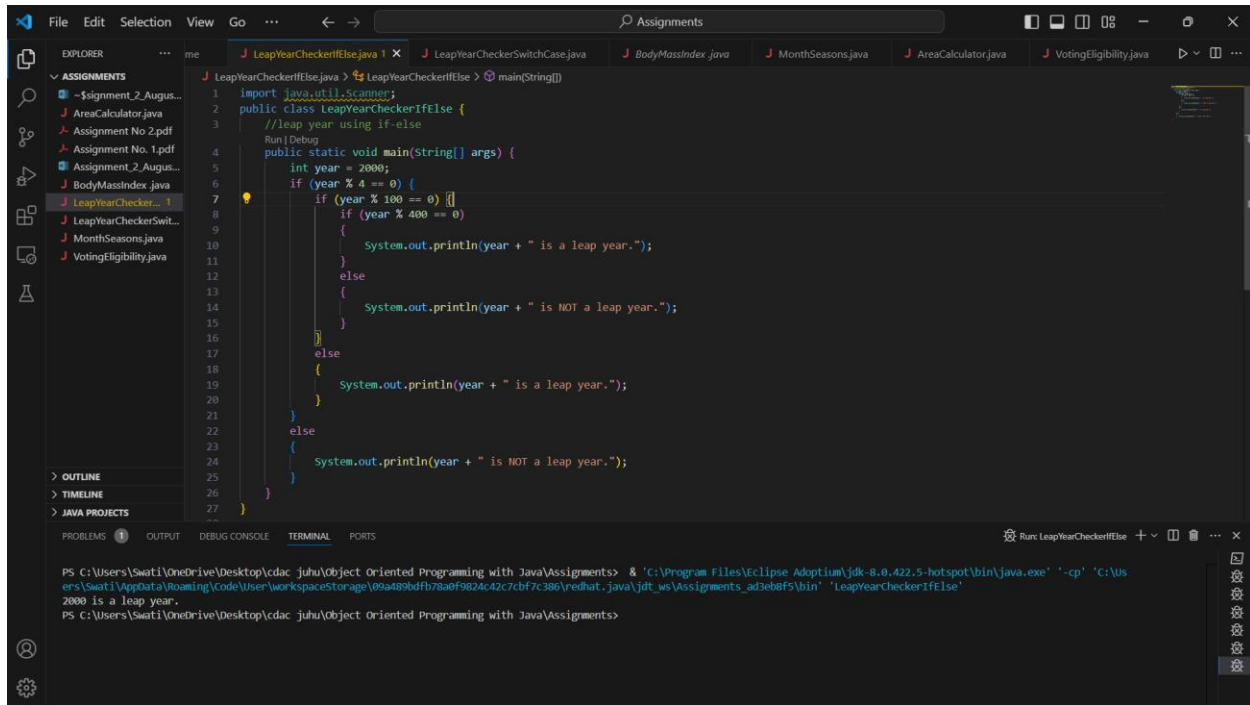


CDAC Mumbai PG-DAC AUGUST 24

Assignment No- 2

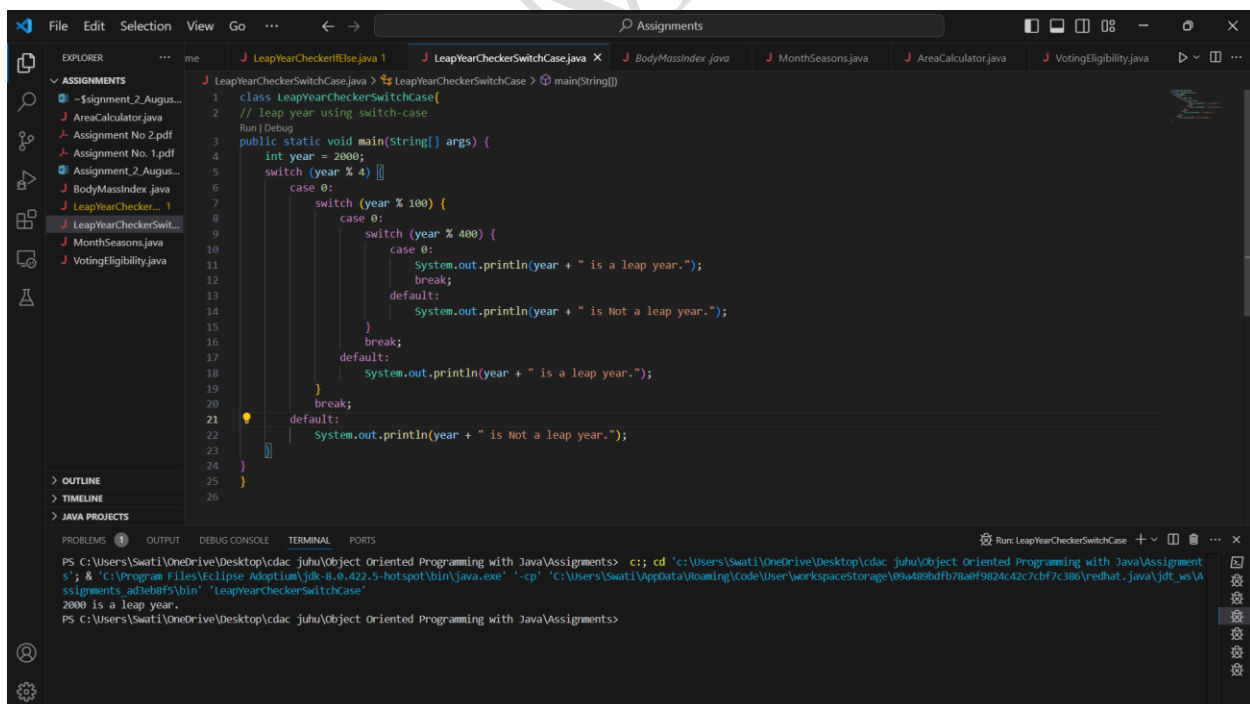
1) Write a program that checks if a given year is a leap year or not using both if-else and switch-case.



The screenshot shows the Eclipse IDE with a Java project named 'LeapYearCheckerIfElse'. The main method in the 'LeapYearCheckerIfElse' class uses if-else logic to check if the year 2000 is a leap year. The code is as follows:

```
1 import java.util.Scanner;
2 public class LeapYearCheckerIfElse {
3     // leap year using if-else
4     public static void main(String[] args) {
5         int year = 2000;
6         if (year % 4 == 0) {
7             if (year % 100 == 0) {
8                 if (year % 400 == 0) {
9                     System.out.println(year + " is a leap year.");
10                }
11            } else {
12                System.out.println(year + " is NOT a leap year.");
13            }
14        } else {
15            System.out.println(year + " is a leap year.");
16        }
17    }
18 }
19
20
21
22
23
24
25
26
27 }
```

The terminal output shows the execution of the program, which prints "2000 is a leap year."

