

## CDAC Mumbai PG-DAC AUGUST 24 Assignment No- 2

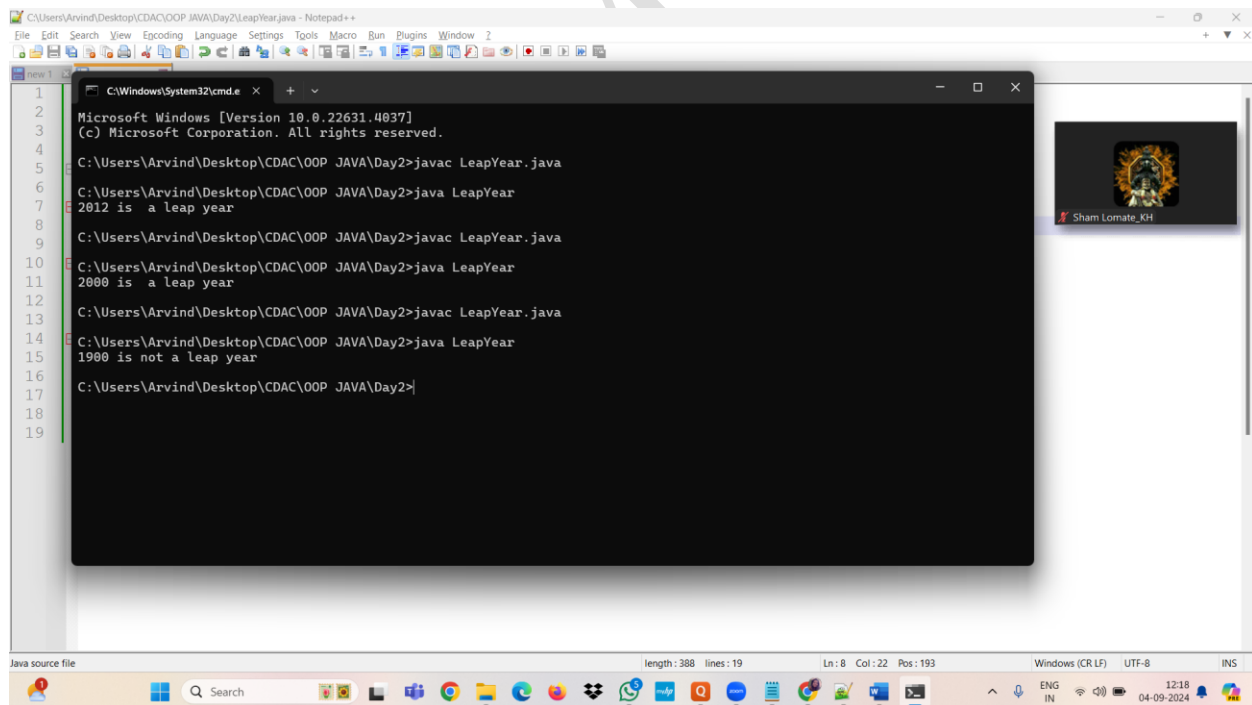
1) Write a program that checks if a given year is a leap year or not using both if-else and switch-case.

Code:

IF-ELSE

class LeapYear

```
{  
    public static void main(String[] args)  
    {  
        int year = 1900;  
        if(year%4==0 && year%400==0 || year%100 !=0)  
        {  
            System.out.println(year + " is a leap year");  
        }  
        else  
        {  
            System.out.println(year + " is not a leap year");  
        }  
    }  
}
```



