SCHOOL OF COMPUTING

M.Reddy manish

CH.SC.U4CSE24129

OBJECT ORIENTED PROGRAMMING (23CSE111)

LAB RECORD

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BONAFIDE CERTIFICATE

This is to certify that the Lab Record work for 23CSE111- Object Oriented Programming Subject submitted by ***CH.SC.U4CSE24129 – M. Reddy Manish*** in **"Computer Science and Engineering"** is a Bonafide record of the work carried out under my guidance and supervision at Amrita School of Computing, Chennai.

This Lab examination held on

Internal Examiner 1 Internal Examiner 2

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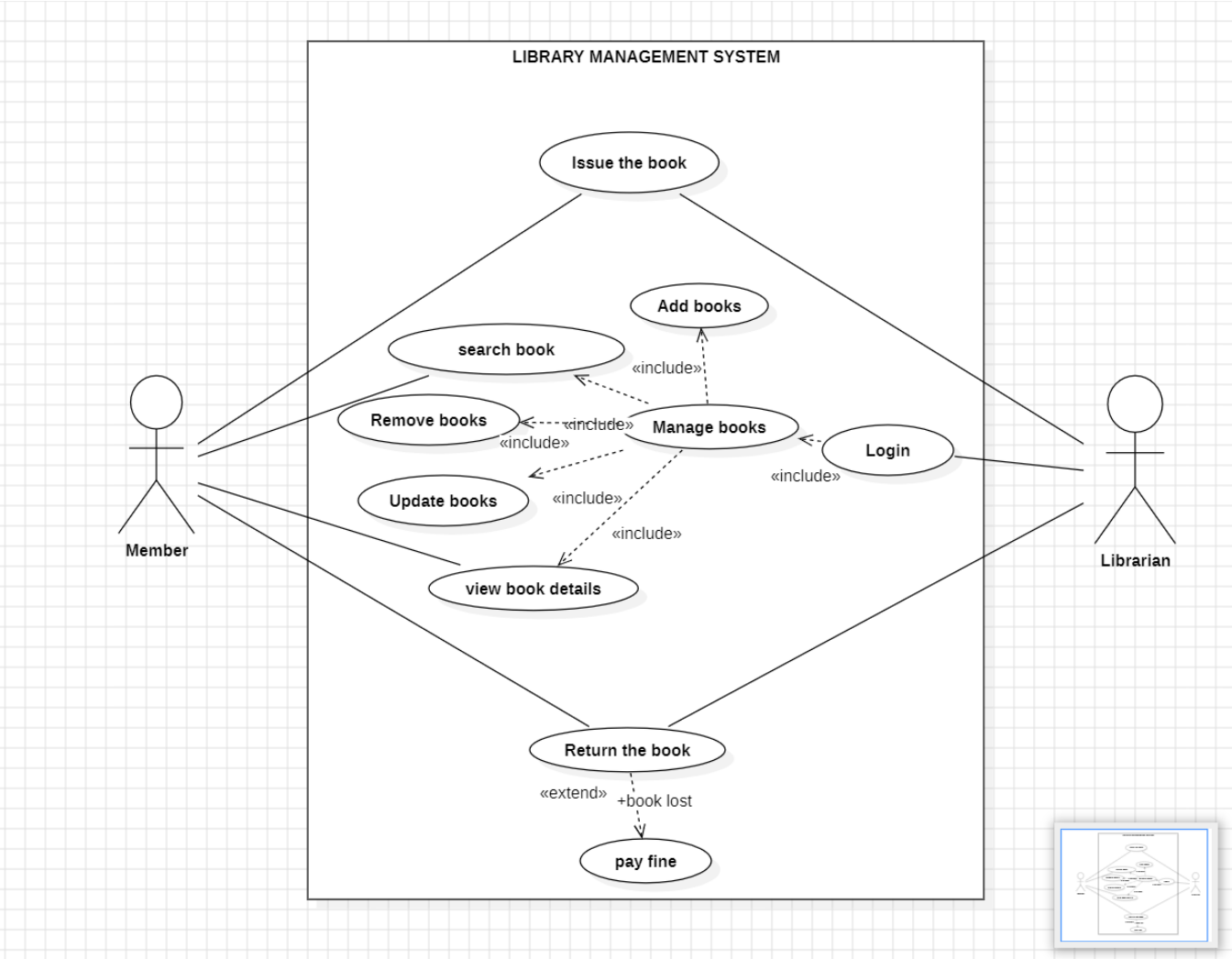

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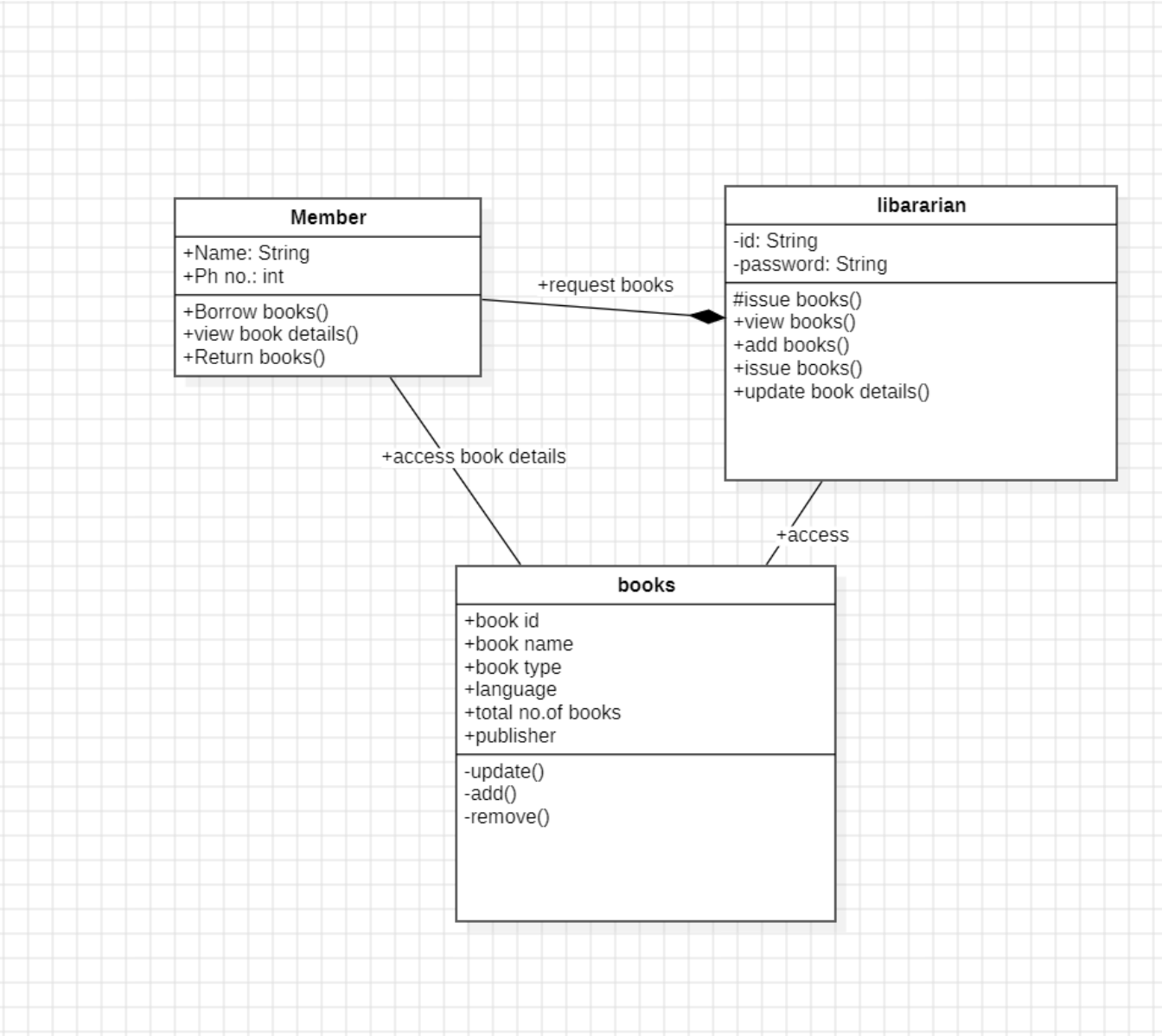

