Assignment No- 1

1)Write a program that takes a numerical grade as input and outputs the corresponding letter grade using if-else statements

```java
import java.util.Scanner;

class Grade{

    public static void main(String[]args){

        Scanner sc = new Scanner(System.in);
        System.out.println("Enter Marks:");

        int marks = sc.nextInt();
        if(marks>75){
        System.out.println("Grade A");
        }
        else if(marks<=75 && marks>60)
        {
            System.out.println("Grade B");
        }
        else if(marks<=60 && marks>35)
        {
            System.out.println("Grade C");
        }
        else
        System.out.println("fail");
        }
}
```

2)Write a program that checks if a given year is a leap year or not using both if-else and switch-case.

```java
import java.util.Scanner;
public class leapyear {

    public static void main(String[] args)
     {
         Scanner sc = new Scanner(System.in);
         System.out.println("Enter Year :");
         int Year= sc.nextInt();
         if (Year%4==0){
             System.out.println("Leap year");
         }
         else
         {
             System.out.println("Regular year");
         }

     }

}
```

3)Implement a simple calculator program that takes two numbers and an operator (+, -, *, /) as

```java
import java.util.Scanner;

public class calculator {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter first number: ");
        double num1 = scanner.nextDouble();
```

```java
        System.out.print("Enter operator (+, -, *, /): ");
        char operator = scanner.next().charAt(0);

        System.out.print("Enter second number: ");
        double num2 = scanner.nextDouble();

        double result = 0;

        switch (operator) {
            case '+':
                result = num1 + num2;
                break;
            case '-':
                result = num1 - num2;
                break;
            case '*':
                result = num1 * num2;
                break;
            case '/':
                if (num2 != 0)
                    result = num1 / num2;
                else
                    System.out.println("Error! Division by zero.");
                break;
            default:
                System.out.println("Invalid operator");
        }

        System.out.println("Result: " + result);
    }
}
```

Write a program that takes a number representing a weekday (1-7) and prints the name of the weekday using switch-case.

```java
import java.util.Scanner;

public class weekdays {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter a number (1-7): ");
        int dayNumber = scanner.nextInt();

        String dayName;

        switch (dayNumber) {
            case 1:
                dayName = "Sunday";
                break;
            case 2:
                dayName = "Monday";
                break;
            case 3:
                dayName = "Tuesday";
                break;
            case 4:
                dayName = "Wednesday";
                break;
            case 5:
                dayName = "Thursday";
                break;
            case 6:
                dayName = "Friday";
                break;
            case 7:
                dayName = "Saturday";
```

```
                break;
            default:
                dayName = "Invalid day number";
                break;
        }

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

5)Write a program that takes a character as input and determines whether it's a vowel or a consonant using if-else.

```java
import java.util.Scanner;
        character char =
Character.toLowerCase(character);

        // Check if the input is a single
characteimport java.util.Scanner;

public class Que5 {
    /**
     * @param args
     */
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        // Take input from the user
        System.out.print("Enter a character: ");
        char character = scanner.next().charAt(0);
        if (Character.isLetter(character)) {
            // Check if the input is a vowel
```

```
            if (character == 'a' || character == 'e'
|| character == 'i' || character == 'o' || character
== 'u') {
                System.out.println(character + " is a
vowel.");
            }
            // Check if the input is a consonant
            else {
                System.out.println(character + " is a
consonant.");
            }
        } else {
            System.out.println("Invalid input: Not a
letter.");
        }

        scanner.close();
    }
}
```

6)Implement a program that calculates the Body Mass Index (BMI) based on height and weight

input using if-else to classify the BMI int categories

```
import java.util.Scanner;

public class BMI {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter your weight in
kilograms: ");
        double weight = scanner.nextDouble();
```

```java
        System.out.print("Enter your height in meters: ");
        double height = scanner.nextDouble();

        double bmi = calculateBMI(weight, height);

        System.out.println("Your BMI is: " + bmi);
        classifyBMI(bmi);
    }

    public static double calculateBMI(double weight, double height) {
        return weight / (height * height);
    }

    public static void classifyBMI(double bmi) {
        if (bmi < 18.5) {
            System.out.println("You are underweight.");
        } else if (bmi >= 18.5 && bmi < 25) {
            System.out.println("You have a normal weight.");
        } else if (bmi >= 25 && bmi < 30) {
            System.out.println("You are overweight.");
        } else {
            System.out.println("You are obese.");
        }
    }
}
```