Development on Linux

That is where we will be doing our C++ programming. Linux has a command line interface. Everything we want to do has to be done via commands. Unfortunately this means we can’t use the mouse 😞

Why use Linux:
• Free licensing for the Operating System for all users
• Free development tools for C++ development

If you are interested...
http://en.wikipedia.org/wiki/Linux
http://www.whylinuxisbetter.net/
Getting around on Linux

In operating systems with graphical interface such as windows, directories are often represented as folders. To navigate into the folders we can simply click on it.

On Linux the command to change directory is:

```
    cd <name_of_directory>
```
This changes directory to the directory you specified

```
    cd ..
```
This goes back up to the parent directory

```
    cd
```
This goes back to your home directory
Creating and Deleting Directory

The use of directories is recommended to keep your files organized.

To make a directory:

```
mkdir <name_of_directory>
```

Example: `mkdir cs111`
This creates a directory cs111

To delete a directory that is empty:

```
rmdir <name_of_directory>
```

Example: `rmdir oldstuff`
This will delete a directory named oldstuff.
More about Linux Directories

When you first login to your account you land in the home directory. A directory may contain a lot of files as well as other directories.

Directories allow organization of files.

A good visualization the directory structure is a tree.

If you want to find out which directory you are in (at any point):

`pwd`
**Directory Operations Exercise**

1. Create a directory in your home directory call it ‘cs111’
2. Change into that directory
3. Then create a sub-directory in cs111 call it ‘lab1’
4. Change into that directory
5. Issue the ‘pwd’ command to see where you are
   It should read /home/.../.../.../cs111/lab1

**Listing Files and Directories**

One of the most important commands we will use is the one to list all our files in the present directory.

We can do so with:

```
ls
```

We can also do a long listing of our files:

```
ls -l
```

This gives a little more details including permissions info.
Copying and Moving files

Sometimes we might want to copy files to make a backup, here is a copy command:

```
cp <original_filename> <new_copy>
```

Example: `cp hello.cpp helloworld.cpp`

If we want to rename your file we can do so with this command:

```
mv <original_filename> <new_filename>
```

Example: `mv hello.cpp helloworld.cpp`

Important note: if your destination file already exists, it would be overwritten, there is no undo!
Deleting Files

If there was a file we did not need anymore we can use delete command to erase the file:

```bash
rm <name_of_file>
```

Example: `rm hello.cpp`

You can also delete a directory along with all the files in it:

```bash
rm -r <name_of_directory>
```

Example: `rm -r mystuff`

Important note: There is no undo delete! If you delete it, it is gone!
**File Operations Exercise**
In the lab1 directory (/home/.../.../.../cs111/lab1) perform the following:

1. touch testfile.cpp
   This creates a blank file _called testfile.cpp
2. cp testfile.cpp hello.cpp
3. mv hello.cpp helloworld.cpp
4. rm testfile.cpp
5. ls

**Note About Filenames**
In general we try to stay away from the space character in file names. So in place of space we use the ‘_’ underscore character. However if you must use a space in the filename, use ‘\’ backslash character follow by a space.