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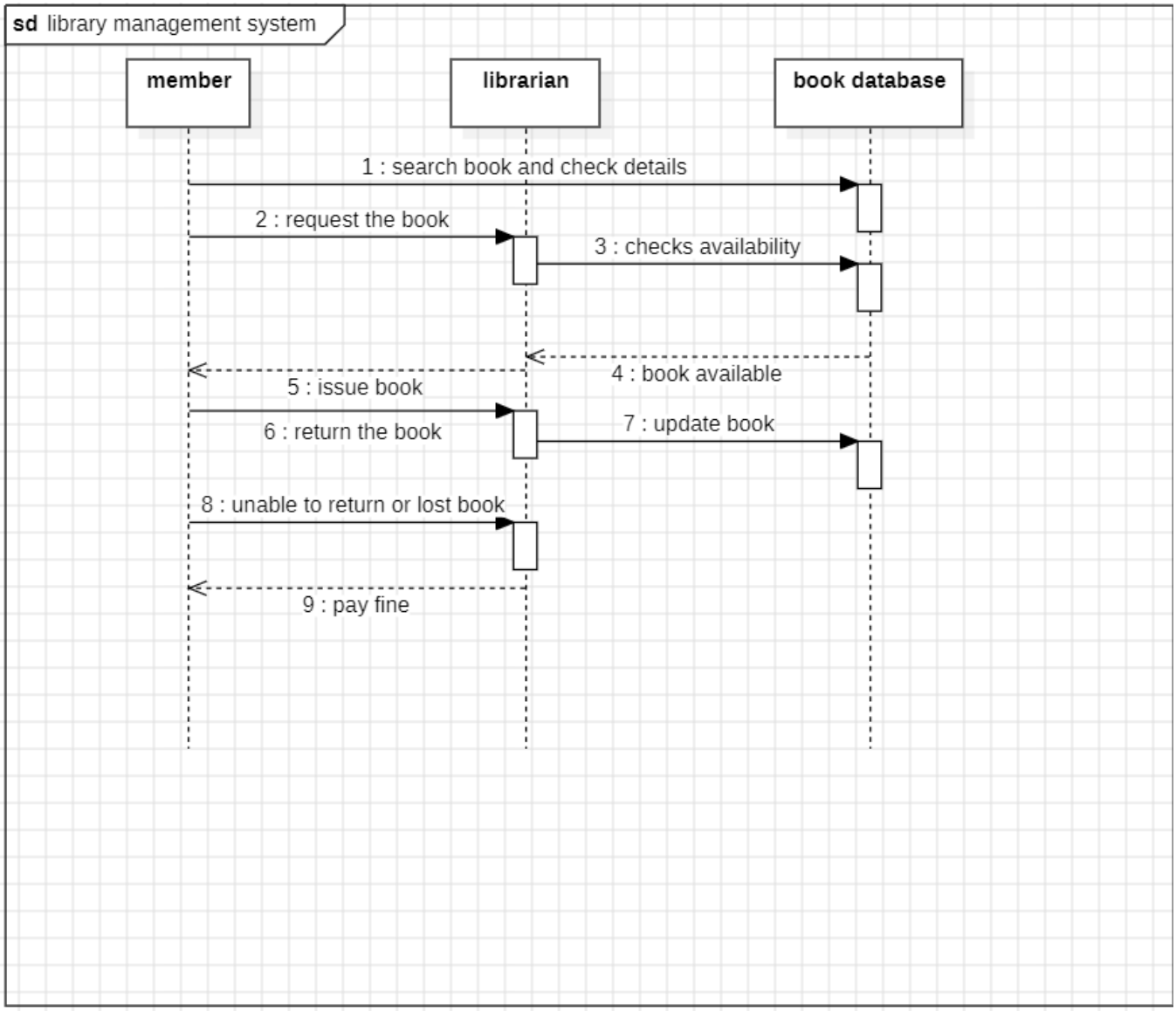
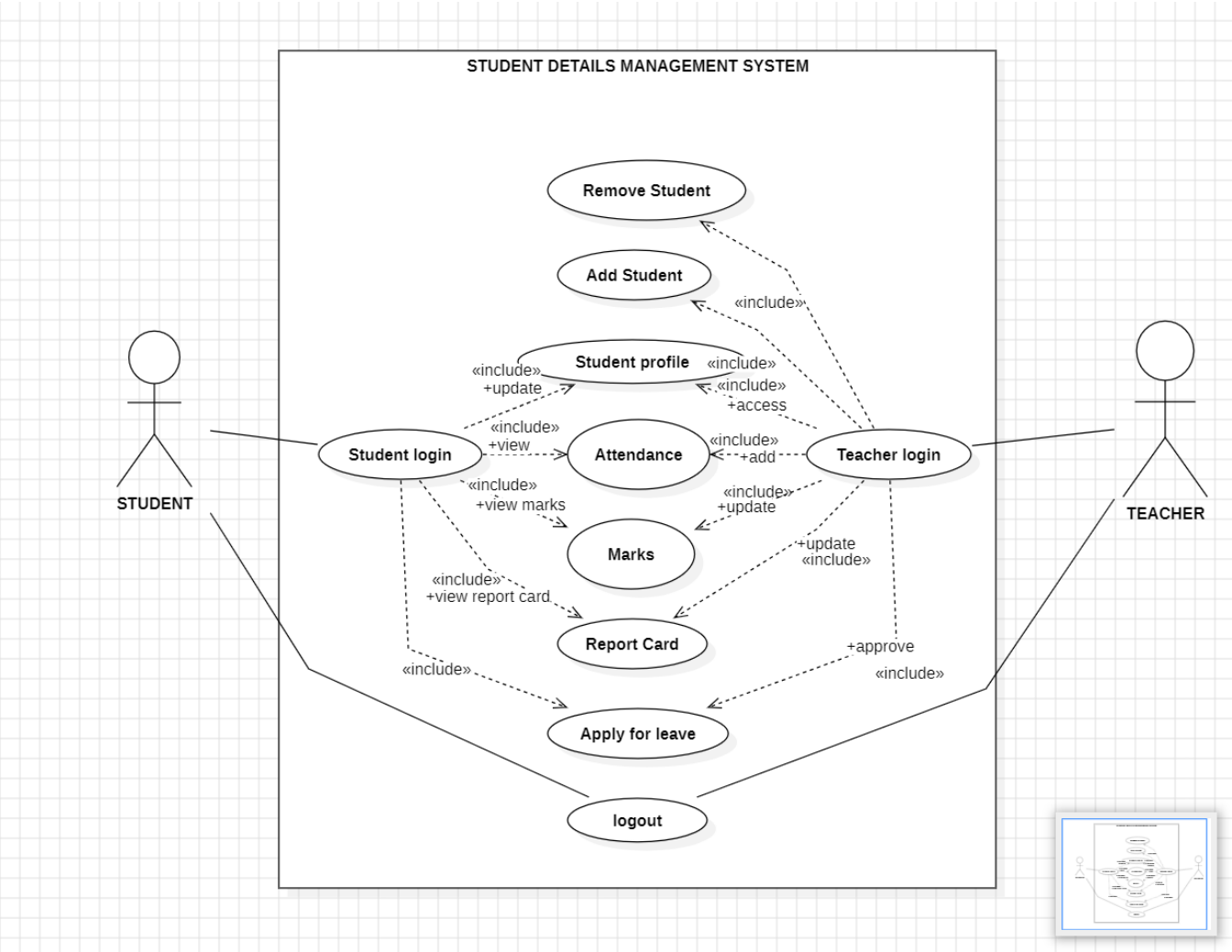


