Lab-2 Exercises:

<u>Submission deadline:</u> 9th Jan, 7:00 pm. (Submit on moodle)

Submission instructions:
Lab2_2018XXXXXX
|-- typescript
|-- qn1.sh
|-- qn2.sh
|-- qn3.sh
|-- qn4.sh

Submit this as Lab2_2018XXXXXX.tar on moodle.

Warm up commands

1. Change from current directory to /etc/apt using absolute path.
2. Switch back to the directory you were working in.
3. Change from this to /usr/bin using relative path.
4. Go to the user's home directory using one command.
5. In Documents, create a directory called Lab2.
6. Enter this directory

File permissions, patterns in a file

1. Consider the file "inp.txt". Display all occurrences (case insensitive) of the word "to" in the file.
2. In the same file, display all the lines in which the word "is" occurs (not as a part of any other word). (Words like "despised" should not be present in your output).
3. Display 2 lines below the word "die".
4. Remove read, write and execute access from the file "inp.txt" for group and others using 2 different ways. (symbolic and octal)
5. Allow everyone to read write and execute the same file (inp.txt), using a single command
6. View all the groups that the current user account is attached to.
7. Change the group of the file "inp.txt". (chown)
8. List all the files from your home directory for which group has execute permissions. (Hint: piping, grep)

Piping and redirection

1. Create a new file named out.txt, which contains the calendar for this month. (output redirection)
2. To the same file, append today's date (using the command).
3. Display the contents of this file and the last 5 lines of the file.
4. Display the lines 5 to 15. (Piping)
5. Display the number of lines in the output of task 5, using piping.
6. Using the echo command, write the string "This day is awesome." in new file called "out1.txt".
7. Print the number of words in the file "out1.txt".
8. Append the line "Good Morning" in the same file.
9. Print the number of lines in the file "out1.txt".
10. Print the 5th column of the file "out.txt".
11. Print from column number 3 to column number 9 (both included) of the file "out.txt".
12. Extract from the fourth column till the end from the file "out.txt".
13. Print the second and the fifth words of every row from the file "out1.txt" using a single command (Hint: space delimiter).
    Expected output:
    day awesome.
    am forward

Write bash scripts for the following

1. Add two numbers which are provided as command line arguments. Display error message if the correct number of arguments are not provided.
2. Add an extension ".try" to all the files in the current directory.
3. Print all odd Fibonacci numbers that are <=100.
4. Sort a list of command line arguments (could be any number of them) only using basic commands, loop and arrays. Do not use inbuilt sort.

Bonus Questions (bash scripting, advanced commands, not graded):
Note: These questions are for enthusiasts who like to learn and explore new commands and use them. This is also a brush up exercise for next lab, so do try it out. This need not be submitted, but you can discuss them with the TA.

5. Consider the following input in the form of a csv file. Output contains every set of 2 consecutive rows merged into one line, separated by a colon.

   Input:
   Toyota, Japan
   Mitsubishi, Japan
   Rolls Royce, UK
   Tata, India
   Citroen, France
   Ford, US
   Volkswagen, Germany
   Hyundai, South Korea
   Fiat, Italy

   Output:
   Toyota, Japan:Mitsubishi, Japan
   Rolls Royce, UK:Tata, India
   Citroen, France:Ford, US
   Volkswagen, Germany:Hyundai, South Korea
   Fiat, Italy

6. List the commands you have used on your terminal (from history) in descending order of usage (frequency).