Assignment 1
Introduction to Software Systems – Spring 2022

Note:

1. **Deadline**: **19th April 2022, 11:55 PM** – Total Marks: **50 Marks**
2. This assignment is an individual submission
3. Below is the list of questions and their respective weightage
4. In case of any queries – please reach TAs for clarification
5. This assignment will be evaluated manual/automatically – Make sure that you submit your answer scripts in specified format below (if any)
6. **Submission Instructions:** Please ZIP all SHELL Scripts (.sh files) along with one README.txt file to include any notes for evaluators. Push these .sh files to your git repository and include the git repository link in the README.txt
7. There will be a queries thread opened in moodle for students to post queries regarding assignment questions so that TAs can answer them accordingly.

Q1: You will be provided with a file called **quotes.txt**. Perform following operations. Note: quotes.txt can be downloaded from here - https://gist.github.com/95ych/48d4cfc8d4014ec9d709bbfc5d3b2057

a. Remove empty lines. **(5 Marks)**
b. Remove duplicates. **(5 Marks)**

Q2: Using the same quotes.txt file, write a shell script or a one-line command line script which parses the **quotes.txt** and gives a file **speech.txt** as an output where each line has to be rewritten as **[author]** once said, **"[quote]". (10 Marks)**

Q3: You may read any file as input, perform following using one shell script files

a. Print the Size of the file in bytes **(1 Mark)**
b. Count total number of lines in the file **(2 Marks)**
c. Count total number of Words in the file **(2 Marks)**
d. Count words in each line and print ***Line No: <> - Count of Words: []*** **(5 Marks)**
e. Provide of the list of repeated works and number of times they are repeated. Print as ***Word: <> - Count of repetition: []*** **(5 Marks)**

Q4: Write you own logic to sort (ascending) input data only using arrays and conditional statements. Do not use any pre-defined shell sort commands. Sample Input: 21,22,34,1,7,90,101,2,4,8,45 **(10 Marks)**

Q5: Write a SHELL script which reads a string as input and do the following:

a. Print the string in reverse **(1 Marks)**
   - Example: i/p: Hello o/p: olleH
b. Now replace letters in the reverse output with subsequent letter **(2 Marks)**
   - Example: i/p: olleH o/p: pmmfI
c. Read the String as Input and print only the half string in reverse. (Assuming that the input string has even number of letters so that you can easily divide) **(2 Marks)**
   - Example: i/p: Helloo o/p: leHloo