2.Student Management system

2.a) Use Case Diagram



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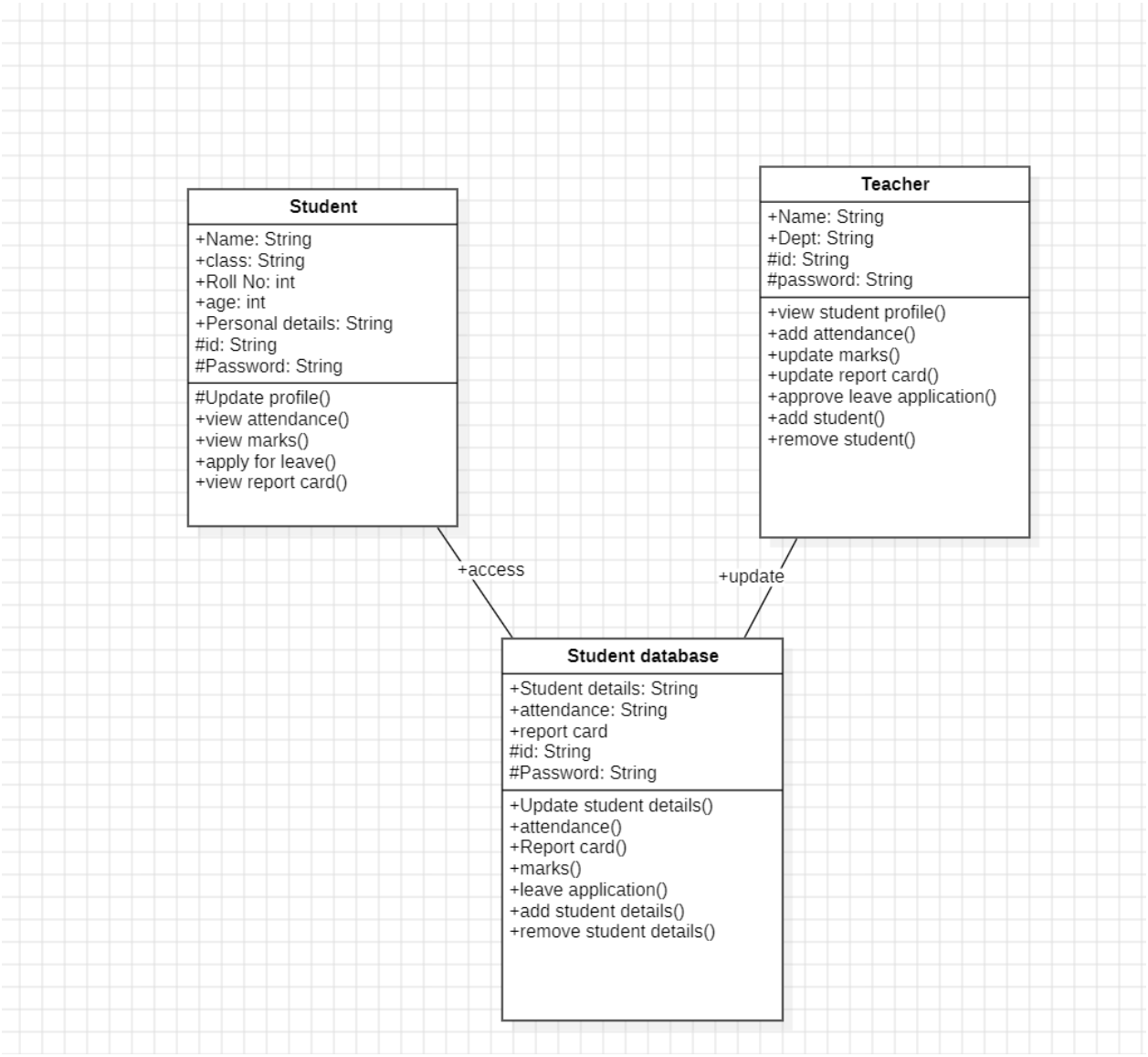
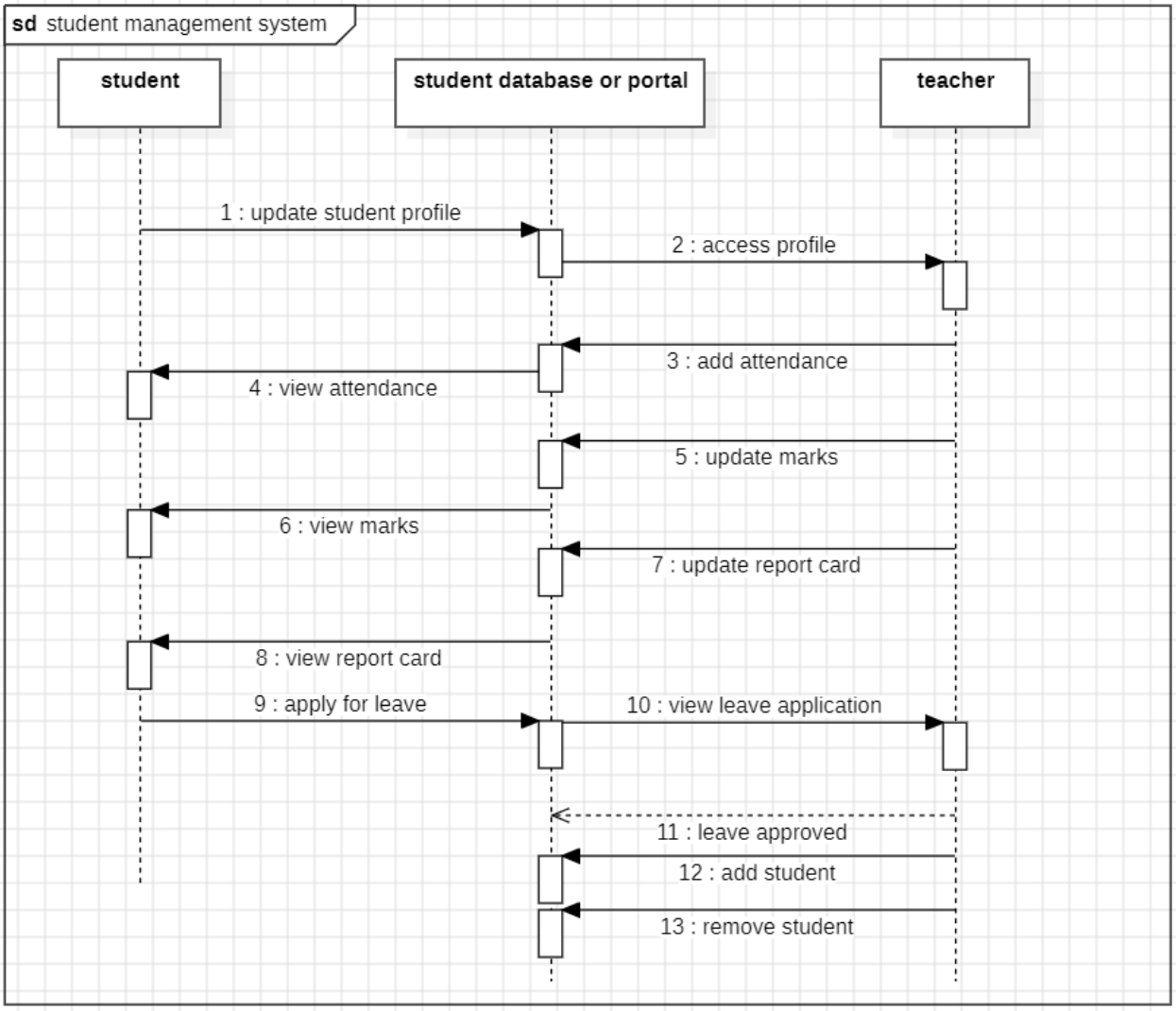
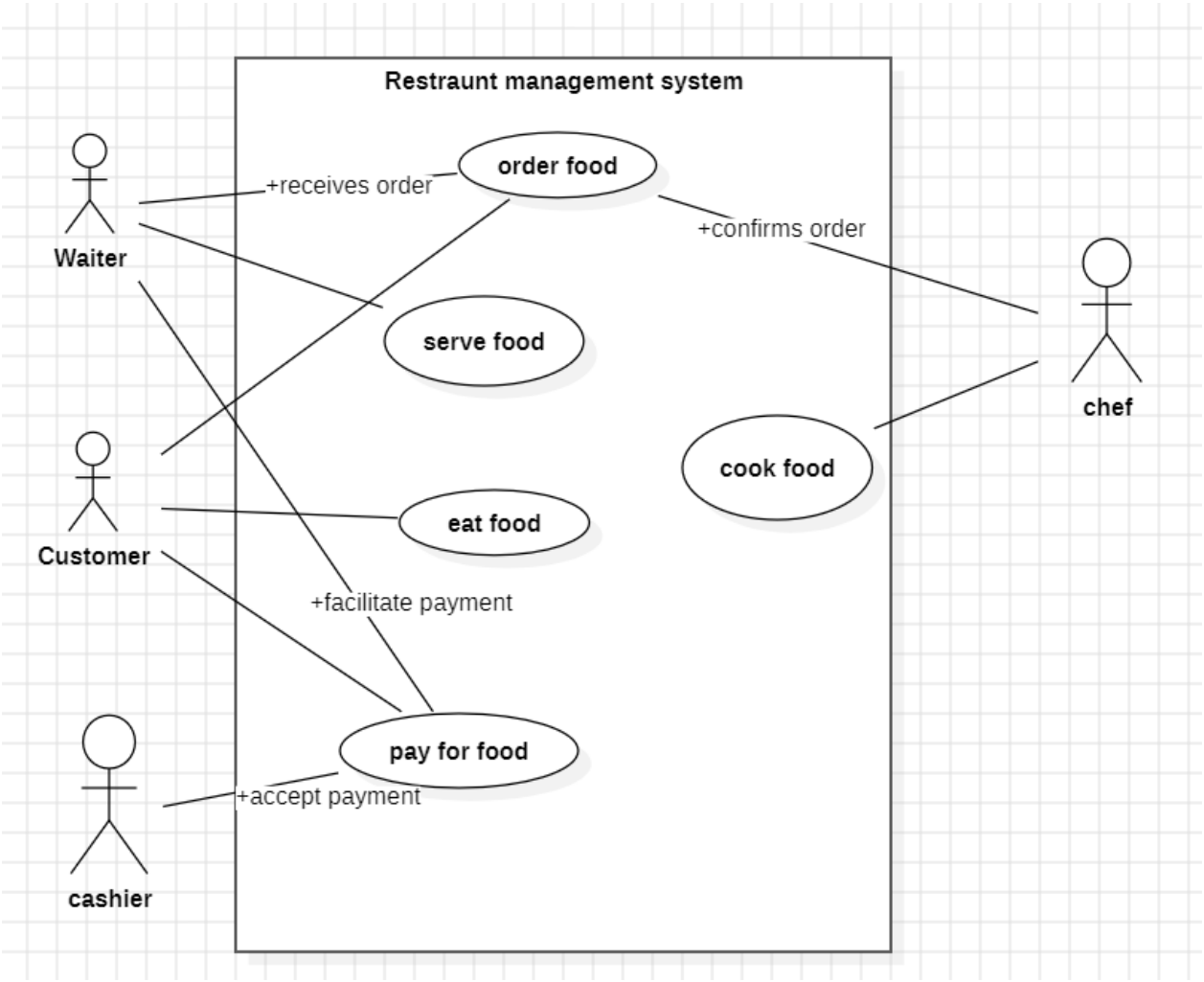


