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| **You should save/rename this document using the naming convention LabX-MUid.docx (example: Lab1-johnsok9.docx).**  **Objective**: The objective of this exercise is to:   1. Review lecture information 2. Verify SSH usage 3. Review and implement basic Linux commands 4. Implement the Linux http server 5. Learn and use a suitable text editor   **Submit**: Both the word document and screen grabs  Fill in answers to all of the questions.  You **may** discuss this with your fellow students or the instructor. |

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| **Name:** | **Ben Hilger** |

# Part #1: Review basic bash-shell skills

*Estimated time: 20minutes*

**Exercise:** This course will use the following Linux server throughout this course. You should memorize the name of this server: **ceclnx01.csi.miamiOH.edu**.

**Exercise:** Complete this part of the exercise via the following steps:

1. SSH Access (check out one of the available videos in this module)
2. Using one of the video demonstrations as reference, perform the following operation:
   1. Open a terminal on your computer
   2. SSH into the Linux server ceclnx01.cec.miamioh.edu

If you have trouble logging onto the ceclnx01.cec.miamioh.edu, seek help. Confirm that you are logged onto ceclnx01 via the hostname command run as the bash shell prompt ($) as and pressing the Enter (↵) key, shown below: (your unique id will appears instead of johnsok9)

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| Johnjohnsok9@ceclnx01:~$ **hostname**↵  ceclcecnx01  johnjohnsok9@ceclnx01:~$ |

1. Briefly review the following commonly used GNU/Linux commands for use in the next part of the exercise:

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| ***Commonly used Linux shell commands*** | | |
| ***Command*** | ***Description*** | ***Example usage*** |
| exit | Log out of the Linux box | **$** exit |
| cd | Change directory | **$** cd /usr/X11R6/bin |
| pwd | Show present working directory | **$** pwd |
| ls | List files. | **$** ls –l  **$** ls -l ../\*.s |
| mkdir | Make new directory | **$** mkdir csa-383 |
| rmdir | Remove empty directory | **$** rmdir csa-383 |
| cp | Copy file or files or entire directories on the same computer. | **$** cp ../a.s .  **$** cp –r ../a?b\*.s **.** |
| Scp  EXAMPLE TEXT ONLY – WILL NOT RUN | Copy files from from one computer to another. Syntax: scp SourceFilePath LoginID@server.edu:DestFilePath | **$** scp a.txt johnsok9@a.edu:cse383/  **$** scp johnsok9@a.edu:ex1.cpp ./ |

1. Double check your login – When you log onto the Linux machine, you will start off in a default directory called your **home** directory. You should create all your files and save your work off sub-directories under your home directory. To figure out what your home directory is, you need to use the pwd (present working directory) command (that is, type pwd at the shell ($) prompt and press enter key, which is indicated by ↵) as shown below:

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| johnjohnsok9@ceclnx01:~$ **pwd** ↵ |

**Note**: The home directory will be in the format /home/MUID (where MUID is your Miami University unique ID), example: /home/johnsok9. In addition, note the following important terminology associated with directory hierarchies:

* **Absolute path**: In Linux, paths always start with a **/** (forward slash or just slash, *i.e.*, the division sign) indicating the root directory. Example: /home/johnsok9, ~/, or /usr/bin/ls etc.
* **Relative path**: Paths that **do not start** with a / are relative paths. Relative paths indicate directory and file structures with respect to pwd (present working directory). Example: ../cse383 or ../ or ../../courses/csex43/exercises or cse383/exercises etc.

1. Briefly practice using the above commands to perform the following tasks:
   1. Check to see your present working directory
   2. Change to your home directory (hint: ~/)
   3. Create a directory named cse383 in your home directory. Verify that the directory has been created by listing the files.
   4. Copy a file named /usr/share/common-licenses/GPL to the newly created cse383 directory. What command(s) can you use to confirm that you have successfully copied the file?
      1. Ls ~/cse383

**Be prepared to answer the following questions:**

1. What is the server-name or hostname of the Linux server being used for this course?

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| The hostname of the Linux server is: | ceclnx01 |

1. What was the full ssh command you used (from Windows-powershell, putty instructions, or a Mac-Terminal) to log onto the Linux server:

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| ssh hilgerbj@ceclnx01.csi.miamioh.edu |

# Part #2: Setting up a simple web server

*Estimated time: 20 minutes*

## Background

* Our linux machine has a built-in web server on port 80. We have two options for making it deliver our own content.
* We could create and start our own server on a different port (later in this course)
* We can host from our own public html directory (known as ~ID and located in ~/public\_html)

**Exercise:** In this exercise you are to create your own public html directory and populate it with a given resume.

1. Create the directory “public\_html” in your home directory
2. Download the template zip file
3. Install it into the correct location in your directory so that <http://ceclnx01.csi.miamioh.edu/~ID> will display the following:
   1. Hint – you will need to move/copy some files for this to work
   2. **Find and use the blue template index.html**

A screenshot of a cell phone

Description automatically generated

# Exercise: Part #3: Text Editor

*Estimated time: 20 minutes*

## Background

We need to be able to work efficiently and well within our Linux environment. This means that you must know how to edit within the environment instead of requiring things to be brought out to a window, edited and copied back.

**Exercise:** This exercise is designed to provide you with background on your choice of two different linux editors. You do not have to use these specifically; however you must use a character based one (not xwindows) and become proficient in it for this class.

1. **Learn an Editor**

Vim (enhanced version of the original vi) is a programming editor. A little hard to learn, but very powerful once learned. Some simple tutorials are available here:

* <https://www.openvim.com/>
* <https://danielmiessler.com/study/vim/>

Nano is a simple editor to learn with powerful commands once you get used to it. Some simple tutorials for Nano are available here:

* <https://staffwww.fullcoll.edu/sedwards/Nano/IntroToNano.html>
* <https://www.howtogeek.com/howto/42980/the-beginners-guide-to-nano-the-linux-command-line-text-editor/>

1. **Simple use of an editor**

Using the editor of your choice. Create an hello.html file in your public.html directory (no line numbers) and test it using <https://ceclnx01.csi.miamioh.edu/~ID/hello.html>

Replace ID with your unique id

1. <!DOCTYPE html>
2. <html lang="en">
3. <head>
4. <meta charset="utf-8">
5. <meta name="viewport"
6. content="width=device-width, initial-scale=1, user-scalable=yes">
7. <title>Hello World!</title>
8. </head>
9. <body>
10. Hello World!
11. </body>
12. </html>
13. **More complex use of the editor**
14. Edit the index.html file (from the resume) and replace all of the John Smith instances with your own name.
15. Find the place where the image (to the left of John Smith is at the top) is referenced. Find and download a suitable picture on the internet and replace the link in the file with your downloaded image. Verify.

Hint: look for class=”portrait” .

**SUBMIT:**

**Upload this Word document (with correct name) and your working web page screen grabs to Canvas Assignments Lab 1**

Your next task is to submit your program to the course website in canvas in the Assignments folder. Before proceeding, make sure that you can see your file extensions.

To begin the submission process, you must first go to canvas Assignments Lab 1 and select Add Attachments.

***Be sure to choose the proper file(s).***