The screenshot shows a Windows desktop environment. In the background, a Notepad++ window is open, displaying the Java code for the LeapYear class. In the foreground, a Command Prompt window is open, showing the execution of the Java program. The Command Prompt window displays the following output:

```
Microsoft Windows [Version 10.0.22631.4037]  
(c) Microsoft Corporation. All rights reserved.  
  
C:\Users\Arvind\Desktop\CDAC\OOP JAVA\Day2>javac LeapYear.java  
C:\Users\Arvind\Desktop\CDAC\OOP JAVA\Day2>java LeapYear  
2012 is a leap year  
C:\Users\Arvind\Desktop\CDAC\OOP JAVA\Day2>javac LeapYear.java  
C:\Users\Arvind\Desktop\CDAC\OOP JAVA\Day2>java LeapYear  
2000 is a leap year  
C:\Users\Arvind\Desktop\CDAC\OOP JAVA\Day2>javac LeapYear.java  
C:\Users\Arvind\Desktop\CDAC\OOP JAVA\Day2>java LeapYear  
1900 is not a leap year  
C:\Users\Arvind\Desktop\CDAC\OOP JAVA\Day2>
```

SWITCH case

Code:

```
class LeapYear
```

```
{
```

```
    public static void main(String[] args)
```

```
    {
```

```
        int year = 2012;
```

```
        switch(year%4)
```

```
        {
```

```
            case 0:
```

```
                switch(year%400)
```

```
                {
```

```
                    case 0:
```

```
                        System.out.println("leap year");
```

```
                    break;
```

```
                    default:
```

```
                        switch(year%100)
```

```
                        {
```

```
                            case 0:
```

```
                                System.out.println("not leap year");
```

```
                            break;
```

```
                            default:
```

```
                                System.out.println("");
```

```
                        }
```

```
                }
```

```
                System.out.println("leap year");
```

```
                break;
```

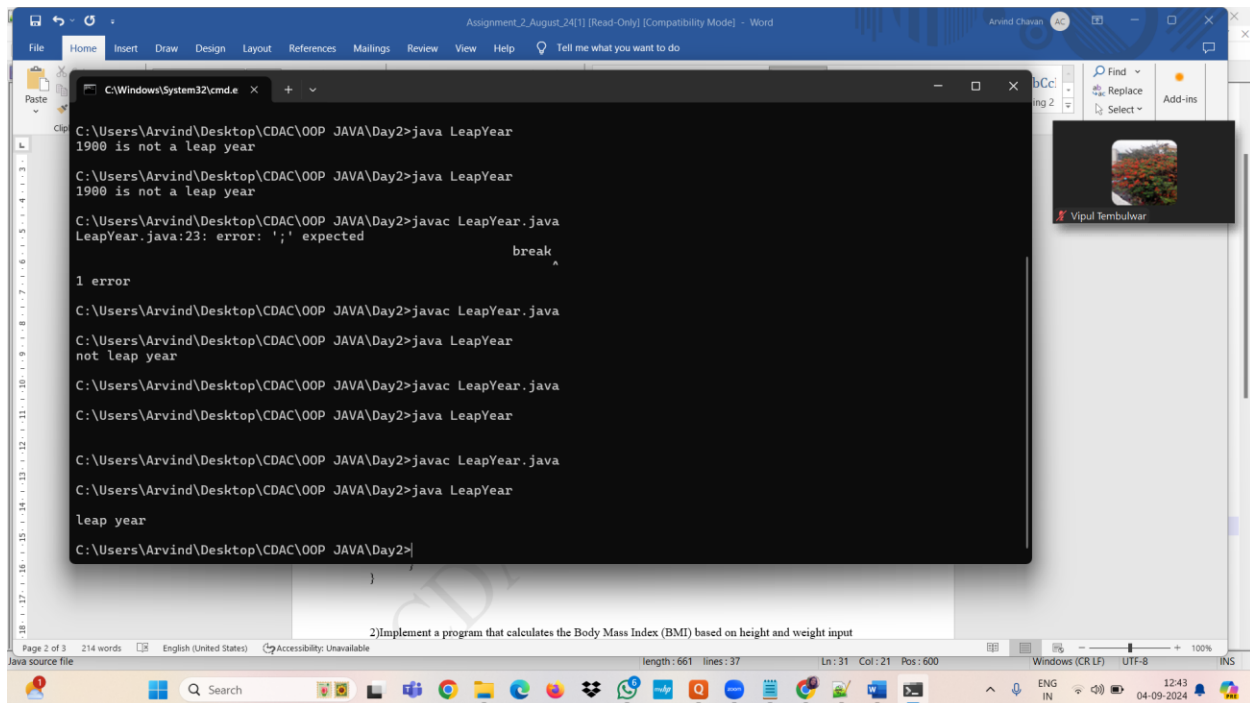
```
                default:
```

```
                    System.out.println("not 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).

Code:

```
// how to calculate BMI
// weight / height^2 = BMI
// 16.0 - 18.5 underweight
// 18.5 - 24.9 normal
// 25.0 - 29.9 overweight
```

```
class BmiCal
{
    public static void main(String[] args)
    {
        float weight = 75.8f;
        float height = 1.59f;
        float heightsq = height * height;
        float bmi = weight / heightsq;
        if (bmi >= 16.0f && bmi <= 18.0f)
        {
            System.out.println("underweight");
        }
        else if (bmi >= 18.5f && bmi <= 24.9f)
        {
            System.out.println("normal weight");
        }
        else if (bmi >= 25.0f && bmi <= 29.9f)
        {
            System.out.println("overweight");
        }
    }
}
```

```

    {
        System.out.println("over weight");
    }
    else
    {
        System.out.println("obeseity is detected do excersise");
    }
}
}

```

The screenshot shows a Notepad++ window with two files open: LeapYear.java and BmiCal.java. The LeapYear.java file contains a Java program that checks if a year is a leap year. The BmiCal.java file contains a Java program that calculates BMI and prints a message based on the weight. A Windows Command Prompt window is open, showing the execution of these programs. The output of the javac and java commands for both files is displayed. The Command Prompt window also shows a video call interface with a participant named Shrutika Yadav.

```

C:\Users\Arvind\Desktop\CDAC\OOP JAVA\Day2\BmiCal.java - Notepad++
File Edit Search View Encoding Language Settings Tools Macro Run Plugins Window Help
new 1 LeapYear.java BmiCal.java
10 {
11     float weight = 75.8f;
12
13 C:\Users\Arvind\Desktop\CDAC\OOP JAVA\Day2>javac LeapYear.java
14 C:\Users\Arvind\Desktop\CDAC\OOP JAVA\Day2>java LeapYear
15 not leap year
16 C:\Users\Arvind\Desktop\CDAC\OOP JAVA\Day2>javac LeapYear.java
17 C:\Users\Arvind\Desktop\CDAC\OOP JAVA\Day2>java LeapYear
18
19 C:\Users\Arvind\Desktop\CDAC\OOP JAVA\Day2>javac LeapYear.java
20 C:\Users\Arvind\Desktop\CDAC\OOP JAVA\Day2>java LeapYear
21 leap year
22
23 C:\Users\Arvind\Desktop\CDAC\OOP JAVA\Day2>java BmiCal.java
24 normal weight
25 C:\Users\Arvind\Desktop\CDAC\OOP JAVA\Day2>javac BmiCal.java
26 C:\Users\Arvind\Desktop\CDAC\OOP JAVA\Day2>java BmiCal
27 normal weight
28 C:\Users\Arvind\Desktop\CDAC\OOP JAVA\Day2>javac BmiCal.java
29 C:\Users\Arvind\Desktop\CDAC\OOP JAVA\Day2>java BmiCal.java
30 obeseity is detected do excersise
31 C:\Users\Arvind\Desktop\CDAC\OOP JAVA\Day2>
32 }

```

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

Code:

```

class VoteEli
{
    public static void main(String[] args)
    {
        int age = 17;
        if(age>=18){
            System.out.println("Mubarakho you can vote");
        }
        else{
            System.out.println("na baba abhi umar nahi hai");
        }
    }
}

```

