Assignment No- 1

Object Oriented Programing using Java

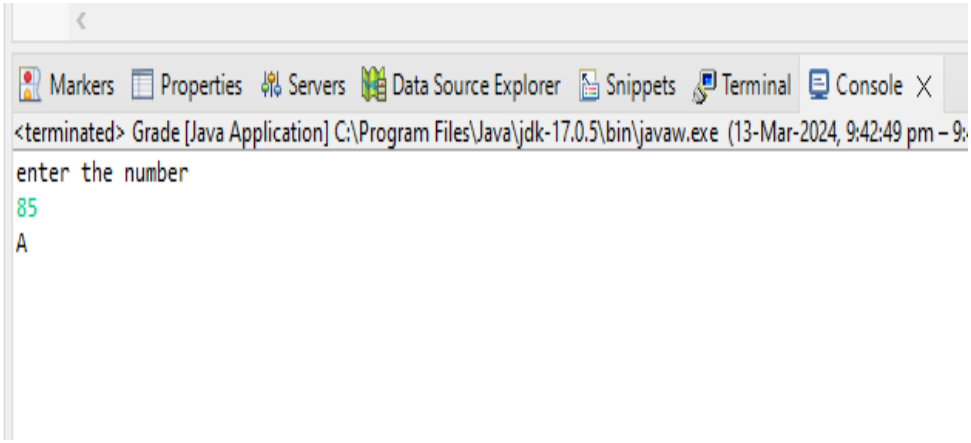
1.Write a program that takes a numerical grade as input and outputs the corresponding letter grade using if-else statements.

Code:

```
package Assignment1;


import java.util.Scanner;


public class Grade {


	public static void main(String[] args) {
		// TODO Auto-generated method stub
		Scanner sc = new Scanner(System.in);
		System.out.println("enter the number");
		int num = sc.nextInt();


		if(num>=90 && num <=100) {
			System.out.println("A+");
		}
		else if (num >=80 && num <= 90) {
			System.out.println("A");
		}
		else if (num >=70 && num <= 80) {
			System.out.println("B");
		}
```

```
            else if (num >=60 && num <= 70) {
                System.out.println("C");
            }
            else if (num >=50 && num <= 60) {
                System.out.println("D");
            }
            else if (num >=40 && num <= 50) {
                System.out.println("C");
            }
            else {
                System.out.println("Fail");
            }

        }

}
```

Output



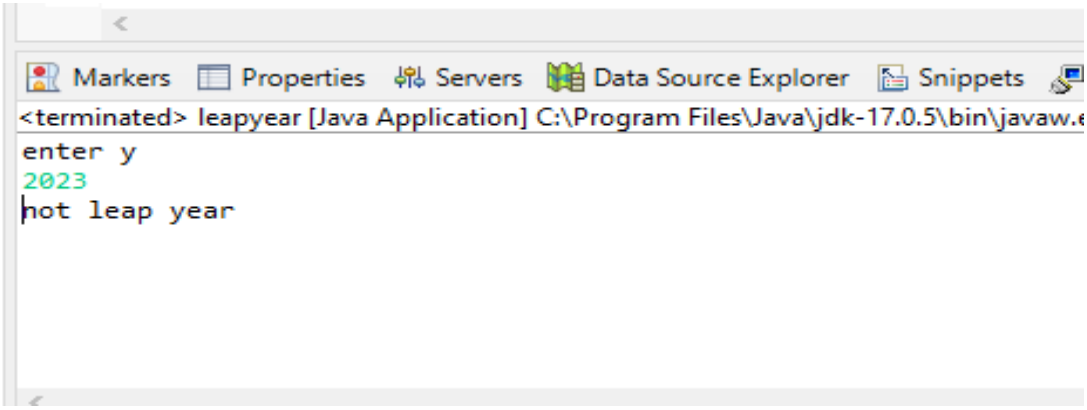
2)Write a program that checks if a given year is a leap year or not using both if-else and switch-case.

