CST 334 (Operating Systems)

Dr. Glenn Bruns

# Lab: Linux and Shell

Purpose: the purpose of this lab is to make sure you can do the things we'll do all the time in labs and in homework assignment.

1. Log into mlc104. (please don't use a different machine)
2. When you log in, you will be in your home directory. What is the full name of your home directory?
3. Use a text editor to create a file hello.c that contains the following text. The text editors available on mlc104 are nano, vim, and emacs. I recommend nano if you haven't used a plain text editor before. Please type the code in; don't just copy and paste.

#include <stdio.h>

// hello world in C

int main() {

printf("hello, world!\n");

return 0;

}

1. After you've exited the editor, use the 'cat' command to display the contents of the file.
2. Now use 'cat' to display the contents of the file bash-cheat-sheet.txt that is in directory /home/CLASSES/brunsglenn.
3. Now use 'more' to display the contents of the same file. Press space to advance through the file, page-by-page. Type 'q' to quit.
4. Compile your hello.c program. Here's one way to do it: (the $ is the bash prompt)

$ gcc -o hello hello.c

1. Run your program. Here's one way to do it:

$ ./hello

1. Edit your program to change the message, then re-compile, and re-run it.
2. Now copy the hello.c file on mlc104 to your own machine. Use [these instructions](https://docs.google.com/document/d/1TY6waCCHFkSBYCWKsHUelg9KH2yjXS2VOAyZLIPu93U/edit?usp=sharing) if you don't already know how to do it.

If you still have time, answer the following questions by using bash commands on mlc104. Dr. Bruns’ home directory is /home/CLASSES/brunsglenn. last resort.

1. How many bytes in /home/CLASSES/brunsglenn/data/salaries.csv?
2. The file employees.txt is under Dr. Bruns’ home directory, in the data subdirectory. Looking at that file, what is Randy’s job?
3. What is the largest file in /usr/bin? (the ls command might help; use man ls to see options for the ls command)
4. What does the -t option of command ls do? (hint: use command man ls if needed)
5. Create a directory under your home directory named cst334.
6. Go to your cst334 directory.
7. Create a homework directory under your cst334 directory.
8. Set permissions on your homework directory so only you have access:

chmod 700 homework

(Soon we'll learn more about how this works. Basically, it gives you all permissions and others no permissions.)

1. How many lines in your hello.c?
2. How many files in the root directory? (The root directory is just /)
3. How many files in directory /usr?
4. Some directories for storing Linux commands are /usr/bin and /bin. Where is the ls command located?
5. Where is the bash command located?
6. Go to your home directory.
7. Run the command ps. What is it showing?
8. Run the command bash. What do you think happened when you did that?
9. Run the command ps. What changed from when you previously ran ps?
10. If you still have time, use the command ‘man’ on each of the commands listed on the ‘Getting started with Bash’ document, and find out options supported by the commands. Then experiment with all the commands and options. For example, the ‘ps’ command is very flexible.