Task - 2

1. Write a program to generate and print the first N terms of the Fibonacci series.

   Sample Input

   Enter a value of n: 5

   Sample Output

   0 1 1 2 3 5

2. Write a program to print the LCM of two numbers.

   Sample Input

   Enter value of a: 2
   Enter value of b: 4

   Sample Output

   LCM of 2 and 4 = 4

3. Write a program to print the HCF or GCD of two numbers.

Sample Input

Enter value of a: 2
Enter value of b: 4

Sample Output

GCD of 2 and 4 = 2

4. A hailstone sequence is generated by the following process:

   - Start with any positive integer n.
   - If n is even, divide it by 2 to get n / 2.
   - If n is odd, multiply it by 3 and add 1 to obtain 3n + 1.
   - Repeat the process indefinitely, stopping when n reaches 1.

   Write a program that takes a positive integer n as input and print the hailstone sequence starting from n and ending at 1.

Sample Input

Enter a value of n : 7

Sample Output

7 22 11 34 17 52 26 13 40 20 10 5 16 8 4 2

5. Simple Menu-Based Program

Write a Java program that presents a simple menu to the user with the following options:

- Check if a number is even or odd.
- Check if a number is prime.
- Calculate the factorial of a number.
- Exit the program.

The program should prompt the user to enter their choice (1-4) and then perform the corresponding operation. Use a switch statement to handle the user's choice.

Sample Input

Menu:

- Check if a number is even or odd.
- Check if a number is prime.
- Calculate the factorial of a number.
- Exit the program.

Enter your choice: 2
Enter the number: 11

Sample Output

11 is a prime number.