University of Sri Jayewardenepura, Sri Lanka

Bachelor of Information and Communication Technology
ITC1063 Fundamentals of Programming
Programming Practice 4

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1. Write a C program to find the **Greatest Common Divisor (GCD)** of **two** (02) integer numbers. The program should take two integers from the user and display the GCD.

   See the sample below.

```
Enter your two integer numbers: 8 12

The Greatest Common Divisor (GCD) of two numbers is: 4
```

   Note:

   The Greatest Common Divisor (GCD) of two or more integers is the largest positive integer that divides each of the integers.

   For example, GCD of 8 and 12 is 4

   gcd(8,12) = 4

2. Write a C program to find the **Least Common Multiple (LCM)** of **two**(2) numbers. The program should take two integers from the user and display the LCM.

   See the sample below.

```
Enter your two integer numbers: 6 10

The Least Common Multiple (LCM) of two numbers is: 30
```

   Note:

   The **Least Common Multiple** (LCM) is also referred to as the **Lowest Common Multiple** (LCM) and **Least Common Divisor** (LCD).

For two integers a and b, denoted LCM(a,b), the LCM is the smallest positive integer that is evenly divisible by both a and b.

For example,

LCM(2,3) = 6

LCM(6,10) = 30

3. Write a C program to display the **Fibonacci sequence** of **up to a given number** which is taken from the user.

   See the sample below.

```
Enter an integer number: 6

The Fibonacci sequence of first 6 numbers is
```

Note:

In mathematics, the **Fibonacci numbers**, commonly denoted F_n, form a sequence, the **Fibonacci sequence**, in which **each number is the sum of the two preceding ones**. The sequence commonly starts from 0 and 1

For example,

0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144,…

0 + 1 = 1
1 + 1 = 2
1 + 2 = 3
2 + 3 = 5