2.c) Sequence Diagram



3.Restaurent Management system

3.a) Use Case Diagram



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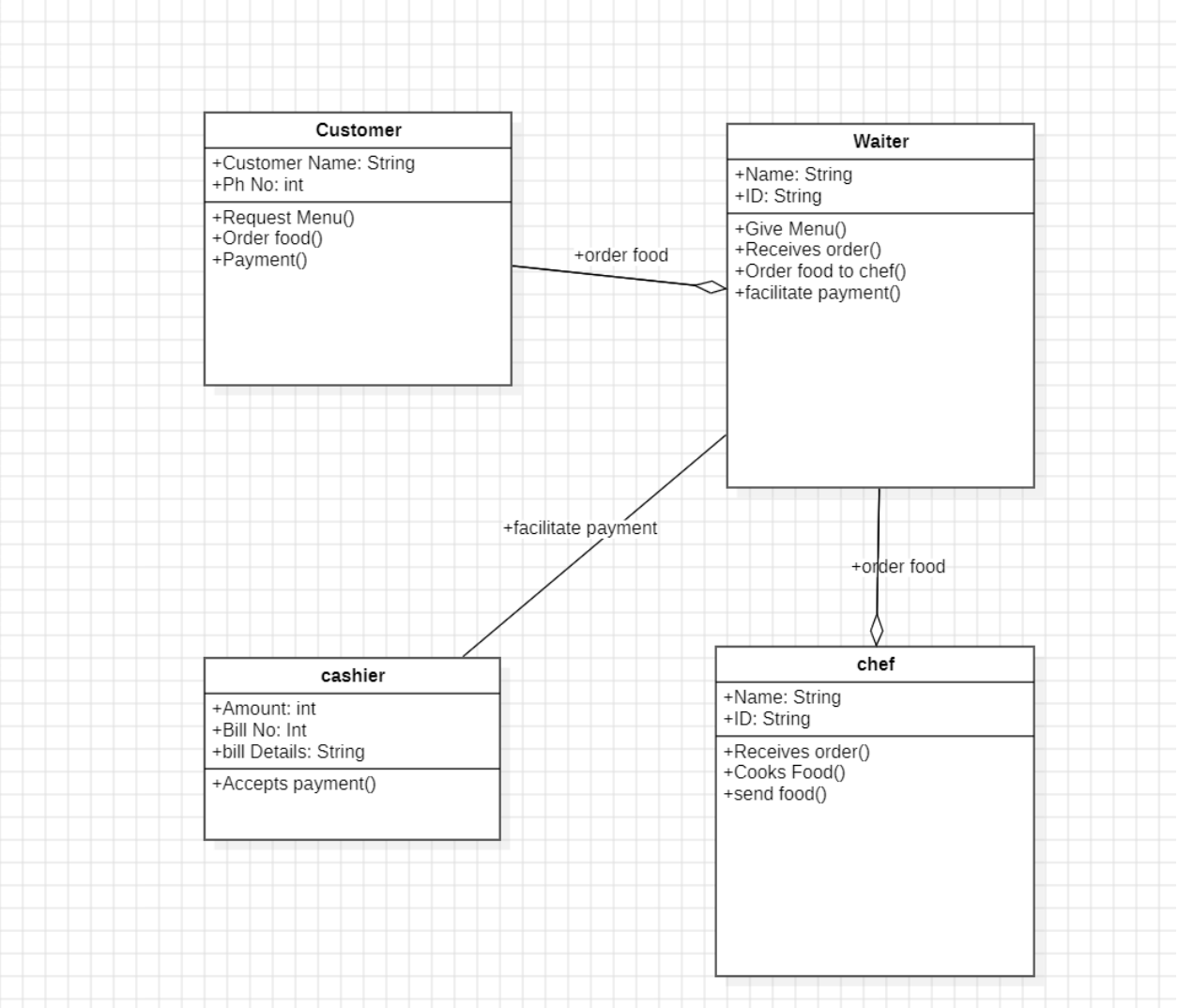

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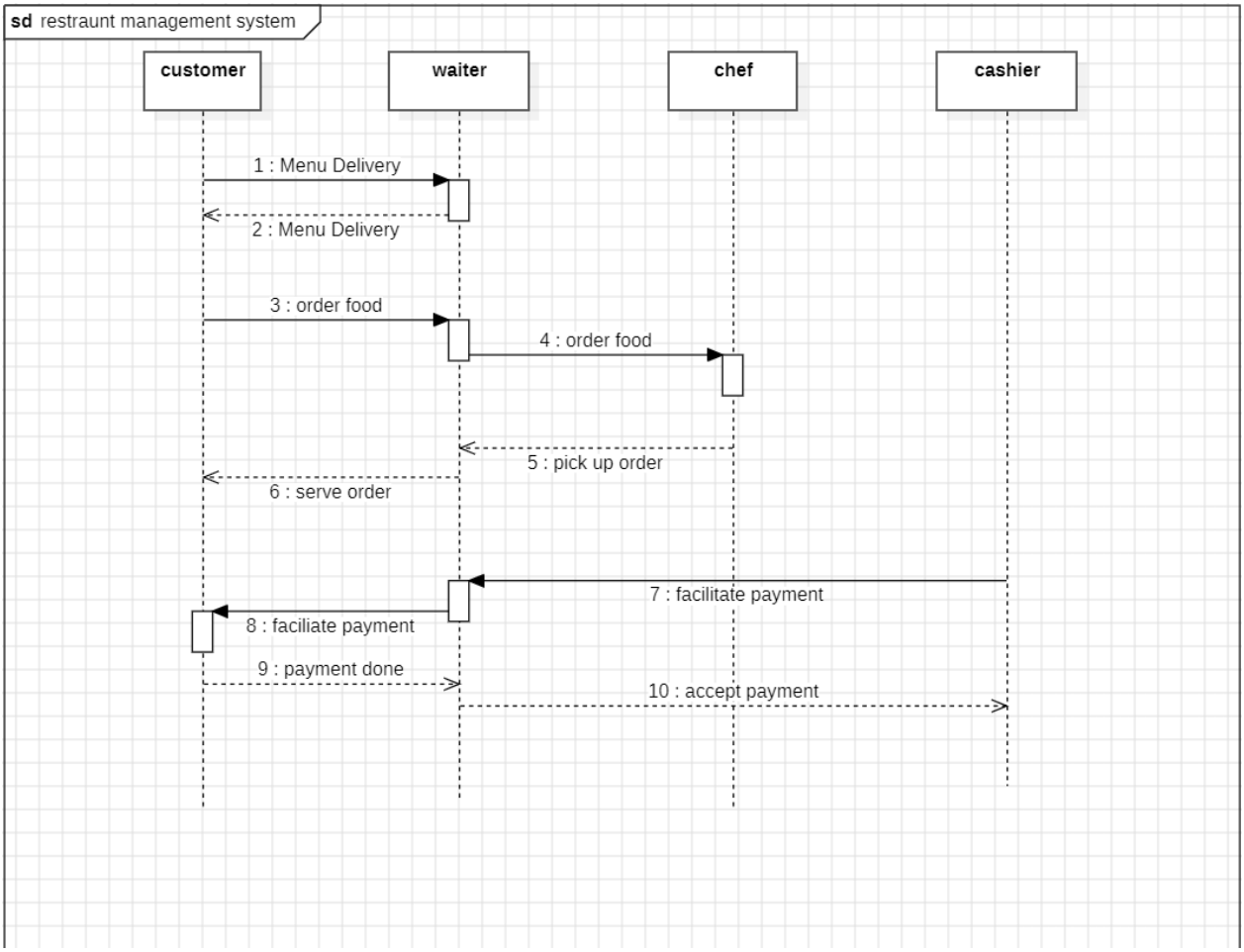


