Homework 1: due Friday, Oct. 20th, midnight

1. What is the difference between commands wc `grep -l int \*`and grep-l int \* | wc ? How does the output differ?

* **wc `grep -l int \*`**
  + Will find all files with instances of the string “int” and run a word count operation on them, returning the amount of words, lines, and bytes contained in each file.
* **grep-l int \* | wc**
  + Is running the word count operation on the actual result of the grep –l int \*, which is a list of files with instances of the word int. So the result will be a word count of how many files were found, the amount of lines (which will pertain to the amount of files found) and the number of bytes in those file names found.

1. Read the man pages about the lsa nd wccommands. Devise a minimal pipeline command that will print the number of files and subdirectories in the current directory (including hidden ones, but not the current and parent directory entries).

* **sudo ls -aR| wc –l**
  + If my logic is correct and the execution portrays what I believe it portrays, then this command will target every file and directory in the current directory (Including hidden file/directories). Every directory encountered is recursively searched in the same fashion until there are no more sublevels. Every instance of a file or directory/subdirectory is then added to a count as a line encountered. The addition of the sudo command is for the case that there may be restricted directories. With a super user password, these are counted too.

1. Create a directory called IveGotRights in your home directory. Set its permissions to: read, write, and execute permission for the owner, read and execute permission for the group, execute permission for others. What are the commands to do these tasks?
   * **cd** – To get to the home directory
   * **mkdir IveGotRights** – To create the directory
   * **ls –ld IveGotRights/** - If you wish to view the current permissions
   * **chmod 751 IveGotRights/** - To give rwx to user, rx to group and x to others
2. Devise a pipeline command using head, tail and grep that will extract lines containing Computer Science course codes as distinct words from the 5th to 12th lines:

1. This is CSC322

2. CSCABC and some TV tunes

3. All CSC students do MTH309 as part of their major

4. Csc322 is how Dr Rosenberg writes the code

5. CSC322 rules!

6. CSCABC

7. We all have taught Csc517 at some time

8. CSC111MTH111BBC111

9. MTH112 = Calculus II

10. MTH309 is prerequisite to CSC527, and that's a good thing

11. CSC is our code, 911 is the police

12. Artificial Intelligence (CSC545) is not for wimps

13. CSC531 will run next semester

14. ART101 is fun

The "CSC" must start with an uppercase "C" but the "SC" may be written in any

combination of uppercase and lowercase. A correct solution extracts lines

numbered 5, 7, 10, and 12.

* **head -n 12 text.txt | tail -n 8 | grep -iE '[C]sc[0-9]{3}[,\|[:blank:]\|)]'**

1. What would be a command that lists all the files (in the current working directory) that start with an alphabetic character, contain a digit, and end with a period followed by a lowercase character then one more character?

* **ls -l \*[a-zA-Z][0-9].\*[a-z]**

1. Assume you have 3 files named file[1,2,3].txt that contain 5 columns of data. What would be the command(s) to (i) pool these files, (ii) extract columns 1,2, and 5, (iii) rearrange columns as 5,2 and 1 and (iv) put the information in a file named myFile.txt.   
   * **paste -d" " file[1-3].txt > newFile.txt** 🡨 to pool them into one new file.
   * To cut individual columns and rearrange them in a new file we do the following,  
       
     **$ cut -d" " -f 1 newFile.txt > col1.txt**

**$ cut -d" " -f 2 newFile.txt > col2.txt**

**$ cut -d" " -f 5 newFile.txt > col5.txt**

**$ paste -d" " col5.txt col2.txt col1.txt > myFile.txt**