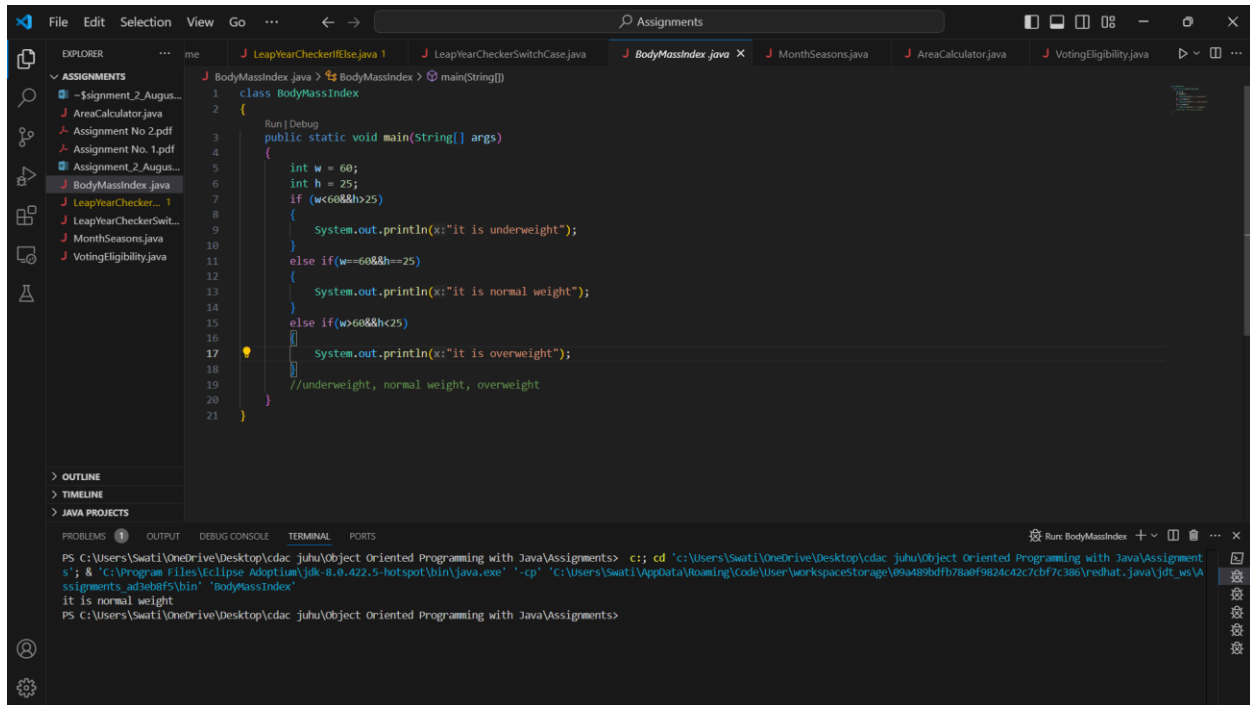


The screenshot shows the Eclipse IDE with a Java project named 'LeapYearCheckerSwitchCase'. The main method in the 'LeapYearCheckerSwitchCase' class uses switch-case logic to check if the year 2000 is a leap year. The code is as follows:

```
1 class LeapYearCheckerSwitchCase {
2     // leap year using switch-case
3     public static void main(String[] args) {
4         int year = 2000;
5         switch (year % 4) {
6             case 0:
7                 switch (year % 100) {
8                     case 0:
9                         switch (year % 400) {
10                             case 0:
11                                 System.out.println(year + " is a leap year.");
12                             break;
13                             default:
14                                 System.out.println(year + " is Not a leap year.");
15                             break;
16                         }
17                     default:
18                         System.out.println(year + " is a leap year.");
19                     break;
20                 }
21             default:
22                 System.out.println(year + " is NOT a leap year.");
23         }
24     }
25 }
26 }
```

The terminal output shows the execution of the program, which prints "2000 is 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).



```
1 class BodyMassIndex {
2     public static void main(String[] args)
3     {
4         int w = 60;
5         int h = 25;
6         if (w<60&&h>25)
7         {
8             System.out.println(x:"it is underweight");
9         }
10        else if (w==60&&h==25)
11        {
12            System.out.println(x:"it is normal weight");
13        }
14        else if (w>60&&h<25)
15        {
16            System.out.println(x:"it is overweight");
17        }
18        //underweight, normal weight, overweight
19    }
20 }
21 }
```

