ```
   #include <iostream>
   using namespace std;

   int main()
   {
        cout << "Hello World!" << endl;
        return 0;
   }
   ```

2. Compile `Hello.cpp` using the following instructions, the last illustrating how ugly things can get.

   ```
   $ CC Hello.cpp
   $ g++ Hello.cpp
   $ gcc Hello.cpp
   ```

3. The default name for the executable is `a.out`. Use the argument `-o name` to specify a new name.

   ```
   $ CC -o Hello Hello.cpp
   ```

4. You can run the executables using

   ```
   $ ./a.out
   $ ./Hello
   ```