**Nature**

Prior to CS1313, many students are used to using operating systems that are actually human friendly and can be navigated with a mouse and keyboard. Apparently, that is not efficient enough for this class. The purpose of Programming Project 1 is to teach students how to SSH into the headless Linux computers provided by OU. After doing so, students will learn how to navigate the Linux computers through the terminal shell as opposed to the normal GUIs that have been used to for years.

**Method**

Dr. Neeman has conveniently written his students some very clear instructions as to how to get started with Linux. Following the instructions written on the PDF allows students to SSH into their remote computers, navigate their file systems, and create/copy the necessary files for their projects. Because there is no graphical user interface, every action is performed through the command line by typing Linux commands into the terminal.

**Steps**

To begin, students must setup their front-end terminals using specific settings outlined in the PDF. After setting up their own terminal shells, students must SSH into the OU servers which conveniently live at “ssh.ou.edu.” Next, students must perform a series of commands which sets up their programming project. During this step, students utilize functions that create and copy directories and files. After obtaining the necessary files, students then learn how to edit and run source code files with the nano text editor. After this, students create script files which record their interactions with the computers so that the graders grade better. When students are done debugging and compiling their code, they must use a third-party software to copy the files from their Linux server into their local computer. From there, they will write a cover sheet as well as an essay similar to the one you are currently reading. Finally, they upload all of these files onto canvas to be graded.

**Issues and Problems**

While learning how to navigate the Linux computer, there were several problems that came up. If the commands are not typed in exactly as they are written in the instructions, then nothing but errors will appear within the terminal screen. Another issue was getting used to reading text instead of seeing fancy icons in fancy windows. It was very difficult to adjust to at first but over time it became easier and even more preferrable.

**Concepts**

After competing this project, I now know how to navigate through a headless Linux computer. I learned that it is faster and more efficient using a Linux computer because my hands do not have to ever leave the keyboard.

**References**

<http://cs1313.ou.edu/>

<http://cs1313.ou.edu/proj1.pdf>

<https://www.ssh.com/academy/ssh/protocol>