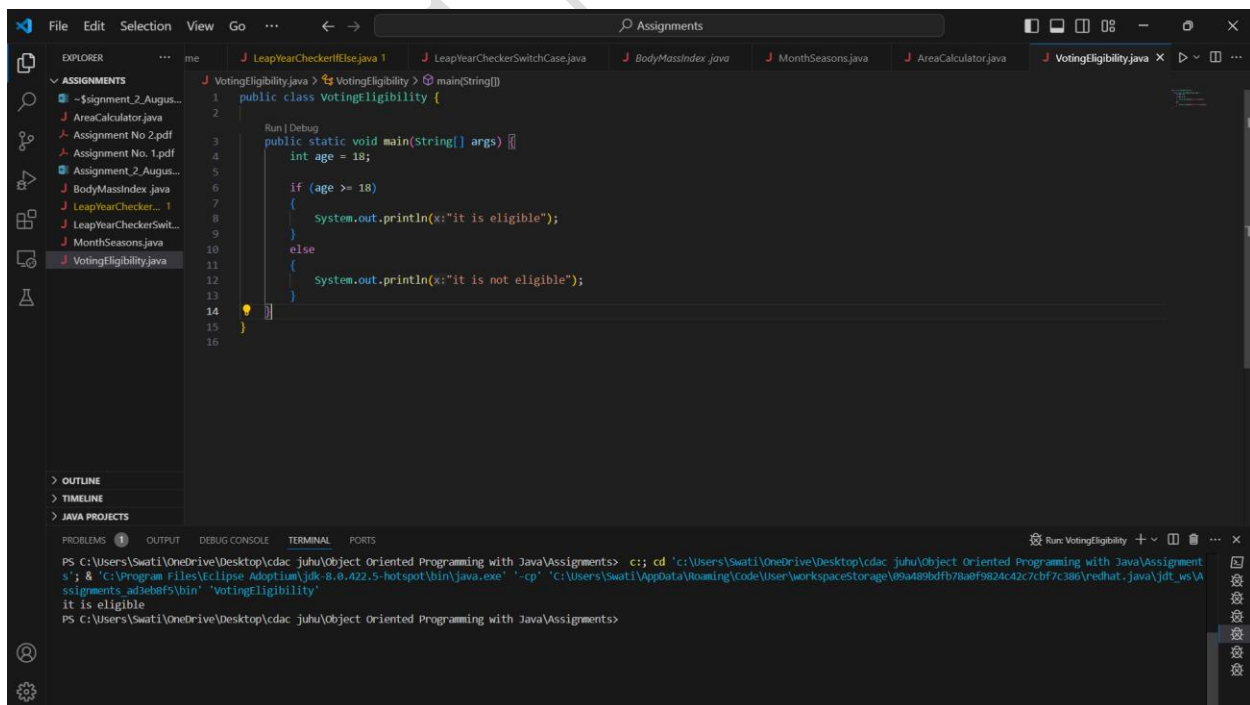
Run | Debug

PS C:\Users\Swati\OneDrive\Desktop\cdac_juhu\Object Oriented Programming with Java\Assignments> cd 'c:\Users\Swati\OneDrive\Desktop\cdac_juhu\Object Oriented Programming with Java\Assignment s'; & "C:\Program Files\Eclipse Adoptium\jdk-8.0.422.5-hotspot\bin\java.exe" "-cp" "C:\Users\Swati\AppData\Roaming\Code\User\workspacestorage\09a489dbf78a0f9824c42c7cbf7c386\redhat.java\jdt_ws\Assignments_ad3eb8f5\bin" "BodyMassIndex"

it is normal weight

PS C:\Users\Swati\OneDrive\Desktop\cdac_juhu\Object Oriented Programming with Java\Assignments>

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



```
1 public class VotingEligibility {
2     public static void main(String[] args) {
3         int age = 18;
4         if (age >= 18)
5         {
6             System.out.println(x:"it is eligible");
7         }
8         else
9         {
10            System.out.println(x:"it is not eligible");
11        }
12    }
13 }
14 }
15 }
16 }
```

