Lab 2 - Flow Control

1. Write a C Program to check whether a number is even or odd
   sample output:

   > Enter an integer: -7
   > -7 is odd.

2. Write a C Program to Find Factorial of a Number

   - The factorial of a positive number n is given by:
     `factorial of n (n!) = 1 * 2 * 3 * 4....n`
   - Check for if the user enters a negative integer and show an error:
     `Error! Factorial of a negative number doesn't exist.`

   sample output:

   > Enter an integer: 10
   > Factorial of 10 = 3628800

3. Write a C Program to Generate Multiplication Table
   sample output:

   > Enter an integer: 9
   > 9 * 1 = 9
   > 9 * 2 = 18
   > 9 * 3 = 27
   > 9 * 4 = 36
   > 9 * 5 = 45
   > 9 * 6 = 54
   > 9 * 7 = 63
   > 9 * 8 = 72
   > 9 * 9 = 81
   > 9 * 10 = 90

4. Write a C Program to Display Fibonacci Sequence

   - The Fibonacci sequence is a sequence where the next term is the sum of the previous two terms.
     The first two terms of the Fibonacci sequence are 0 followed by 1.
     `The Fibonacci sequence: 0, 1, 1, 2, 3, 5, 8, 13, 21`

   sample output:

   > Enter the number of terms: 10
   > The Fibonacci sequence: 0, 1, 1, 2, 3, 5, 8, 13, 21

5. Write a C Program to Find GCD of two Numbers

- The HCF or GCD of two integers is the largest integer that can exactly divide both numbers (without a remainder).

sample output:

> Enter two positive integers: 81
> 153
> GCD = 9

6. Write a C Program to Find LCM of two Numbers

- The LCM of two integers n1 and n2 is the smallest positive integer that is perfectly divisible by both n1 and n2 (without a remainder). For example, the LCM of 72 and 120 is 360.

sample output:

> Enter two positive integers: 72
> 120
> The LCM of 72 and 120 is 360.

7. Write a C Program to Make a Simple Calculator

- This program takes an arithmetic operator `+, -, *, /` and two operands from the user. Then, it performs the calculation on the two operands depending upon the operator entered by the user.
- Print an error `Error! operator is not correct` in the case that the user does not input a valid arithmetic operator symbol
- Your program should take in the two operands as doubles

sample output:

> Enter an operator (+, -, *, /): *
> Enter two operands: 1.5
> 4.5
> 1.5 * 4.5 = 6.8