Code :

```
package Assignment1;

import java.util.Scanner;

public class leapyear {

	public static void main(String[] args) {
		// TODO Auto-generated method stub

			int y;
			Scanner sc = new Scanner(System.in);
			System.out.println("enter y");
			y=sc.nextInt();
			if(y%400==0 && y%100==0 ||y%4==0 && y%100!=0) {
				System.out.println("leap year");
			}
			else {
				System.out.println("not leap year");
			}


	}
```

}

Output:


Markers
Properties
Servers
Data Source Explorer
Snippets
<terminated> leapyear [Java Application] C:\Program Files\Java\jdk-17.0.5\bin\javaw.
enter y
2023
not leap year

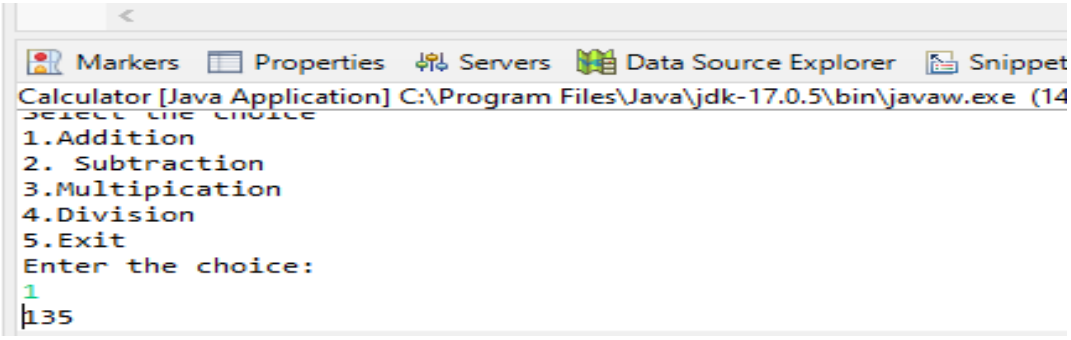
3)Implement a simple calculator program that takes two numbers and an operator (+, -, *, /) as input and performs the operation using switch-case.

code

```
import java.util.Scanner;


public class Calculator {


	public static void main(String[] args) {
		// TODO Auto-generated method stub
		while(true) {
	Scanner sc = new Scanner(System.in);
	System.out.println("_____CALCULATOR_____");
	System.out.println("Enter Number 1");
	int num1 = sc.nextInt();
	System.out.println("Enter Number 2");
	int num2 = sc.nextInt();
	System.out.println("Select the choice");
	System.out.println("1.Addition");
	System.out.println("2. Subtraction");
	System.out.println("3.Multipication");
	System.out.println("4.Division");
	System.out.println("5.Exit");
	System.out.println("Enter the choice:");
	int choice = sc.nextInt();


	switch(choice){
	case 1:
	  System.out.println(num1+num2);
```

```
  break;
case 2:
     System.out.println(num1-num2);
  break;
case 3:
  System.out.println(num1*num2);
  break;
case 4:
  System.out.println(num1/num2);
  break;
case 5:
  System.exit(choice);



}


}
  }
  }
```

Output:



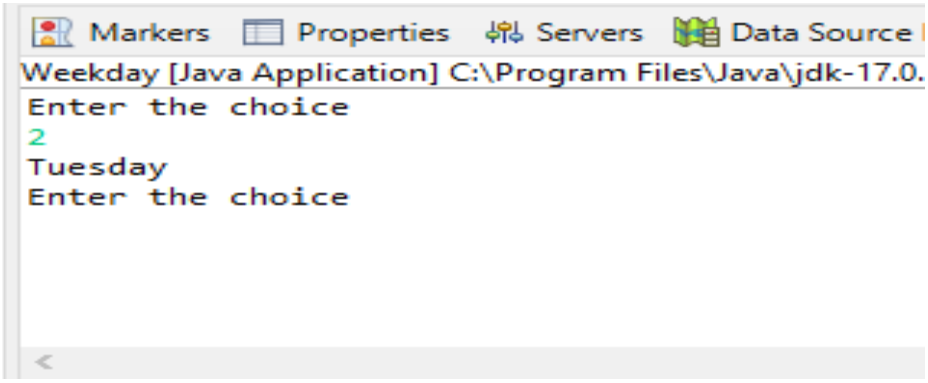
4)Write a program that takes a number representing a weekday (1-7) and prints the name of the weekday using switch-case.