BASIC JAVA PROGRAMS

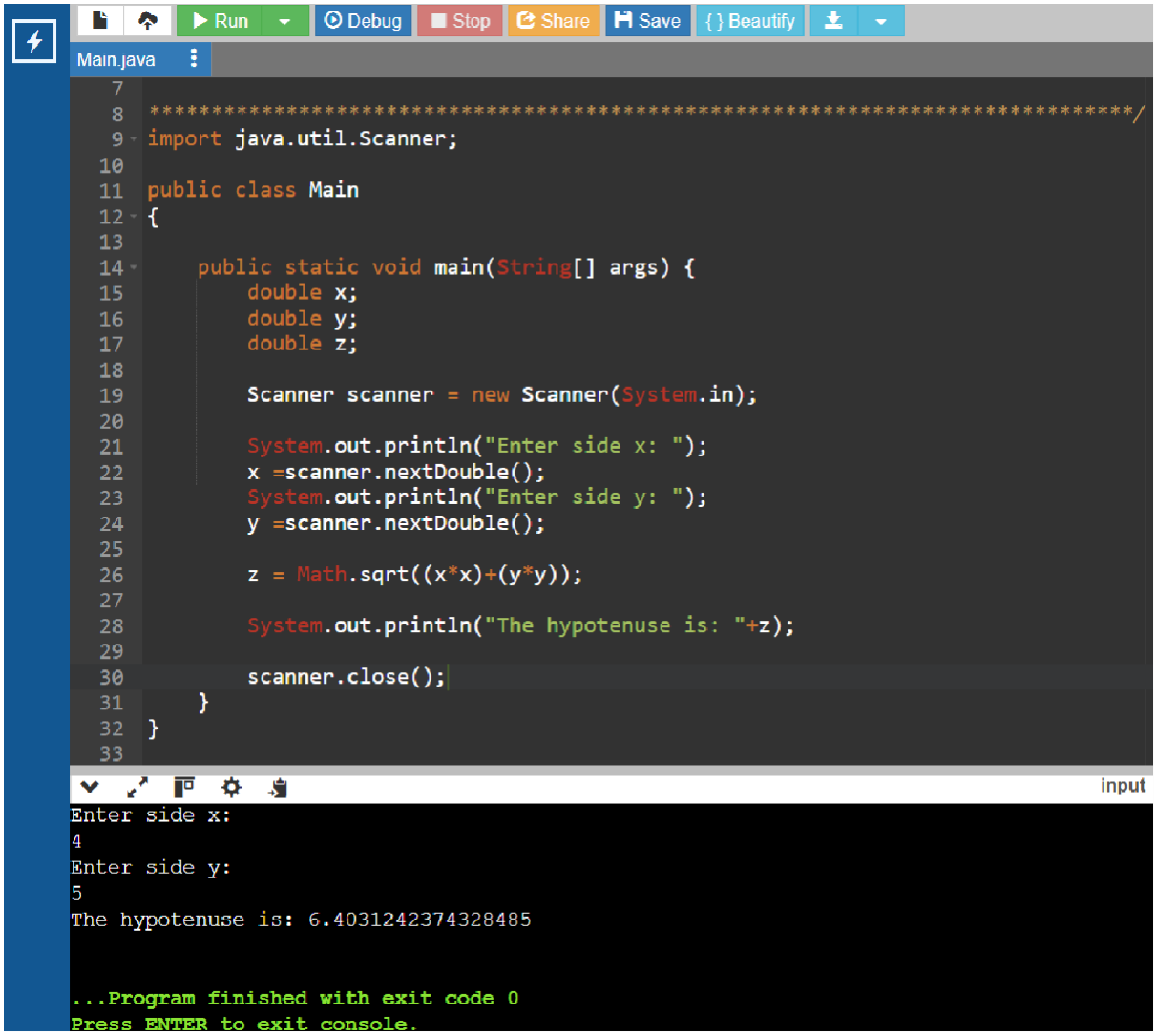
4.a. JAVA PROGRAME TO FIND HYPOTENUSE OF A TRIANGLE:-

AIM:- To Find Hypotenuse of a Triangle

JAVA CODE:-

```
import java.util.Scanner;


public class Main
{


	public static void main(String[] args) {
		double x;
		double y;
		double z;


		Scanner scanner = new Scanner(System.in);


		System.out.println("Enter side x: ");
		x =scanner.nextDouble();
	   System.out.println("Enter side y: ");
	   y =scanner.nextDouble();


	   z = Math.sqrt((x*x)+(y*y));


	   System.out.println("The hypotenuse is: "+z);


	   scanner.close();
	}
}
```

SCREENSHOT WITH OUTPUT:-



4.b.JAVA PROGRAME WITH SWITCH CASE:-

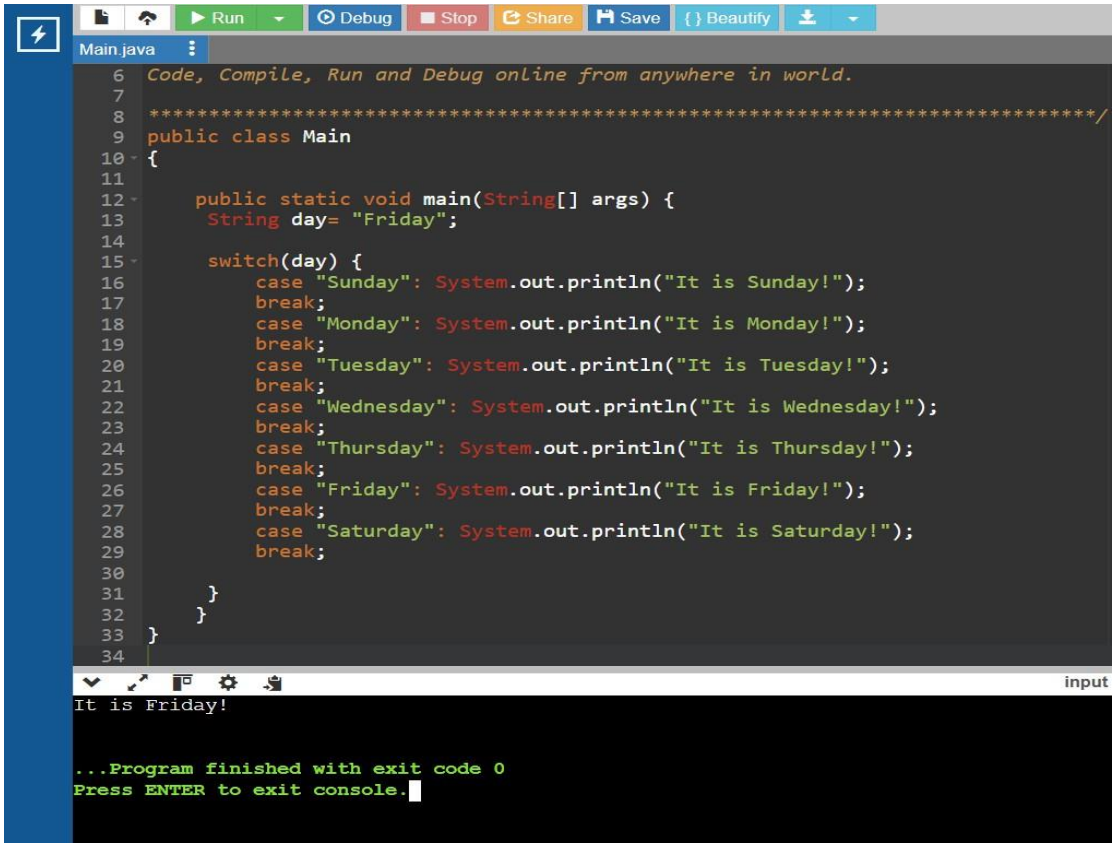
AIM:- To Explore the switch case Element In the java programe

