

LAB SHEET 02

Fundamentals of Programming

Your Registration Number: KEG/IT/2022/F/0035

Activity 1: Write a sample program that can print multiplication table using for loop

```
public class
{
public static void main (String args[])
{
Scanner x =new Scanner(System.in);
System.out.print("Enter number");
int num= x.nextInt ();

for(int i=1; i<=10; i++)
{
System.out.println( num + "*" + i + "=" + num*i )
}
}
}
```

Activity 2: Write a sample program to calculate Factorial of a given number using for loop

```
import java.util.Scanner;
public class
{
public static void main (String args[])
{
int i,fact=1;
int number=5;
for (i=1; i<=number; i++)
{
fact=fact*i;
}
System.out.println( "Factorial of" + number + "is" + fact );
}
}
```

Activity 3: Write a program that calculates the sum of all numbers up to a given number using while loop.

```
import java.util.Scanner;

public class
{
    public static void main (String args[])
    {
        int i, num=10, sum=0;
        for(i=1; i<=num; ++i)
        {
            sum=sum + i;
        }

        System.out.println( sum );
    }
}
```

Activity 4: Write a Java program that calculates the sum of all even numbers from 1 to a given number using a do-while loop.

```
import java.util.Scanner;

public class
{
    public static void main (String args[])
    {
        int number=10;

        System.out.println( List of even number from 1 to + number + “ : ” );

        For(int i=1; i<=number; i++ )
        {
            If(i%2==0)
            {
                System.out.println(i+ “ “);
            }
        }
    }
}
```

Activity 5: Write a program that does the following (Guessing game).

The program should generate a random number between 1 and 20.

The user can guess and input the number that generated by the program

After each guess, the program should inform the user whether the guessed number is higher or lower than the actual number.

The game should continue until the user correctly guesses the number.

Once the correct number is guessed, the program should display the number of attempts made by the user.

```
import java.util.Random;
import java.util.Scanner;

public class GuessingGame {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        Random random = new Random();
        int randomNumber = random.nextInt(20) + 1;
        int attempts = 0;
        int guess;

        System.out.println("Welcome to the Guessing Game!");
        System.out.println("Try to guess the number between 1 and 20.");

        do {
            System.out.print("Enter your guess: ");
            guess = scanner.nextInt();
            attempts++;

            if (guess < randomNumber) {
                System.out.println("Your guess is lower than the actual number.");
            } else if (guess > randomNumber) {
                System.out.println("Your guess is higher than the actual number.");
            } else {
                System.out.println("Congratulations! You guessed the correct number.");
                System.out.println("Number of attempts: " + attempts);
            }
        } while (guess != randomNumber);

        scanner.close();
    }
}
```