CDAC Mumbai PG-DAC

MARCH 24 Assignment No-1

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

```
import java.util.Scanner;
public class GradeCalculator
{
  public static void main(String[] args)
  {
    int  score;
    char grade;
    Scanner console = new Scanner(System.in);
    System.out.print("Enter your numeric test score : ");
    score = console.nextInt();
    if (score >= 90)
    {
      grade = '+A';
    }
    else if (score >= 80)
    {
      grade = 'A';
    }
    else if (score >= 70)
    {
      grade = 'B';
    }
    else if (score >= 50)
    {
      grade = 'D';
    }
```

```
    else
    {
      grade = 'F';
    }
    System.out.println("Your grade is " + grade);
  }
}
```

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

```
import java.util.Scanner;
public class Exercise{
  public static void main(String[] args)
   {
      Scanner in = new Scanner(System.in);
      int year = in.nextInt();
      if (year % 4 == 0) {
        if (year % 100 == 0)
        {
      if (year % 400 == 0)
        System.out.println("Leap Year");
      else
        System.out.println("not Leap year");
       }
      else
      System.out.println("not Leap Year");
      }
```

```
    }
}
```

3)Implement a simple calculator program that takes two numbers and an operator (+, -, *, /) as input and performs the operation using switch-case.

```
import java.util.Scanner;
class Main {
  public static void main(String[] args) {
    char operator;
    Double number1, number2, result;
    Scanner input = new Scanner(System.in);
    System.out.println("Choose an operator: +, -, *, or /");
    operator = input.next().charAt(0);
    System.out.println("Enter first number");
    number1 = input.nextDouble();
    System.out.println("Enter second number");
    number2 = input.nextDouble();

    switch (operator) {
      case '+':
        result = number1 + number2;
        System.out.println(number1 + " + " + number2 + " = " + result);
        break;
      case '-':
        result = number1 - number2;
        System.out.println(number1 + " - " + number2 + " = " + result);
        break;
      case '*':
        result = number1 * number2;
        System.out.println(number1 + " * " + number2 + " = " + result);
```

```
      break;
    case '/':
      result = number1 / number2;
      System.out.println(number1 + " / " + number2 + " = " + result);
      break;
    default:
      System.out.println("Invalid operator!");
      break;
  }
  input.close();
 }
}
```

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

```
import java.util.Scanner;
public class Exercise5 {
 public static void main(String[] args)
  {
     Scanner in = new Scanner(System.in);
     System.out.print("Input number: ");
     int day = in.nextInt();
     System.out.println(getDayName(day));
  }
  public static String getDayName(int day) {
     String dayName = "";
     switch (day) {
        case 1: dayName = "Monday"; break;
        case 2: dayName = "Tuesday"; break;
```

```
        case 3: dayName = "Wednesday"; break;
        case 4: dayName = "Thursday"; break;
        case 5: dayName = "Friday"; break;
        case 6: dayName = "Saturday"; break;
        case 7: dayName = "Sunday"; break;
        default:dayName = "Invalid day range";
      }
      return dayName;
   }
}
```

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

```
import java.util.Scanner;
class Vowel_Consonant
{
  public static void main(String[] args)
        {Scanner input = new Scanner(System.in);
                System.out.print("Enter the Character :");
                char ch = input.next().charAt(0);
        if(ch=='a'||ch=='e'||ch=='i'||ch=='o'||ch=='u'||ch=='A'||ch=='E'||ch=='I'||ch=='O'||ch=='U')
                {
                        System.out.println("This is a Vowel");
                }
                else
                {
                        System.out.println("This is a Consonant");
                }
        }
```

```
}
```

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 (underweight, normal weight, overweight, etc.).

```
import java.util.Scanner;

public class BodyMassIndex {

   public static void main(String[] Strings) {

      Scanner input = new Scanner(System.in);

      System.out.print("Input weight in pounds: ");

      double weight = input.nextDouble();

      System.out.print("Input height in inches: ");

      double inches = input.nextDouble();

      double BMI = weight * 0.45359237 / (inches * 0.0254 * inches * 0.0254);

      System.out.print("Body Mass Index is " + BMI+"\n");

   }

}
```