```
C:\Users\Arvind\Desktop\CDAC\OOP JAVA\Day2>javac VoteEli.java
```

```
C:\Users\Arvind\Desktop\CDAC\OOP JAVA\Day2>java VoteEli
na baba abhi umar nahi hai
```

```
C:\Users\Arvind\Desktop\CDAC\OOP JAVA\Day2>|
```

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

```
class MonSesn
{
    public static void main(String[] args)
    {
        int month = 12;
        //int season;
        switch(month)
        {
            case 3:
            case 4:
            case 5:
                System.out.println("Summer is here!!");
                break;

            case 6:
            case 7:
            case 8:
            case 9:
                System.out.println("Autumn is here!!");
                break;

            case 10:
            case 11:
            case 12:
                System.out.println("Winter is here");
                break;

            case 1:
            case 2:
                System.out.println("Spring is here");
        }
    }
}
```

```

        break;

        default:
            System.out.println("Please enter valid month number");
    }
}
}

```

```

C:\Users\Arvind\Desktop\CDAC\OOP JAVA\Day2>javac MonSesn.java

C:\Users\Arvind\Desktop\CDAC\OOP JAVA\Day2>java MonSesn
Spring is here

C:\Users\Arvind\Desktop\CDAC\OOP JAVA\Day2>javac MonSesn.java

C:\Users\Arvind\Desktop\CDAC\OOP JAVA\Day2>java MonSesn
Winter is here

C:\Users\Arvind\Desktop\CDAC\OOP JAVA\Day2>|

```

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.

Code:

```

import java.util.Scanner;
class AreaShape
{
    public static void main(String[] args)
    {
        System.out.println("Please choose which shape area you want to calculate");
        System.out.println("1. Circle");
        System.out.println("2. Square");
        System.out.println("3. Rectangle");
        System.out.println("4. Triangle");
        Scanner sc = new Scanner(System.in);
        int shapenum = sc.nextInt();
        int length;
        int breadth;
        int side;
        int rad;
        //System.out.println(shape);
        switch(shapenum)
        {
            case 3:
                System.out.println("enter length");
                length = sc.nextInt();
                System.out.println("enter breadth");
                breadth = sc.nextInt();
                int recarea = length+length+breadth+breadth ;

```

```
System.out.println("Area of rectangle is: " + recarea);  
break;
```

```
case 1:
```

```
System.out.println("enter radius");  
rad = sc.nextInt();  
int sq = rad*rad;  
float cira = 3.14f * sq;  
System.out.println("Area of circle is: " + cira);  
break;
```

```
case 2:
```

```
System.out.println("enter side");  
side = sc.nextInt();  
int sqa = side * side;  
System.out.println("Area of square is: " + sqa);  
break;
```

```
case 4:
```

```
System.out.println("enter side");  
side = sc.nextInt();  
int tra = 3 * side;  
System.out.println("Area of traingle is: " + tra);  
break;
```

```
default:
```

```
System.out.println("Enter number from choosen options");
```

```
}  
sc.close();
```

```
}
```

```
}
```

```
C:\Windows\System32\cmd.exe x + v
4. Triangle
1
enter radius
5
Area of circle is: 78.5

C:\Users\Arvind\Desktop\CDAC\OOP JAVA\Day2>java AreaShape
Please choose which shape area you want to calculate
1. Circle
2. Square
3. Rectangle
4. Triangle
2
enter side
4
Area of square is: 16

C:\Users\Arvind\Desktop\CDAC\OOP JAVA\Day2>javac AreaShape.java

C:\Users\Arvind\Desktop\CDAC\OOP JAVA\Day2>java AreaShape
Please choose which shape area you want to calculate
1. Circle
2. Square
3. Rectangle
4. Triangle
3
enter length
3
enter breadth
2
Area of rectangle is: 10

C:\Users\Arvind\Desktop\CDAC\OOP JAVA\Day2>java AreaShape
Please choose which shape area you want to calculate
1. Circle
2. Square
3. Rectangle
4. Triangle
4
enter side
5
```

Talking.

CDAC MUN