Algorithm Lab (Course Code: MC504)
Assignment - 1

Submission Deadline: Within class timing, (13/01/2023)

Instructions:
- Proper indentation is mandatory.
- Program files must be compiled using linux gcc compiler.
- VERY IMPORTANT: You must add comments whenever necessary, to make the code understandable.
- Markings will be based on the correctness and soundness of the outputs. Marks will be deducted in case of plagiarism.
- Take inputs from users. Make necessary assumptions if required.
- ANSWER FILE: Source code: (file name) e.g. A1_Q1.c

Q1.

Write a program in C to take three numbers from the user and print the largest and smallest number.

       INPUT: First number: 12
                   Second number: 56
                   Third number: 94.7
     OUTPUT: Largest number: 94.7
                   Smallest number: 12

Q2.

Given two numbers, write a C program to swap the given numbers.

Input : x = 10, y = 20;
Output : x = 20, y = 10

Q3.

Write a program to check whether the number is odd or even.
Input: x=31
Output: The number 31 is odd.

Q4.

Given the temperature in Fahrenheit, write a C program to display it in degree celsius. Use the standard mathematical formula for conversion of temperature.
Input: x= 208 F
Output: y= 97.7778 C

Q5.
Write a C program to display the sum of n natural numbers.
Input: x=4
Output: 1+2+3+4=10

Q6.
The Armstrong number is *a number that is equal to the sum of cubes of its digits*. Write the C program to check whether the number is Armstrong or not.
Input: x= 153
Output: Then number is Armstrong number.
Explaination: 153 = (1*1*1)+(5*5*5)+(3*3*3)

Q7.
Given a number, Write a C program to print the reverse of the number.
Input: 1234
Output: 4321

Q8.
In the Fibonacci series, *the next number is the sum of previous two numbers* for example 1, 1, 2, 3, 5, 8, 13, 21 etc. Consider the first two numbers of the fibonacci series as 1 and 1.
Write a C program to tell only the last 2 digits of the Nth number of Fibonacci series.

> **E.g. :**
> **Input:** n= 5
> **Output:** y= 5
> **Input:** n= 7
> **Output:** y= 13
> **Input:** n= 13
> **Output:** y= 33

Q9.
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.

Q10.

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.