JAVA CODE:-

```
public class Main

{

        public static void main(String[] args) {
```

```
        String day= "Friday";


        switch(day) {
           case "Sunday": System.out.println("It is Sunday!");
           break;
           case "Monday": System.out.println("It is Monday!");
           break;
           case "Tuesday": System.out.println("It is Tuesday!");
           break;
           case "Wednesday": System.out.println("It is Wednesday!");
           break;
           case "Thursday": System.out.println("It is Thursday!");
           break;
           case "Friday": System.out.println("It is Friday!");
           break;
           case "Saturday": System.out.println("It is Saturday!");
           break;


        }
       }
}
```

SCREENSHOT WITH OUTPUT:-



4.c.JAVA PROGRAME USING IF ELSE STATEMENTS:-

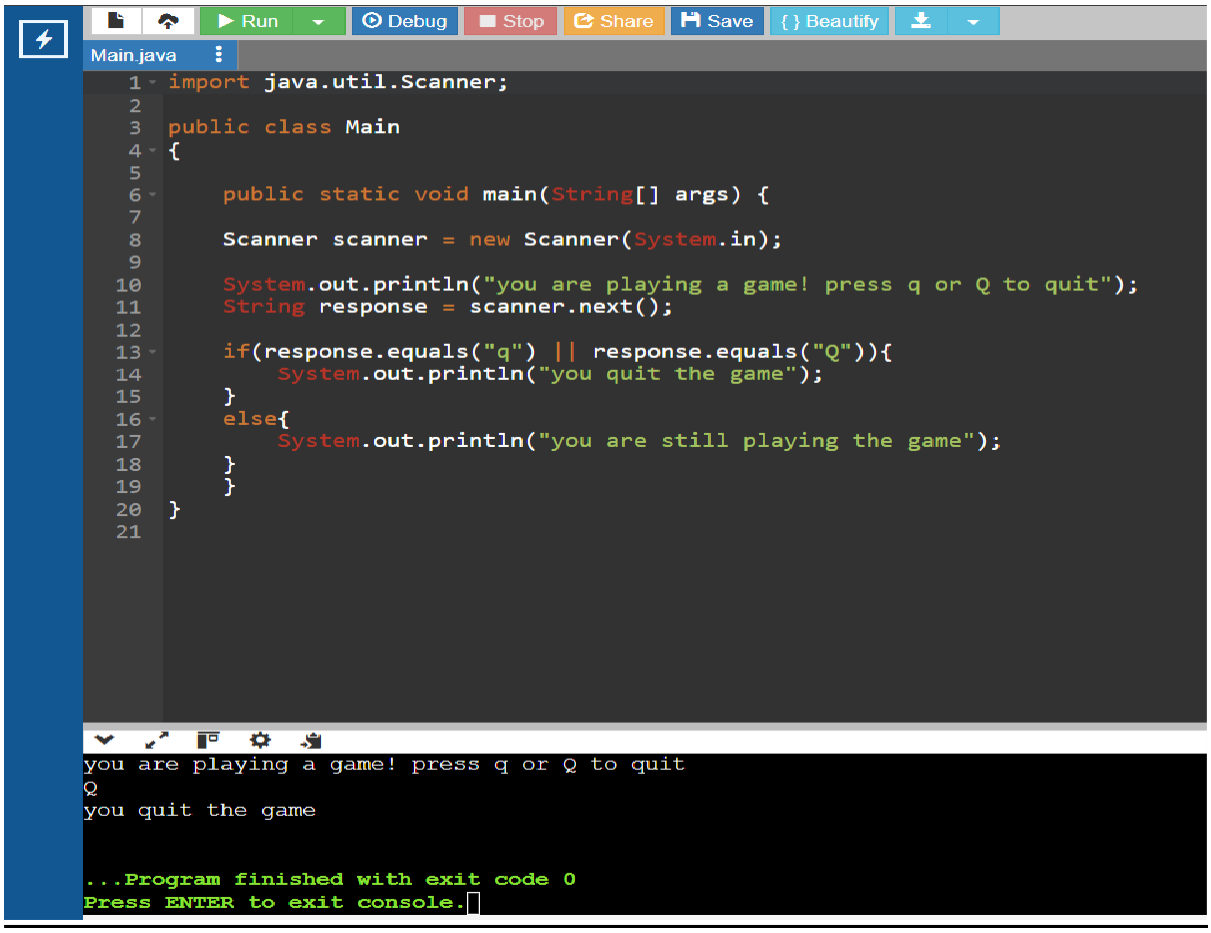
AIM:- To Decode the If else statements in java code

JAVA CODE:-

```
import java.util.Scanner;


public class Main

{

        public static void main(String[] args) {


        Scanner scanner = new Scanner(System.in);
```

```
        System.out.println("you are playing a game! press q or Q to quit");
        String response = scanner.next();

        if(response.equals("q") || response.equals("Q")){
           System.out.println("you quit the game");
        }
        else{
           System.out.println("you are still playing the game");
        }
        }
}
```

SCREENSHOT WITH OUTPUT:-



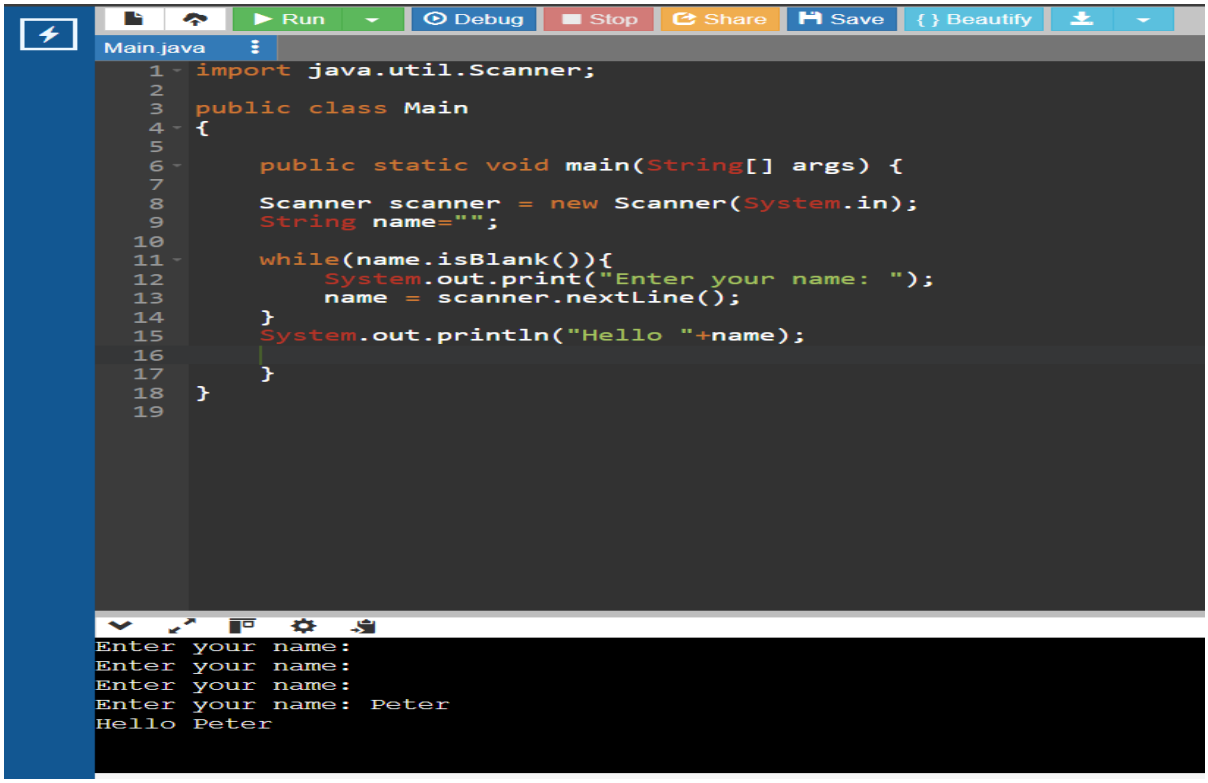
4.D.JAVA PROGRAME USING WHILE LOOP:-

AIM:- To Decode the while loops in java code

JAVA CODE:-

```
import java.util.Scanner;


public class Main
{

	public static void main(String[] args) {


	Scanner scanner = new Scanner(System.in);
	String name="";


	while(name.isBlank()){
	   System.out.print("Enter your name: ");
	   name = scanner.nextLine();
	}
	System.out.println("Hello "+name);


	}
}
```

