

CDAC Mumbai PG-DAC AUGUST 24 Assignment No- 2

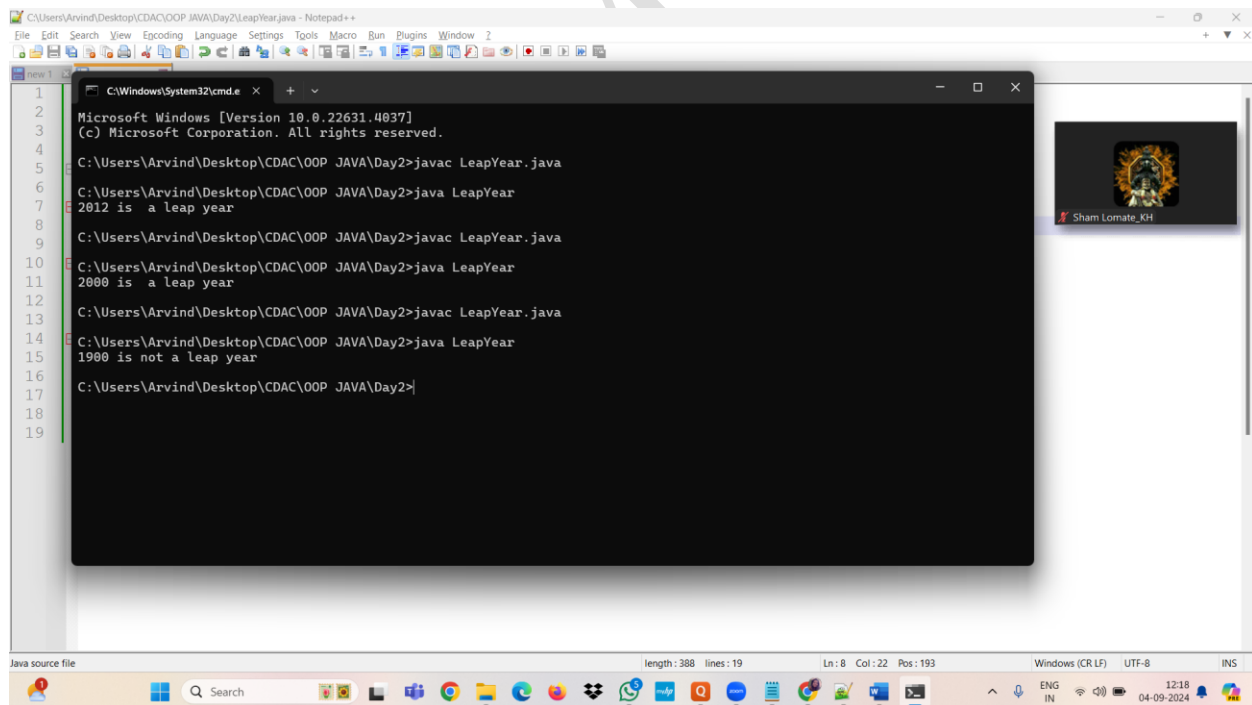
1) Write a program that checks if a given year is a leap year or not using both if-else and switch-case.

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 displays a Windows desktop environment. In the background, a Notepad++ window is open, showing the Java code for the LeapYear class. In the foreground, a Command Prompt window is open, showing the execution of the code. 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>
```

The Notepad++ window shows the following code:

```
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");
        }
    }
}
```

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;
```

