Hints:

- Pipes:

```
<command1> | <command2> | <command3> | ...
```

  The pipe operator chains commands together. It passes the output of a preceding command as the input of the next command. This continues for however many pipes you wish to add.

- Redirection:
  - > overwrite
  - >> append
- Wildcards and Curly Braces:
  - ***** matches zero or more characters
  - **?** matches one character
  - **{}** specifies one of the characters in the braces
  - **{a,b,c}** corresponds to placing an a, b, or c
  - **{x..y}** range x to y where x and y are letters or numbers.

1 Lab Instructions:

1.1 Lab Setup:

1. Create a directory named 'username_lab07'.
2. Change directories into your newly created 'username_lab07' directory.
3. Create a file named 'lab07.sh' and open it for editing using the 'vim' text editor.
4. Place all **WORKING** commands for the subsequent parts of the lab in this 'lab07.sh' file **AFTER** running them in the terminal to try them out.

1.2 Create commands that accomplish the following tasks:

1. Use the following URL along with the 'wget' command inside your script to download a file to the current directory called 'mnist_condensed.csv'.
   https://raw.githubusercontent.com/s7117/csce215labs/main/mnist_condensed.csv
2. Get the first 10 lines of the 'mnist_condensed.csv' file.
3. Get the last 8th, 9th, and 10th lines of the 'mnist_condensed.csv' file. (Hint: Use a pipe with the head and tail command.)
4. Redirect the output from the previous step to a file called 'lab07.out' (You can use either overwrite or append for this).
5. Use input redirection operator '<' to redirect count the lines in the 'lab07.out' file.
6. Get the 23rd line of the 'mnist_condensed.csv' file and redirect it to overwrite the 'lab07.out' file.
7. This time use the 'cat' command with a pipe to the 'wc -l' command to count the number of lines in the 'lab07.out' file. Note that there should only be one line in the 'lab07.out' file now.
8. Re-run the commands from step 3 and step 6 using the append redirection operator to append the output of the commands to 'lab07.out' instead of overwriting the contents.
9. Run 'wc -l lab07.out' to count the number of lines in 'lab07.out'. (There should be 5 lines in the file now: line 23, 8, 9, 10, and 23 again.
10. Using the curly braces (without any spaces) create 26 directories named dirA thru dirZ.
11. Using the curly braces, create 10 empty files in each of the 26 directories called file01.txt thru file10.txt (For example: dirA should have file01.txt, file02.txt, and so on)
12. Create two directories named 'dir123' and just 'dir'.
13. Create a directory named 'OLD'.
14. In **ONE** move command, move all directories starting with 'dir' and the 'mnist_condensed.csv' file into the 'OLD' directory.
15. Finally, delete the OLD directory.
16. All you should be left with now is just your lab07.sh and lab07.out files.

1.3 Tarball:

Now we will tarball our submission up for submission so your lab is all packaged up nice and neat!

1. Now, go up one directory to get out of the directory named 'username_lab07' that we created at the beginning.
2. Use the following command:

```
tar -zcvf username_lab07.tar.gz username_lab07
```

2 Submission:

Before submitting your assignment be sure that your script works as intended using 'bash lab07.sh' to run your script. Once you are sure everything looks good, submit your final tar file to Blackboard.