SCREENSHOT WITH OUTPUT:-



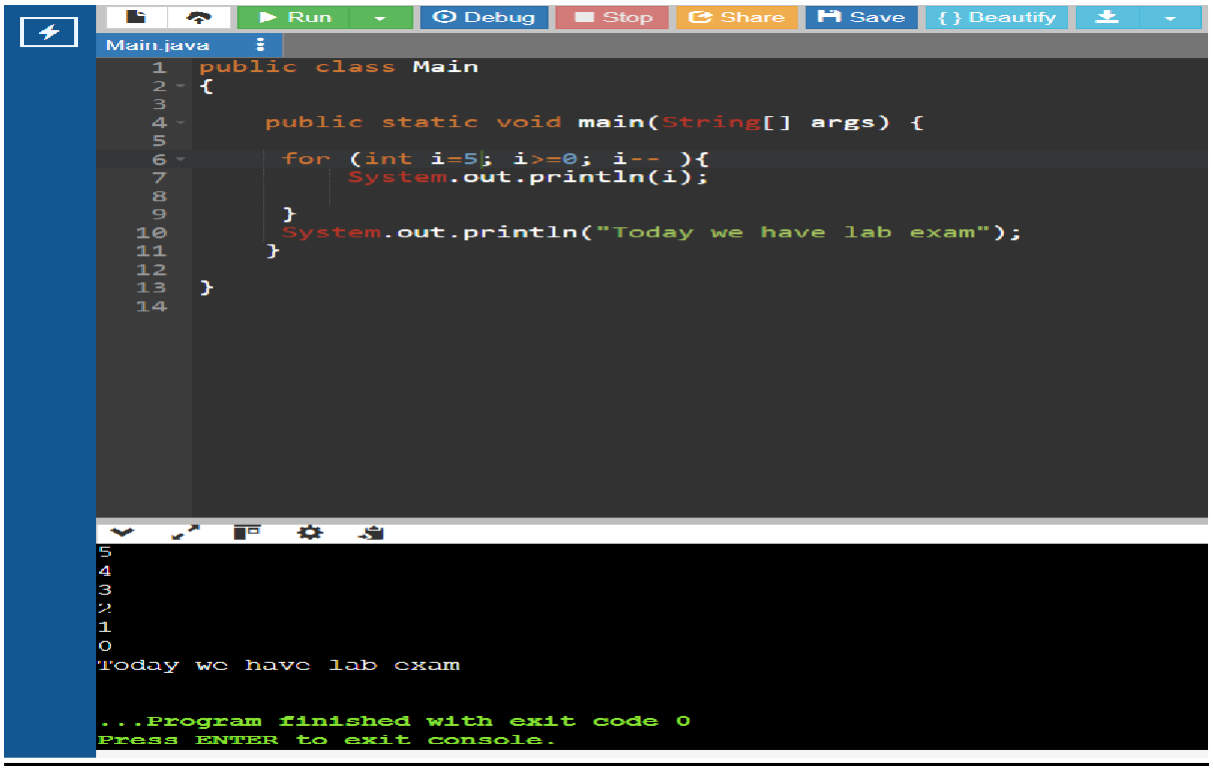
4.e.JAVA PROGRAME USING FOR LOOP:-

AIM:- To Decode the For loops in java code

JAVA CODE:-

```
public class Main
{

        public static void main(String[] args) {

   for (int i=5; i>=0; i-- ){
      System.out.println(i);

   }
   System.out.println("Today we have lab exam");
        }
}
```

SCREENSHOT WITH OUTPUT:-



4.f.JAVA PROGRAME FOR SHAPE OF A SYMBOL:-

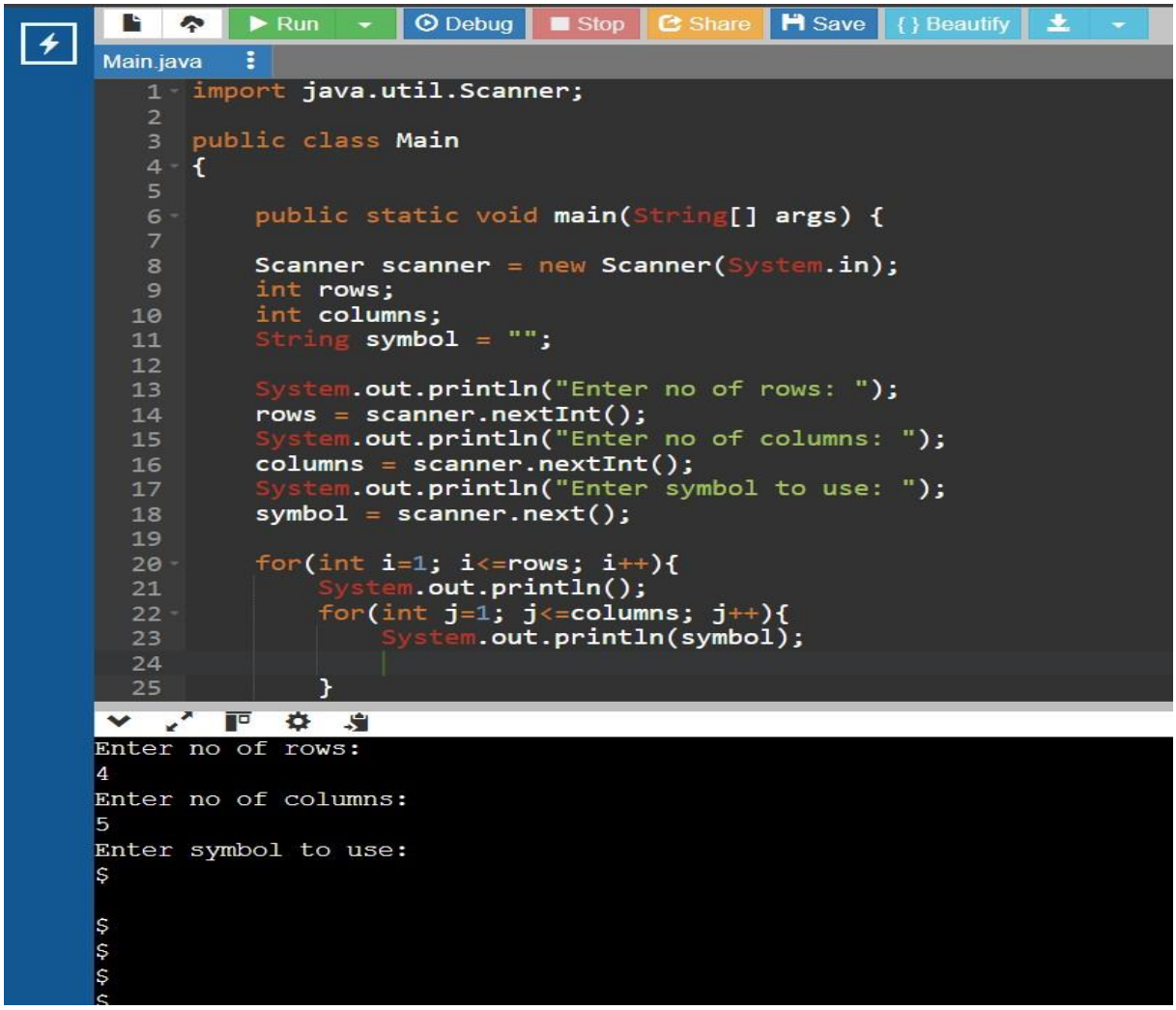
AIM:- To Find the shape of any symbol using java programe.

