Getting Started Guide

1 Summary

- Terminal Setup
- Text Editors
- Copying files to student environment

2 Terminal Setup

2.1 Terminal - OSX, Cygwin, Linux

- Open the terminal.
- Enter the command: `ssh -Y your-username@linux.student.cs.uwaterloo.ca`
  - Note that the `-Y` option allows for `X11` forwarding (e.g. graphical applications).
  - Username refers to your Quest username.
- Enter your Quest password.
  - Do not be alarmed if you do not see any text when doing so. This is normal. You are still entering your password.
  - Hit enter/return when you have completed entering your password.
  - If this doesn't work then you need to reset your password.
  - Visit `http://www.student.cs.uwaterloo.ca/password` to do so.
- Note that your default shell may not be bash. To make your default shell bash, visit the password reset site.

2.2 PuTTY - Windows (Generally)

- Open PuTTY.
- In the **Host Name** field enter linux.student.cs.uwaterloo.ca
- In the sidebar under **SSH**, click **X11**.
- Click the box that says `Enable X11 forwarding`.
- Press `Open`.
- Enter your Quest username and password.

  - Again, it may appear that nothing is happening when you type your password but your keystrokes are being hidden for privacy.

2.3 Cygwin - Windows only

- Cygwin is a Windows program that simulates the Unix experience.
- It can be downloaded from `http://www.cygwin.com/`.
- Note that during installation you will be **prompted but not required** to select packages to install.
- You should install the ssh package (openssh/libssh2_1) at the very least.
- Cygwin currently ships with an X server as well.
- Install the vim package (vim is course staff-approved) or text editor package of your choice.

2.4 XServer

- To run X (read: graphical) applications, your computer needs to be running an X server.
- Linux installations by default are running one.
- OS X installations may or may not be (depends on OS X version).
  - See the XQuartz project for more information.
  - `http://xquartz.macosforge.org/`
- Windows will also require an X server -we recommend XMing.
  - See `http://sourceforge.net/projects/xming/`.

3 Text Editors

- There are several different command line text editors that you can use.
  - Vi/vim is what we recommend and will give you less grief during the course.
  - Other options are emacs, pico, nano.
  - In addition, there are other graphical text editors that might be handy (e.g. gvim, gedit).
    * Emacs does not meet Unix standards and has issues with newlines. Be careful.

    * Pico and nano are both simple and it is easy to outgrow them.
  - Countless debates have arisen between vi and emacs. We're not going to get into the trade-offs besides the newline issue.

- A quick vim rundown:
  - Enter the command `vim file` to create or edit an existing file named `file`.
  - By default vim starts in command mode.
  - Different keystrokes activate different commands.
    * **h,j,k,l** -navigate like the arrow keys (which generally work in vim as well)
    * **x** -delete highlighted character
    * **r** -replace highlighted character with next key pressed
    * **o** -create a line below the current line (starts insert mode)
    * **O** -create a line above the current line (starts insert mode)
    * **i** -start insert mode (can enter text -arrow keys may or may not work)
    * **Esc** -return to normal mode
    * **:w** file -save the file to given filename
      · If no filename given, then write to filename specified when vim was opened
    * **:wq** -write and quit
    * **:q** -quit
  - Use `vimtutor` to learn all you need to know about vim
    * Enter `vimtutor` on the command line to start the tutorial

4 Copying Files to Student Environment

If you are working locally on your machine, you will need to copy files to the student environment for testing. Remember that marmoset runs in the student environment and it is **your responsibility** to ensure that your code compiles in the student environment.

If you have access to a terminal (mac, linux, cygwin) on your local machine, use the `scp` command (secure copy) to transfer the files. On the command prompt, type in `man scp` to get the manual page for the command.

If you are using putty (on Windows), you will need a file transfer program. Winscp and FileZilla are two such popular and lightweight programs.