Code

```
import java.util.Scanner;

public class Weekday {

	 public static void main(String[] args) {
		// TODO Auto-generated method stub
		while(true) {
	Scanner sc = new Scanner(System.in);
	System.out.println("Enter the choice");
	int day = sc.nextInt();
	switch (day) {
	case 1 :
	  System.out.println("Monday");
	  break;
	case 2:
```

```
  System.out.println("Tuesday");
  break;
case 3 :
  System.out.println("Wenesday");
  break;
case 4:
  System.out.println("Thursday");
  break;
case 5:
  System.out.println("Friday");
  break;
case 6 :
  System.out.println("Saturday");
  break;
case 7 :
  System.out.println("Sunday");
  break;
case 8 :
  System.exit(day);

}

 }
```

Output :



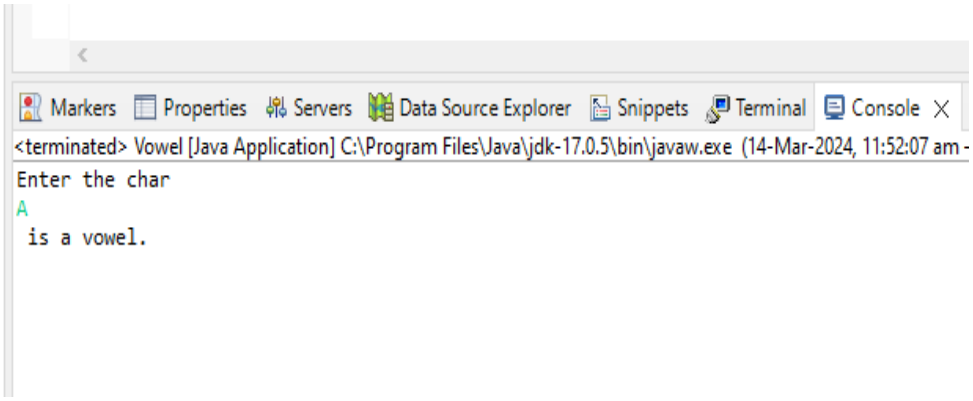
5)Write a program that takes a character as input and determines whether it's a vowel or a consonant using if-else.

Code

```
package Assignment1;

import java.util.Scanner;

public class Vowel {

    public static void main(String[] args) {
        // TODO Auto-generated method stub
      System.out.println("Enter the char");
   Scanner sc = new Scanner(System.in);
   char ch = sc.next().charAt(0);
   if (ch == 'a' || ch == 'e' || ch == 'i' || ch  == 'o' || ch == 'u' ||
       ch == 'A' || ch == 'E' || ch == 'I' || ch == 'O' ||ch== 'U') {
       System.out.println( " is a vowel.");
```

```
        }
    else {
        System.out.println("consonant");
    }
      }

}
```

Output:



6)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 Assignment1;


import java.util.Scanner;


public class BMI {


        public static void main(String[] args) {
                // TODO Auto-generated method stub
Scanner scanner = new Scanner(System.in);


      System.out.print("Enter your weight in kilograms: ");
      double weight = scanner.nextDouble();


      System.out.print("Enter your height in meters: ");
      double height = scanner.nextDouble();


      double bmi = weight / (height * height);


      System.out.println("Your BMI is: " + bmi);


      String category;
      if (bmi < 18.5) {
         category = "Underweight";
```

```
        } else if (bmi >= 18.5 && bmi < 25) {
            category = "Normal weight";
        } else if (bmi >= 25 && bmi < 30) {
            category = "Overweight";
        } else {
            category = "Obese";
        }

        System.out.println("BMI Category: " + category);


    }

}
```

Output: