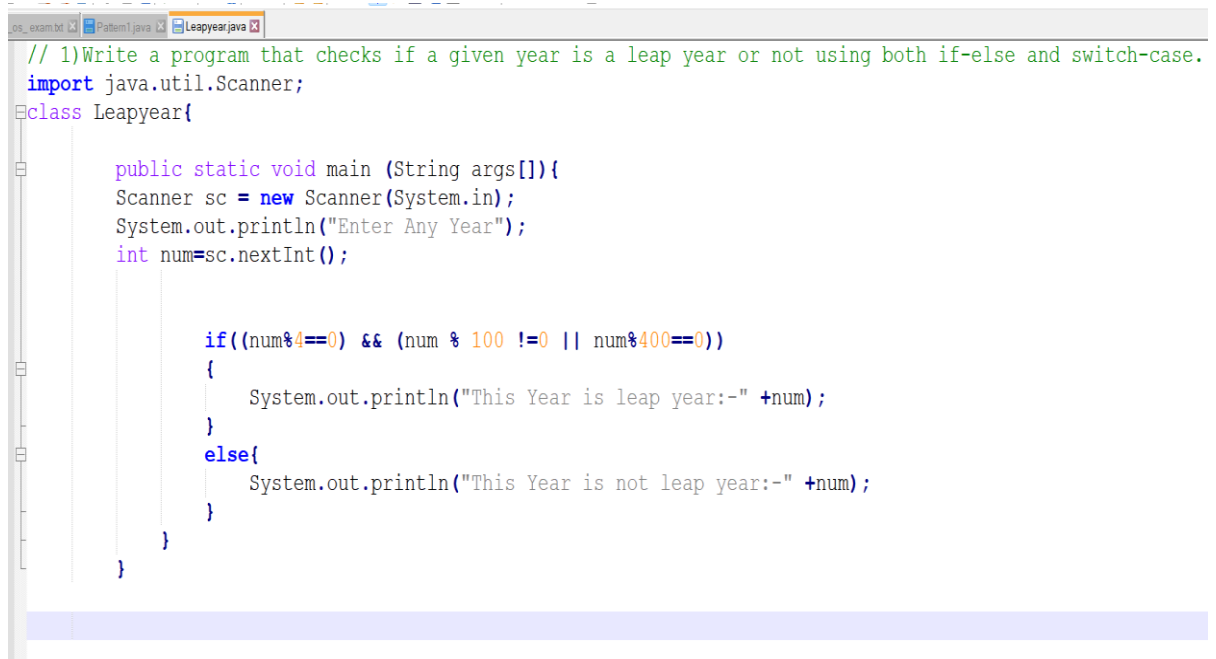


CDAC Mumbai PG-DAC AUGUST 24

Assignment No- 2

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

Using if-else:--



```
// 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.Scanner;
class Leapyear{

    public static void main (String args[]){
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter Any Year");
        int num=sc.nextInt();

        if((num%4==0) && (num % 100 !=0 || num%400==0))
        {
            System.out.println("This Year is leap year:-" +num);
        }
        else{
            System.out.println("This Year is not leap year:-" +num);
        }
    }
}
```

```

C:\OOPJ_Assignment>java Leapyear
Enter Any Year
1900
This Year is not leap year:-1900

C:\OOPJ_Assignment>java Leapyear
Enter Any Year
1880
This Year is leap year:-1880

C:\OOPJ_Assignment>java Leapyear
Enter Any Year
1972
This Year is leap year:-1972

C:\OOPJ_Assignment>java Leapyear
Enter Any Year
1904
This Year is leap year:-1904

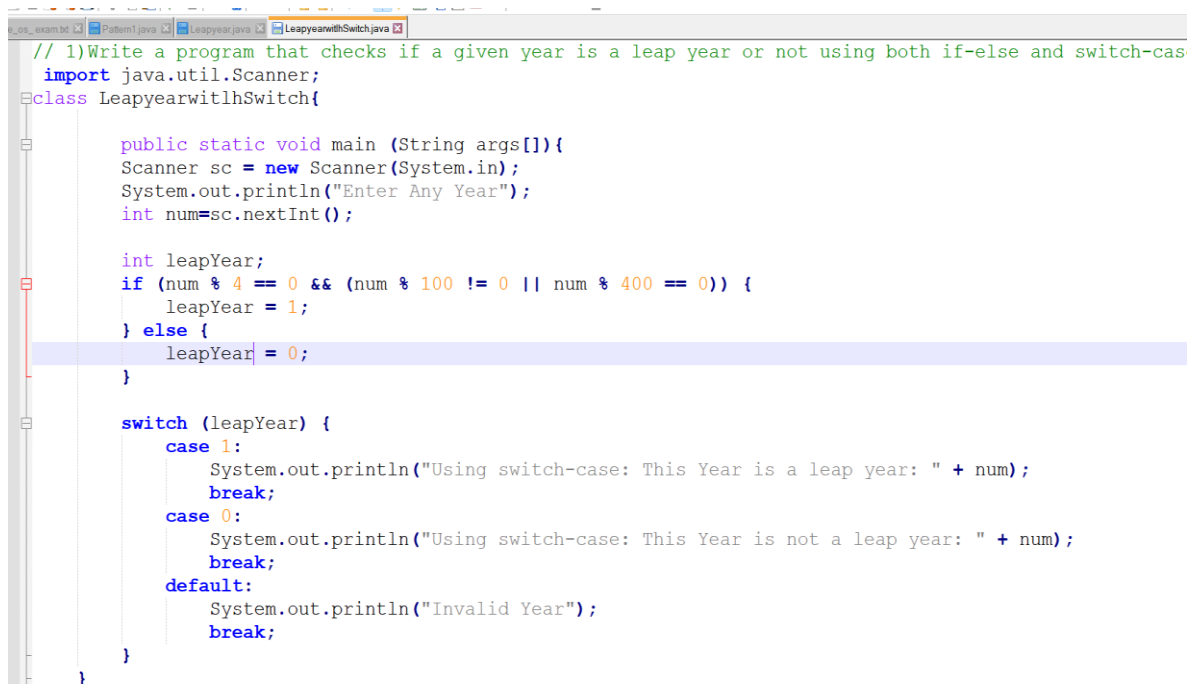
C:\OOPJ_Assignment>java Leapyear
Enter Any Year
1996
This Year is leap year:-1996

C:\OOPJ_Assignment>java Leapyear
Enter Any Year
1906
This Year is not leap year:-1906

C:\OOPJ_Assignment>

```

Using Switch :--



```

// 1)Write a program that checks if a given year is a leap year or not using both if-else and switch-cas
import java.util.Scanner;
class LeapyearwithSwitch{

    public static void main (String args[]){
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter Any Year");
        int num=sc.nextInt();

        int leapYear;
        if (num % 4 == 0 && (num % 100 != 0 || num % 400 == 0)) {
            leapYear = 1;
        } else {
            leapYear = 0;
        }

        switch (leapYear) {
            case 1:
                System.out.println("Using switch-case: This Year is a leap year: " + num);
                break;
            case 0:
                System.out.println("Using switch-case: This Year is not a leap year: " + num);
                break;
            default:
                System.out.println("Invalid Year");
                break;
        }
    }
}

