AIR UNIVERSITY ISLAMABAD

OPERATING SYSTEMS Spring, 2022

ASSIGNMENT 01

Given Date: March 7th, 2022 **Due Date: March 12th,2022** 11:50 pm

Total Marks: 40

Instructions

- Zero marks will be awarded to the students involved in plagiarism.
- All the submissions will be done on google classroom.
- You have to submit zip folder named as ROLL_NUM_SEC containing three script files named as Q1, Q2, Q3. Naming convention has to be followed strictly. As, it will carry 2 marks for proper naming convention and correct submission.
- Each part will carry different marks. Marks distribution is given with each part.

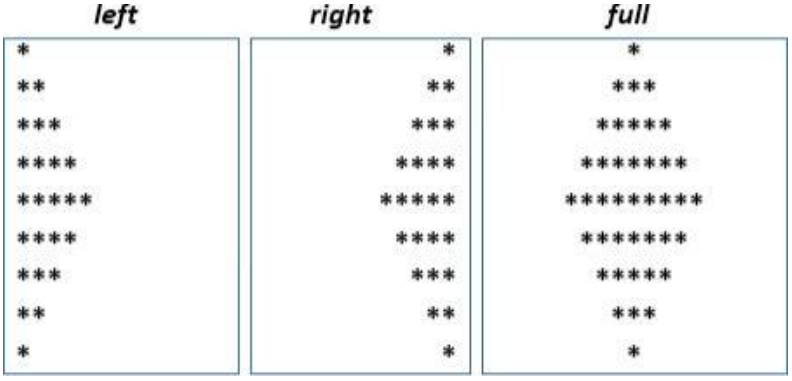
Read the complete instructions given in each part. In case of any query you can email ziarehman@students.au.edu.pk

- Be prepared for viva or anything else after the submission of assignment for two weeks.

• Shell Scripting

• Question 1.

- Write a script that print these patterns: **[10]**



QUESTION NO. 02 **[20]**

Write a script that displays a main menu and perform tasks based on the input value. Valid *input values = {1, 2, 3, 4, exit}*.
The different options *1,2,3,4* will display the output as follow:

1. Input a filename from user and display permissions of that particular file. Then invert the permissions e.g. If permissions were *r-x* change them to *-w-*. Then again display the updated permissions of that file. [5]

2. Input a *filename* and a *string* and search it in the file. Output the lines of file where that *string* is found. But if the *string* contains a *dot(.)* it means any character can fill the place. For example: [5]

   string = c.t = {cat, cot, c t,}

3. Create a file *dummy.txt* and add the content of all the files in the current directory to *dummy*. But copy the content in such a way that if files in current directory = {f1, f2, f3, f4, ..., fn}. Then copy first *N* lines of files at even location *{f2, f4,.}* and last *N* lines of files at odd location *{f1,f3,. }*. Input value of *N* from user. [5]

4. Input a filename from user and check modified date of that file. If modified date is greater than 24 hours from the current time change the modified date to current date. Along with displaying the output on terminal, maintain a log file that contains the information of the script. Format of the log file is given below: [5]

Format of the log File

Option 01 selected at *date and time*
File name: *filename.txt*
Permissions of *filename.txt*: *Show permissions*
Permissions changed
Updated Permissions of *filename.txt*: *Show permissions*

Option 02 selected at *date and time*
Filename: *filename.txt*
String: *string*
Output all the lines in *filename* where *string* is found.

Option 03 selected at *date and time*
Files at odd location: *f1, f3, f5*
Files at even location: *f2, f4*
Dummy.txt is created and *N* lines of each file copied in it.

Option 04 selected at *date and time*
Filename: *filename.txt*
Current modified date: *date*
Modified time updated or not

Option exit
Script terminated at *date and time*.

QUESTION NO. 03 [10]

a. From your home directory, list the files in the directory */usr/share*.
b. Change to that directory, and use pwd to check that you are in the right place. List the files in the current directory again, and then list the files in the directory called *doc*.
c. Next list the files in the parent directory, and the directory above that.
d. Try the following command, and make sure you understand the result:
$ echo ~
e. Use cat to display the contents of a text file which resides in your home directory (create one if you haven't already), using the ~/ syntax to refer to it. It shouldn't matter what your current directory is when you run the command.