Assignment I
Lab MC504

Send your assignment solution to mc504lab@gmail.com before 20.01.2021.
Put all files into one folder name it as <**RollNo**>_<**Assignment_<No>** and mention the files name as: Q1.c, Q2.c and so on. In each file please mention your roll number.
Subject of mail should be: **<RollNo>_Assignment_<No>. For example : 1911MC04_Assignment_I.**
You have to take inputs from user. Otherwise marks (40%) will be deducted.

Q1.

Read a positive integer value, and compute the following sequence: If the number is even, halve it; if it is odd, multiply by 3 and add 1. Repeat this process until the value is 1, printing out each value. Finally print out how many of these operations you performed. If the input value is less than 1, print a message containing the word "Error".
Typical output might be:
Initial value is 9
Next value is 28
Next value is 14
Next value is 7
Next value is 22
Next value is 11
Next value is 34
Next value is 17
Next value is 52
Next value is 26
Next value is 13
Next value is 40
Next value is 20
Next value is 10
Next value is 5
Next value is 16
Next value is 8
Next value is 4
Next value is 2
Final value 1, number of steps 19.

Q2.

Write a program in C to display the pattern like right angle triangle with a number. The pattern like :

1
12
123
1234

Q3.

Write a program in C to display the n terms of harmonic series and their sum.
Harmonic Series 1 + 1/2 + 1/3 + 1/4 + 1/5 ... 1/n terms.

Q4

Write a program in C to Check Whether a Number can be Express as Sum of Two Prime Numbers.
Test Data :
Input a positive integer: 16
Expected Output :
16 = 3 + 13
16 = 5 + 11

Q5

Write a program in C to check Armstrong number of n digits.
Test Data :
Input an integer : 1634
Expected Output :
1634 is an Armstrong number

Q6.

Write a program to read in numbers until the number -99 is encountered. The sum of all numbers read until this point should be printed out.

Q7.

Write a C program to delete all the duplicates in an integer array. Note that after deleting a duplicate all the numbers after that will be shifted one position to the left.

Q8.

Write a program to print the Fibonacci series upto 'n'.(n is input by user). The Fibonacci sequence is a series where the next term is the sum of the previous two terms. The first two terms of the Fibonacci sequence is 0 followed by 1.
Example: 0 1 1 2 3 5 8 13 ….. N

Q9.

Write a program to enter three numbers by user and print the largest and the smallest number.

Input: Enter the first number: 34
Enter the second number: 98
Enter the third number: 12

Output: The largest number is: 98
The smallest number is:12

Q10.

Write a program to design a calculator (using switch case) that takes choice from user to perform addition, subtraction, multiplication and division between two operands which are input by the user.