```

```

C:\OOPJ_Assignment>java LeapyearwitlhSwitch
Enter Any Year
3456
Using switch-case: This Year is a leap year: 3456

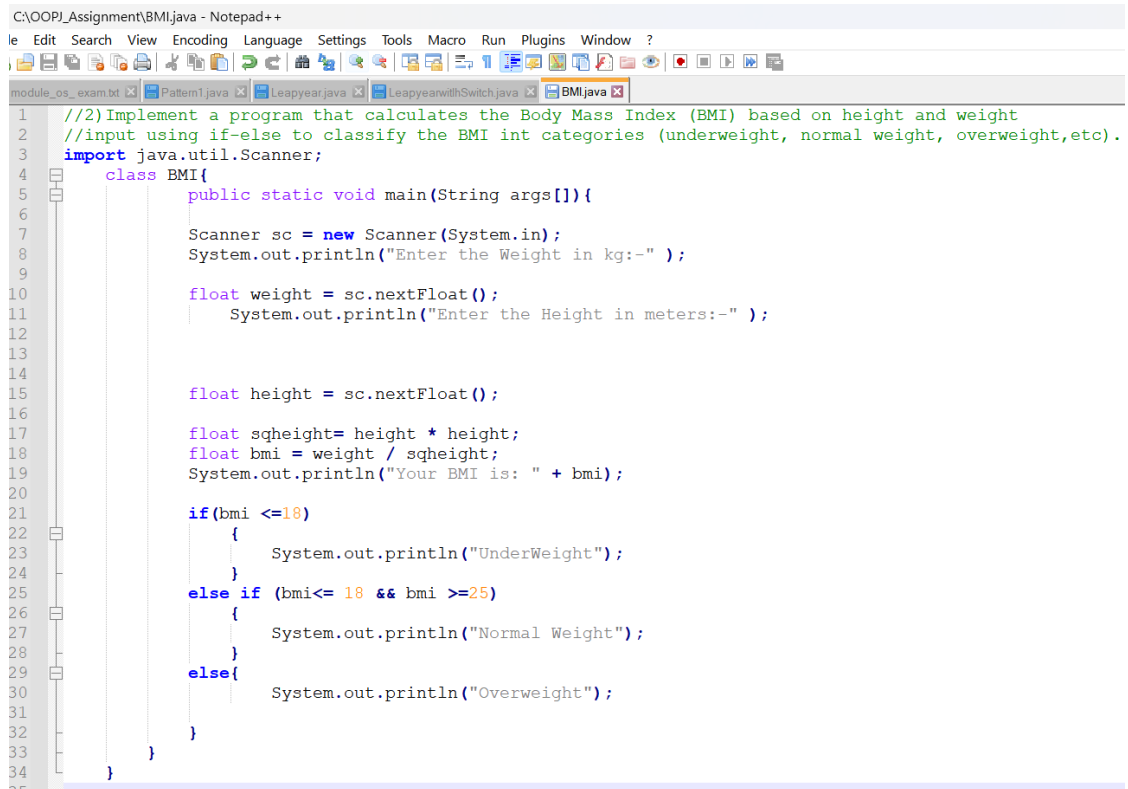
C:\OOPJ_Assignment>java LeapyearwitlhSwitch
Enter Any Year
1880
Using switch-case: This Year is a leap year: 1880

C:\OOPJ_Assignment>java LeapyearwitlhSwitch
Enter Any Year
1297
Using switch-case: This Year is not a leap year: 1297

C:\OOPJ_Assignment>|

```

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).



```

C:\OOPJ_Assignment\BMJ.java - Notepad++
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window ?
module_os_exam.txt Patern1.java Leapyear.java LeapyearwithSwitch.java BMJ.java
1 //2) Implement a program that calculates the Body Mass Index (BMI) based on height and weight
2 //input using if-else to classify the BMI into categories (underweight, normal weight, overweight, etc).
3 import java.util.Scanner;
4 class BMI{
5     public static void main(String args[]){
6
7         Scanner sc = new Scanner(System.in);
8         System.out.println("Enter the Weight in kg:-" );
9
10        float weight = sc.nextFloat();
11        System.out.println("Enter the Height in meters:-" );
12
13
14
15        float height = sc.nextFloat();
16
17        float sqheight= height * height;
18        float bmi = weight / sqheight;
19        System.out.println("Your BMI is: " + bmi);
20
21        if(bmi <=18)
22        {
23            System.out.println("UnderWeight");
24        }
25        else if (bmi<= 18 && bmi >=25)
26        {
27            System.out.println("Normal Weight");
28        }
29        else{
30            System.out.println("Overweight");
31        }
32    }
33 }
34
35

```

UnderWeight

```
C:\OOPJ_Assignment>javac BMI.java
```

```
C:\OOPJ_Assignment>java BMI
```

