Lab 1

Linux Directory Structure, Linux Command Line, Bash and Hello World!

- Read about Linux Directory Structure and some basic commands here.
- Before the GUI and mouse were used commercially, the interaction with computers was command line. So make use of the mouse as least as possible.
- Perform all the instructions in today's lab through the terminal. ASK the TAs when you have doubt. Remember the quote by Mark Twain "He who asks is a fool for five minutes, but he who does not ask remains a fool forever."
- Computers have become smart and people have become lazy, so use the auto-completion(TAB) as frequently as possible.
- All the commands have a "manual" for the description of what they do, how should they be used. Refer to the 'man' command for the manual of any command.
- Forgot your command? Don't worry, do apropos.

1. Exploring
   1.1. Download the sample folder from here.
   1.2. Go to the downloaded folder(Lab1) without unzipping it.
   1.3. Unzip it. (It is easy from GUI, try doing it from the terminal)
   1.4. Go the unzipped folder(Lab1) now.
   1.5. List all the files and folders here.
2. Creating
   2.1. Create a folder named "lab1 solution" (without quotes with space).
   2.2. Create an empty text file "lab1 solution.txt" in the folder (without quotes with space).
   2.3. Go to the Lab1 folder and create three folder p/q/r, ie create p in Lab1, q in p and r in q. Can you do this with just one command?
3. Aliasing
   3.1. The screen must be full of commands and their respective output. Clear the screen.
   3.2. You would be using this command frequently. Can you make a shortcut for that?
4. Listing
   4.1. List the contents of lorem_ipsum.txt in "original folder" as well as "duplicate folder" in the Lab1 folder.

4.2. List the count of words, characters and lines of both the lorem_ipsum.txt file.
4.3. Find and list the count of words, characters and lines of the “very large file.txt” file.
4.4. Print the first 10 lines, last 10 lines and middle 10 lines(of your choice) from the “very large file.txt”

5. Modifying
   5.1. Open vim editor and change the file “letter.txt” in the Lab1 folder by writing your name in the last line. What’s the problem?
   5.2. Change the permission, granting write permission only to the user.
   5.3. Perform 5.1 again now. Can you do it without opening the vim editor?
6. Moving
   6.1. Move the “very large file.txt” from its original folder to the “duplicate folder”.
   6.2. There is folder “reated_for_deletion” in the Lab1 folder which was supposed to be named “created_for_deletion”. Rename it.
7. Removing (NOTE: There is no concept of recycle bin in the terminal!)
   7.1. Remove the contents of the folder “created_for_deletion” and not the folder.
   7.2. Remove the empty folder “created_for_deletion” in the Lab1 folder.
   7.3. Remove the folders p, q and r created in 2.3 with just one command.
   7.4. Remove the “duplicate folder” in the Lab1 folder.
8. Copying
   8.1. Copy the “original folder” in the Lab1 folder along with its contents into “duplicate folder”
9. Repeating
   9.1. Print 1-20 in the terminal.
   9.2. Print first 10 odd and even numbers and save them in files “odd.txt” and “even.txt” respectively.
   9.3. Create a folder “repeat” and make 10 files, where the i^{th} file is named file_i.txt, eg 5^{th} file is file_5.txt.
   9.4. Rename all the above created files from “file_i.txt” to “file i.txt” and put you name in that file.
10. Bash-scripting
    10.1. Perform 9.3 and 9.4 using bash scripting
11. Seeking
    11.1. There’s a hidden file, seek it, change permissions and execute it.
12. Greeting
    12.1. Write a C program that outputs “Hello World!”