ASSIGNMENT 2

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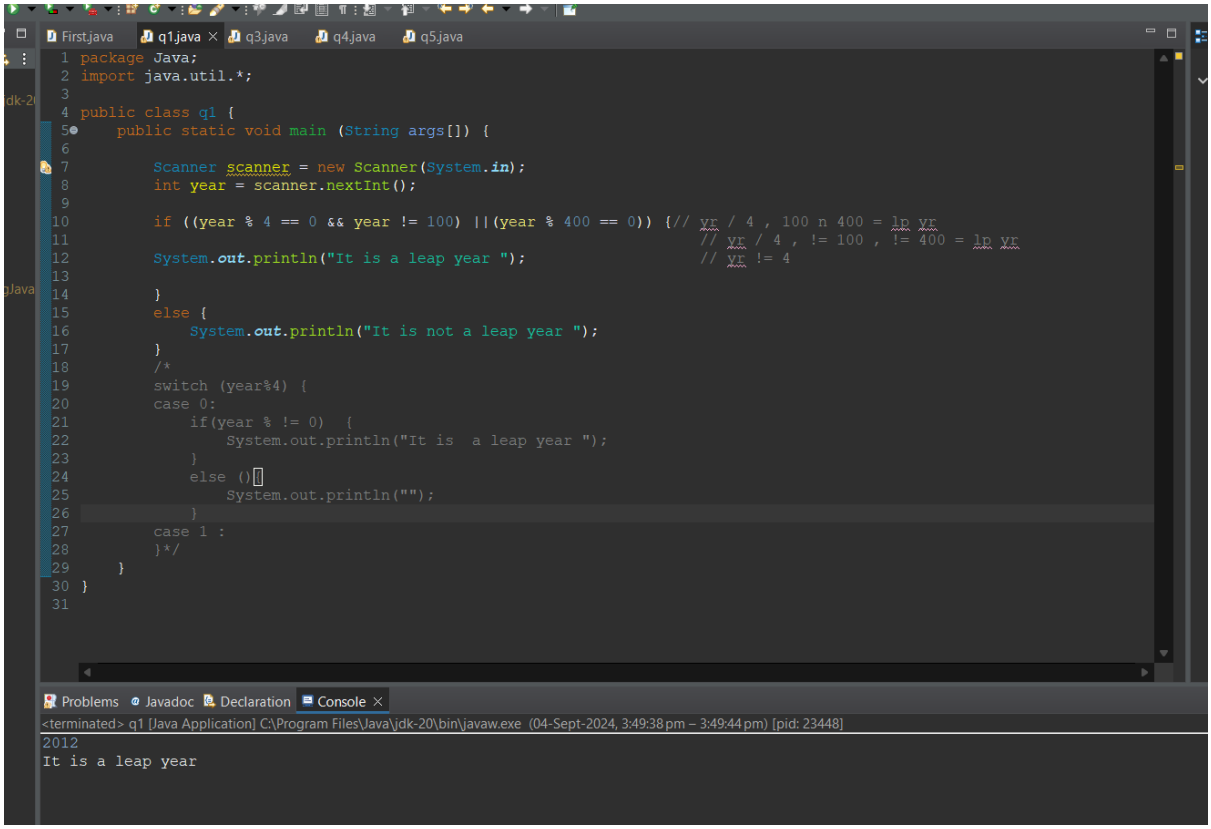
1)Write a program that checks if a given year is a leap year or not using both if-else and switch-case.



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).

```
package Java;
import java.util.*;

class q2 {
	public static void main(String args[]) {
		System.out.println("Enter Height:  ");
		Scanner sc = new Scanner(System.in);
		int height = sc.nextInt();
		System.out.println("Enter Weight:  ");
		int weight = sc.nextInt();
		float height1 = height / 100.0f;
		float BMI = weight / (height1 * height1);
	 if ( BMI <= 18.5f ) {
	   System.out.println("Underweight.");

		}
	 else if ( 18.6f <= BMI  &&  BMI <= 24.9f ) {
		  System.out.println("Normal Weight.");
		}
		else {
		System.out.println("Overweight.");
		}

}
}
```

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

```java
package Java;
import java.util.*;
public class q3 {
	public static void main (String a[]) {

		Scanner sc = new Scanner(System.in);
		int n = sc.nextInt();

		if (n >= 18 ) {
			System.out.println("Eligible for voting ");

		}
		else {
			System.out.println("Not Eligible for voting ");
		}
	}
}
```

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

```java
package Java;

import java.util.Scanner;
public class q4 {
   public static void main(String[] args) {
      Scanner scanner = new Scanner(System.in);
      System.out.print("Enter a month (1-12): ");
      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;
            default:
                season = "Month does not exist ";}
```

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```
        System.out.println("The season is: " + season);
    }
}
```

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.

```
package Java;
import java.util.*;
public class q5 {
      public static void main (String a[]) {
            System.out.println("Type 1 To Calculate Circle ");
            System.out.println("Type 2 To Calculate Rectangle ");
            System.out.println("Type 3 To Calculate Square");
            System.out.println("Type 4 To Calculate Triangle ");

            Scanner sc = new Scanner(System.in);
            int shape = sc.nextInt();
            switch (shape) {
            case 1 :
                  System.out.println("Enter the radius ");
                  int b1 = sc.nextInt();
                  double area = (3.14 *b1*b1);
                  System.out.println("Area is "+ area);
                  break;
            case 2 :
                  System.out.println("Enter the length ");
                  System.out.println("Enter the Width ");
                  int c1 = sc.nextInt();
                  int c2 = sc.nextInt();
                  double are = (c1 * c2);
                  System.out.println("Area Of rectangle is "+ are);
                  break;
            case 3 :
                  System.out.println("Enter the Length ");
                  int d1 = sc.nextInt();
                  double ar = (d1*d1);
                  System.out.println("Area Of Square is "+ ar);
                  break;
            case 4 :
                  System.out.println("Enter the base ");
                  System.out.println("Enter the Height");
                  int e1 = sc.nextInt();
                  int e2 = sc.nextInt();
                  double g = ((e1*e2)/2);
                  System.out.println("Area of Triangle is "+ g);
                  break;
            }
```

```
        }
}
```