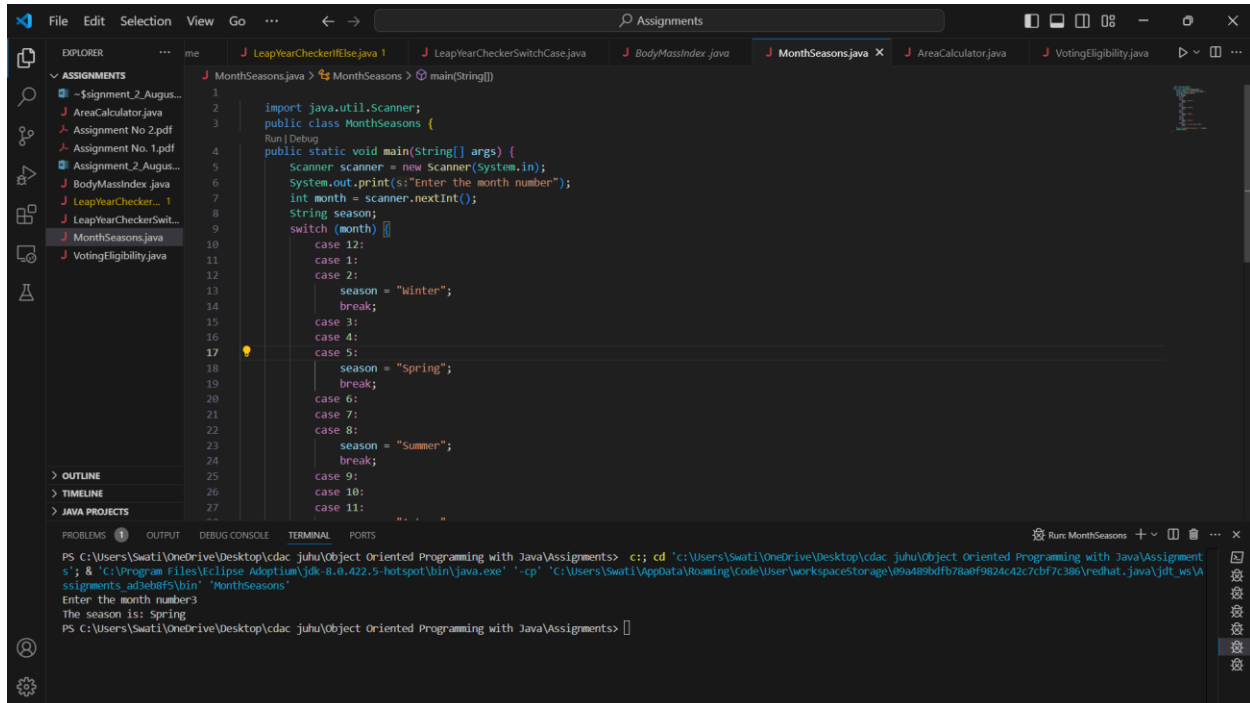
Run | Debug

PS C:\Users\Swati\OneDrive\Desktop\cdac_juhu\Object Oriented Programming with Java\Assignments> cd 'c:\Users\Swati\OneDrive\Desktop\cdac_juhu\Object Oriented Programming with Java\Assignment s'; & "C:\Program Files\Eclipse Adoptium\jdk-8.0.422.5-hotspot\bin\java.exe" "-cp" "C:\Users\Swati\AppData\Roaming\Code\User\workspacestorage\09a489dbf78a0f9824c42c7cbf7c386\redhat.java\jdt_ws\Assignments_ad3eb8f5\bin" "VotingEligibility"

it is eligible

PS C:\Users\Swati\OneDrive\Desktop\cdac_juhu\Object Oriented Programming with Java\Assignments>

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



The screenshot shows an IDE with a project named 'Assignments'. The 'EXPLORER' view on the left lists several files, including 'MonthSeasons.java'. The main editor displays the code for 'MonthSeasons.java', which uses a switch statement to map month numbers to seasons. The 'TERMINAL' at the bottom shows the command to run the program, and the 'OUTPUT' pane shows the execution results.

```
import java.util.Scanner;
public class MonthSeasons {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter the month number");
        int month = scanner.nextInt();
        String season;
        switch (month) {
            case 12:
            case 1:
            case 2:
                season = "Winter";
                break;
            case 3:
            case 4:
            case 5:
                season = "Spring";
                break;
            case 6:
            case 7:
            case 8:
                season = "Summer";
                break;
            case 9:
            case 10:
            case 11:
                season = "Autumn";
                break;
        }
        System.out.println("The season is: " + season);
    }
}
```

PS C:\Users\Swati\OneDrive\Desktop\cdac_juhu\Object Oriented Programming with Java\Assignments> cd 'c:\Users\Swati\OneDrive\Desktop\cdac_juhu\Object Oriented Programming with Java\Assignments'; & 'c:\Program Files\Eclipse Adoptium\jdk-8.0.422.5-hotspot\bin\java.exe' '-cp' 'C:\Users\Swati\AppData\Roaming\Code\User\workspacestorage\09a489bdfb78a0f9824c42c7cbf7c386\redhat.java\jdt_ws\Assignments_ad4eb8f5\bin' 'MonthSeasons'

Enter the month number: 3

The season is: Spring

PS C:\Users\Swati\OneDrive\Desktop\cdac_juhu\Object Oriented Programming with Java\Assignments>

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.