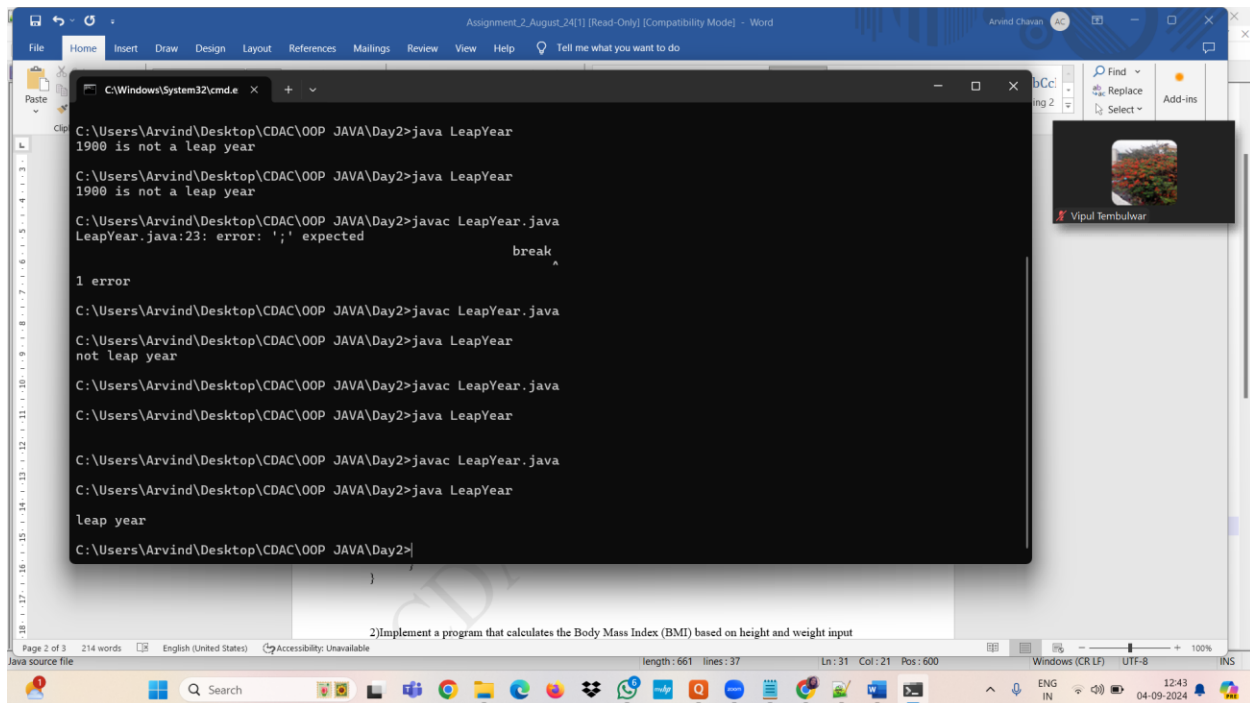
```
                default:
```

```
                    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 int categories (underweight, normal weight, overweight,etc).

Code:

```
// how to calculate BMI
// wieght/ 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("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 terminal window is open, showing the execution of both programs. The LeapYear.java program is run multiple times, showing 'not leap year' and 'Leap year' outputs. The BmiCal.java program is run multiple times, showing 'normal weight' and 'obeseity is detected do excersise' outputs. A watermark 'CDAC' is visible across the image.

```

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 C:\Users\Arvind\Desktop\CDAC\OOP JAVA\Day2>javac LeapYear.java
19 C:\Users\Arvind\Desktop\CDAC\OOP JAVA\Day2>java LeapYear
20 C:\Users\Arvind\Desktop\CDAC\OOP JAVA\Day2>java LeapYear
21 Leap year
22 C:\Users\Arvind\Desktop\CDAC\OOP JAVA\Day2>java BmiCal.java
23 normal weight
24 C:\Users\Arvind\Desktop\CDAC\OOP JAVA\Day2>javac BmiCal.java
25 C:\Users\Arvind\Desktop\CDAC\OOP JAVA\Day2>java BmiCal
26 normal weight
27 C:\Users\Arvind\Desktop\CDAC\OOP JAVA\Day2>javac BmiCal.java
28 C:\Users\Arvind\Desktop\CDAC\OOP JAVA\Day2>java BmiCal.java
29 obeseity is detected do excersise
30 C:\Users\Arvind\Desktop\CDAC\OOP JAVA\Day2>
31 }
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:

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.