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:

```
package Assignment2;
import java.util.*;
public class LeapYear {
	public static void main(String args[]) {
		int year;
		Scanner sc = new Scanner (System.in);
		System.out.println("Enter age: ");
		year = sc.nextInt();
		if (( year%4==0 && year%100!=0) ||(year%400==0)) {
			System.out.println(year+" This is the leap year ");
		}
		else {
			System.out.println(year + ": This is not leap Year");
		}
		sc.close();
	}

}
```

Output:

```
Enter Year:
2024
2024 This is the leap year
```

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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:

```
package Assignment2;
import java.util.Scanner;
public class BmiCalculator {
public static void main(String[] args) {
	float weight,height,meter,bmi;

	Scanner sc = new Scanner(System.in);
	System.out.println("Enter your Weight in kg: ");
	weight = sc.nextFloat();
	System.out.println("Enter Your height Centimeter: ");
	height = sc.nextFloat();
	meter = height/100;
	bmi = weight/(meter*meter);
	System.out.println("BMI is: "+ bmi);
	if (bmi<=18.4) {
		System.out.println("Your BMI is Underweight");
	}
	else if(18.4<=bmi && 24.9>=bmi) {
		System.out.println("Your BMI is Normal");
	}
	else {
		System.out.println("Your BMI is Overweighted");
	}
	sc.close();
  }
}
```

Output:

```
Enter your Weight in kg:
70
Enter Your height Centimeter:
182
BMI is: 21.132713
Your BMI is Normal
```

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

```
package Assignment2;
import java.util.Scanner;

public class VotingAge {
	public static void main(String[] args) {
		int age;
		 Scanner sc= new Scanner(System.in);
		 System.out.println("Enter Your age: ");
		 age = sc.nextInt();
		 if(age>18 || age==18) {
			 System.out.println("You are eligible for Voting");
		 }
		 else {
			 System.out.println("You are not Eligible for voting");
		 }
		 sc.close();
	}


}
```

```
Enter Your age:
18
You are eligible for Voting
```

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

→

```
package Assignment2;
import java.util.Scanner;
public class Season {
public static void main(String[] args) {
	Scanner sc = new Scanner(System.in);
	int month;
	System.out.println("Enter the month: ");
	month= sc.nextInt();

	switch(month) {
	case 1: case 2: case 12:{
		System.out.println("Month " + month + " in a winter");
		System.out.println("Winter: December, January, February");
	}
	break;

	case 3: case 4: case 5:{
		System.out.println("Month " + month + " in a Spring");
		System.out.println("Spring: March, April , May");
	}
	break;

	case 6: case 7: case 8:{
		System.out.println("Month " + month + " in a Summer");
		System.out.println("Summer: June, July, August");
	}
	break;

	case 9: case 10: case 11:{
		System.out.println("Month " + month + " in a Autumn");
		System.out.println("Autumn : September, Octomber, November");
	}
	break;

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

```
Enter the month:
9
Month 9 in a Autumn
Autumn : September, Octomber, November
```

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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:

```
package Assignment2;
import java.util.Scanner;
public class ShapeCalculator {
public static void main(String[] args) {
	int num,height,width,base;
	float red,pie,side,area;
	pie= 3.14f;
	System.out.print(" 1.Circle\n 2.square\n 3.Rectangle\n 4.Triangle\n" + "Enter the option:   22");
	Scanner sc = new Scanner(System.in);
	num= sc.nextInt();
	switch (num) {
	case 1:{
		System.out.print("Enter the Radius of circle:   ");

		red = sc.nextFloat();
		 area = pie * (red*red);
		System.out.println("The Area of Circle is: " + area);
	}

	case 2:{
		System.out.println("Enter the side length of the square: ");
		System.out.print("Side:   ");
		side=sc.nextFloat();
		area = (side*side);
		System.out.println("Area of Square: " + area);
	}
	break;

	case 3:{
		System.out.println("Enter the height & width  of the Rectangle: ");
		System.out.print("Height:   ");
		height = sc.nextInt();
		System.out.print("width:   ");
		width = sc.nextInt();
		area = (height*width);
		System.out.println("Area of the Rectangle " + area);
		}
	break;

	case 4:{
		System.out.println("Enter the base & Height of triangle: ");
		System.out.print("Base :   ");
		base =sc.nextInt();
		System.out.print("Height:   ");
		height = sc.nextInt();
		area = 1/2 * base *height;
		System.out.println("Area of tringle: " + area);
```

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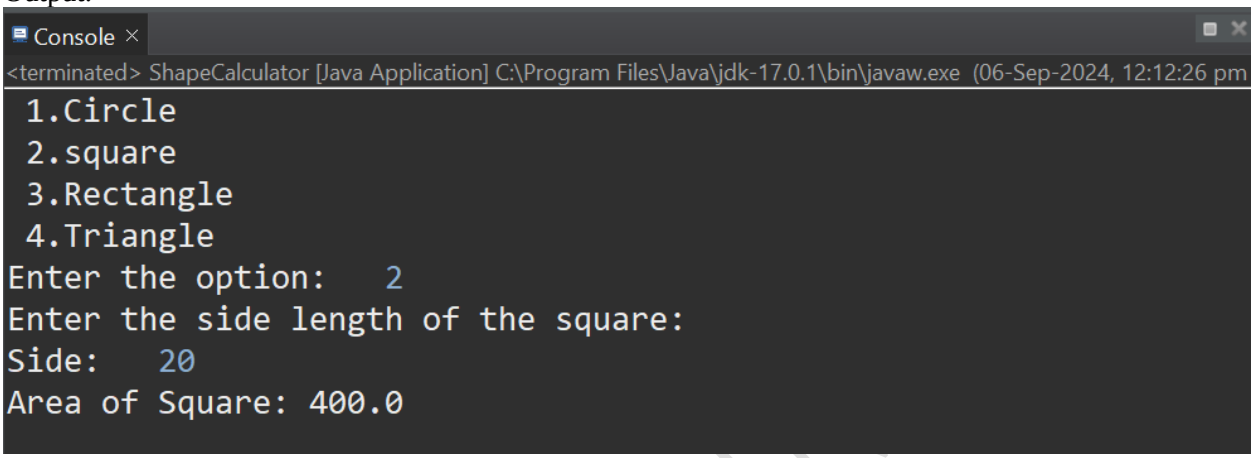
```
        }
        break;
                }
        sc.close();
        }
}
```

Output:



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