Enter the Weight in kg:-

77

Enter the Height in meters:-

1.76

Your BMI is: 24.857954

Overweight

```
C:\OOPJ_Assignment>java BMI
```

Enter the Weight in kg:-

76

Enter the Height in meters:-

1.56

Your BMI is: 31.229458

Overweight

```
C:\OOPJ_Assignment>|
```

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

```
// 3)Write a program that checks if a person is eligible to vote based on their age.
import java.util.Scanner;

class Vote{
    public static void main(String args[]){
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter the age :--");
        int age = sc.nextInt();
        if(age >= 18)
        {
            System.out.println("Congratulation! Eligible For Vote. ");
        }
        else
        {
            System.out.println(" Not Eligible For Vote. ");
        }
    }
}
```

```

C:\00PJ_Assignment>javac Vote.java

C:\00PJ_Assignment>java Vote
Enter the age :--
45
Congratualation! Eligible For Vote.

C:\00PJ_Assignment>java Vote
Enter the age :--
3
Not Eligible For Vote.

C:\00PJ_Assignment>java Vote
Enter the age :--
90
Congratualation! Eligible For Vote.

C:\00PJ_Assignment>java Vote
Enter the age :--
12
Not Eligible For Vote.

C:\00PJ_Assignment>

```

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

```

module_os_exam1 [x] Pattern.java [x] BM.java [x] Vote.java [x] Season.java [x]
1 //4)Write a program that takes a month (1-12) and prints the corresponding season (Winter, Spring, Summer, Autumn) using a switch case.
2 import java.util.Scanner;
3 class Season{
4     public static void main(String args[]){
5         Scanner sc = new Scanner(System.in);
6         System.out.println("Enter any month");
7         int seasonn = sc.nextInt();
8         switch(seasonn)
9         {
10             case 1:
11             case 2:
12             case 3:
13             {
14                 System.out.println("Autumn");
15             }
16             break;
17             case 4:
18             case 5:
19             case 6:
20             {
21                 System.out.println("Summer");
22             }
23             break;
24             case 7:
25             case 8:
26             case 9:
27             {
28                 System.out.println("Spring");
29             }
30             break;
31             case 10:
32             case 11:
33             case 12:
34             {
35                 System.out.println("Winter");
36             }
37             break;
38             default:
39             {
40                 System.out.println("Invalid Season");
41             }
42         }
43     }
44 }

```

```
C:\00PJ_Assignment>java Season
Enter any month
10
Winter

C:\00PJ_Assignment>java Season
Enter any month
99
Invalid Season

C:\00PJ_Assignment>java Season
Enter any month
7
Spring

C:\00PJ_Assignment>java Season
Enter any month
3
Autumn

C:\00PJ_Assignment>java Season
Enter any month
9
Spring
```

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.

```
dule_os_exam.txt Season.java Shape.java
//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.Scanner;

class Shape{
    public static void main(String args[]){
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter any shape:--");
        String sshape = sc.nextLine();
        switch(sshape){
            case "Circle":{
                System.out.println("Enter the value of Radius:--");
                double rad = sc.nextDouble();
                double ppi = 3.14;
                double area = ppi*(rad*rad);
                System.out.println("Area of Circle is : -- " + area);
            }
            break;
            case "Rectangle":
            {
                System.out.println("Enter the value of length of rectangle:--");
                double length = sc.nextDouble();
                System.out.println("Enter the value of width of rectangle:--");
                double width = sc.nextDouble();
                double area = length*width;
                System.out.println("Area of Rectangle is : -- " + area);
            }
            break;
            case "Square":
            {
                System.out.println("Enter the value of side:--");
                double side = sc.nextDouble();
                double area = side*side;
                System.out.println("Area of Square is : -- " + area);
            }
            break;
            case "Triangle":
            {
                System.out.println("Enter the value of height:--");
                double height = sc.nextDouble();
                System.out.println("Enter the value of base:--");
                double base = sc.nextDouble();
                double area = (base*height)/2;
                System.out.println("Area of Square is : -- " + area);
            }
        }
    }
}
```

```
C:\Windows\System32\cmd.exe
Rectangle
Enter the value of length of rectangle:--
4
Enter the value of width of rectangle:--
5
Area of Rectangle is : -- 20.0

C:\OOPJ_Assignment>java Shape
Enter any shape:-
Tringle

C:\OOPJ_Assignment>java Shape
Enter any shape:-
Square
Enter the value of side:--
6
Area of Square is : -- 36.0

C:\OOPJ_Assignment>java Shape
Enter any shape:-
Trianlge

C:\OOPJ_Assignment>java Shape
Enter any shape:-
Triangle
Enter the value of height:--
5
Enter the value of base:--
4
Area of Square is : -- 10.0

C:\OOPJ_Assignment>
```