

OOPJ Assignment 2

1. 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.*;

class Ques1{
    public static void main(String[] args){
        Scanner sc = new Scanner(System.in);
        int yr = sc.nextInt();

        if(yr%100 ==0){
            if(yr%400==0){
                System.out.println("Leap Year");
            }else{
                System.out.println("Not a Leap Year");
            }
        }else {
            if(yr%4==0){
                System.out.println("Leap Year");
            }else{
                System.out.println("Not a Leap Year");
            }
        }
    }
}
```

```
C:\Users\reddy\Desktop\CDAC Labs\OOPJ Module\Assignment 2\Java Programs>java Ques1
2024
Leap Year

C:\Users\reddy\Desktop\CDAC Labs\OOPJ Module\Assignment 2\Java Programs>java Ques1
2022
Not a Leap Year
```

2. Implement a program that calculates the Body Mass Index (BMI) based on height and weight input using if-else to classify the BMI into categories (underweight, normal weight, overweight, etc).

```
import java.util.*;

class Ques2{
    public static void main(String[] args){
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter Weight in kg: ");
        double weight = sc.nextDouble();
        System.out.println("Enter Height in m: ");
        double height = sc.nextDouble();
        double bmi = weight/(height*height);

        if(bmi >30.0){
            System.out.println("Obese");
        }
        else if(bmi >25.0) {
            System.out.println("Overweight");
        }
        else if(bmi >18.5) {
            System.out.println("Healthy Weight");
        }
        else if(bmi >0) {
            System.out.println("UnderWeight");
        }
        else{
            System.out.println("Enter Valid Details");
        }
    }
}
```

```

    }
}

```

```

C:\Users\reddy\Desktop\CDAC Labs\OOPJ Module\Assignment 2\Java Programs>java Ques2
Enter Weight in kg:
96
Enter Height in m:
1.75
Obese

C:\Users\reddy\Desktop\CDAC Labs\OOPJ Module\Assignment 2\Java Programs>java Ques2
Enter Weight in kg:
45.5
Enter Height in m:
1.77
UnderWeight

C:\Users\reddy\Desktop\CDAC Labs\OOPJ Module\Assignment 2\Java Programs>java Ques2
Enter Weight in kg:
70.0
Enter Height in m:
1.75
Healthy Weight

C:\Users\reddy\Desktop\CDAC Labs\OOPJ Module\Assignment 2\Java Programs>

```

3. Write a program that checks if a person is eligible to vote based on their age.

```

import java.util.*;

class Ques3{
    public static void main(String[] args){
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter age: ");
        int age = sc.nextInt();

        if(age >= 18){
            System.out.println("Eligible for voting");
        }
        else if(age>0 && age<18) {
            System.out.println("Not Eligible for voting");
        }
    }
}

```

```

    }
    else{
        System.out.println("Enter Valid Details");
    }
}
}

```

```

C:\Users\reddy\Desktop\CDAC Labs\OOPJ Module\Assignment 2\Java Programs>java Ques3
Enter age:
28
Eligible for voting

C:\Users\reddy\Desktop\CDAC Labs\OOPJ Module\Assignment 2\Java Programs>java Ques3
Enter age:
5
Not Eligible for voting

C:\Users\reddy\Desktop\CDAC Labs\OOPJ Module\Assignment 2\Java Programs>

```

4. Write a program that takes a month (1-12) and prints the corresponding season (Winter, Spring, Summer, Autumn) using a switch case

```

import java.util.*;

class Ques4{
    public static void main(String[] args){
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter month number: ");
        int month = sc.nextInt();

        switch(month){
            case 1:
                System.out.println("Winter");
                break;
            case 2:
                System.out.println("Winter");
                break;

```

```
        case 3:
            System.out.println("Spring");
            break;
        case 4:
            System.out.println("Spring");
            break;
        case 5:
            System.out.println("Spring");
            break;
        case 6:
            System.out.println("Summer");
            break;
        case 7:
            System.out.println("Summer");
            break;
        case 8:
            System.out.println("Summer");
            break;
        case 9:
            System.out.println("Autumn");
            break;
        case 10:
            System.out.println("Autumn");
            break;
        case 11:
            System.out.println("Autumn");
            break;
        case 12:
            System.out.println("Winter");
            break;
        default:
            System.out.println("Enter valid month");
    }
}
```

```

C:\Users\reddy\Desktop\CDAC Labs\OOPJ Module\Assignment 2\Java Programs>java Ques4
Enter month number:
5
Spring

C:\Users\reddy\Desktop\CDAC Labs\OOPJ Module\Assignment 2\Java Programs>java Ques4
Enter month number:
10
Autumn

```

5. Write a program that allows the user to select a shape (Circle, Square, Rectangle, Triangle) and then calculates the area based on user-provided dimensions using a switch case.

```

import java.util.*;

class Ques5{
    public static void main(String[] args){
        Scanner sc = new Scanner(System.in);
        System.out.println("Select the element for which you want to calculate area\n");
        System.out.println("For circle: 1, For Square: 2, For Rectangle: 3, For Triangle: 4\n");
        System.out.println("Enter Option: ");
        int option = sc.nextInt();
        double area = 0;

        switch(option){
            case 1:
                System.out.println("Enter Radius: ");
                double r = sc.nextDouble();
                area = 3.14 * (r*r);
                System.out.println("Area of circle is: "+ area);
                break;
            case 2:
                System.out.println("Enter Side length: ");
                r = sc.nextDouble();

```

```

        area = r*r;
        System.out.println("Area of square is: "+
area);
        break;
    case 3:
        System.out.println("Enter length: ");
        double l = sc.nextDouble();
        System.out.println("Enter breadth: ");
        double b = sc.nextDouble();
        area = l*b;
        System.out.println("Area of rectangle is:
"+ area);
        break;
    case 4:
        System.out.println("Enter base length: ");
        l = sc.nextDouble();
        System.out.println("Enter height: ");
        b = sc.nextDouble();
        area = 0.5*(l*b);
        System.out.println("Area of triangle is:
"+ area);
        break;
    default:
        System.out.println("Enter valid month");
    }
}
}
}

```

```
C:\Users\reddy\Desktop\CDAC Labs\OOPJ Module\Assignment 2\Java Programs>javac Ques5.java

C:\Users\reddy\Desktop\CDAC Labs\OOPJ Module\Assignment 2\Java Programs>java Ques5
Select the element for which you want to calculate area

For circle: 1, For Square: 2, For Rectangle: 3, For Triangle: 4

Enter Option:
1
Enter Radius:
5
Area of circle is: 78.5

C:\Users\reddy\Desktop\CDAC Labs\OOPJ Module\Assignment 2\Java Programs>javac Ques5.java

C:\Users\reddy\Desktop\CDAC Labs\OOPJ Module\Assignment 2\Java Programs>java Ques5
Select the element for which you want to calculate area

For circle: 1, For Square: 2, For Rectangle: 3, For Triangle: 4

Enter Option:
4
Enter base length:
2
Enter height:
1
Area of triangle is: 1.0
```