JAVA CODE:-

```
import java.util.Scanner;


public class Main

{


        public static void main(String[] args) {


   Scanner scanner = new Scanner(System.in);

   int rows;

   int columns;
```

```
    String symbol = "";

    System.out.println("Enter no of rows: ");
    rows = scanner.nextInt();
    System.out.println("Enter no of columns: ");
    columns = scanner.nextInt();
    System.out.println("Enter symbol to use: ");
    symbol = scanner.next();

    for(int i=1; i<=rows; i++){
        System.out.println();
        for(int j=1; j<=columns; j++){
            System.out.println(symbol);

        }
    }
            }
}
```

SCREENSHOT WITH OUTPUT:-



4.g.JAVA PROGRAME FOR FACTORIAL OF A NUMBER:-

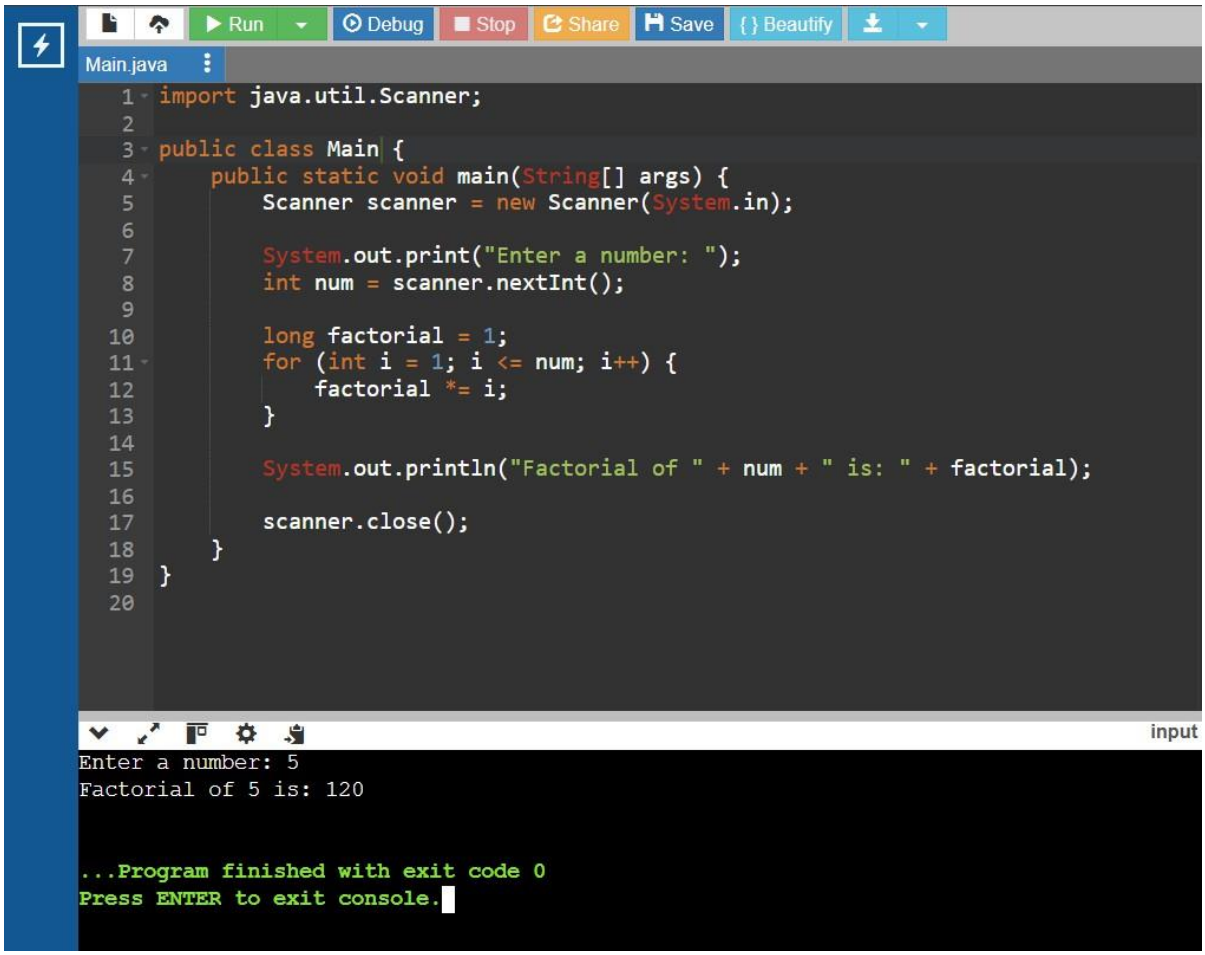
AIM:- To Find the Factorial of a Number

JAVA CODE:-

```
import java.util.Scanner;


public class Main {
   public static void main(String[] args) {
      Scanner scanner = new Scanner(System.in);


      System.out.print("Enter a number: ");
      int num = scanner.nextInt();
```

```
        long factorial = 1;
        for (int i = 1; i <= num; i++) {
            factorial *= i;
        }

        System.out.println("Factorial of " + num + " is: " + factorial);

        scanner.close();
    }
}
```

SCREENSHOT WITH OUTPUT:-



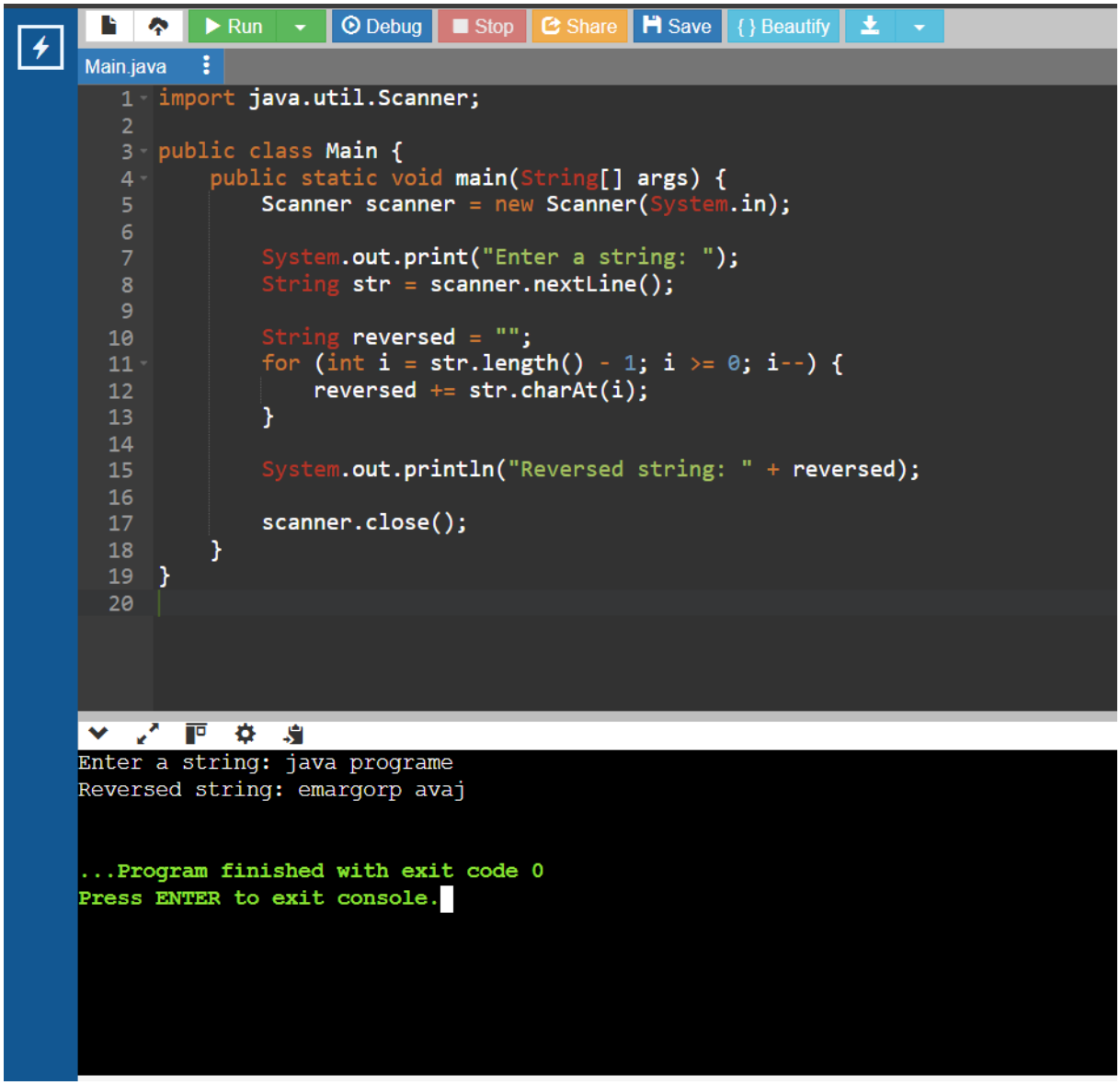
4.h.JAVA PROGRAME FOR REVERSING A STRING:-

AIM:- To Reverse any type of string like names or Anything.

JAVA CODE:-

```
import java.util.Scanner;


public class Main {
   public static void main(String[] args) {
      Scanner scanner = new Scanner(System.in);


      System.out.print("Enter a string: ");
      String str = scanner.nextLine();


      String reversed = "";
      for (int i = str.length() - 1; i >= 0; i--) {
         reversed += str.charAt(i);
      }


      System.out.println("Reversed string: " + reversed);


      scanner.close();
   }
}
```

SCREENSHOT WITH OUTPUT:-



4.i.JAVA PROGRAME TO IDENTIFY PRIME NUMBER:-

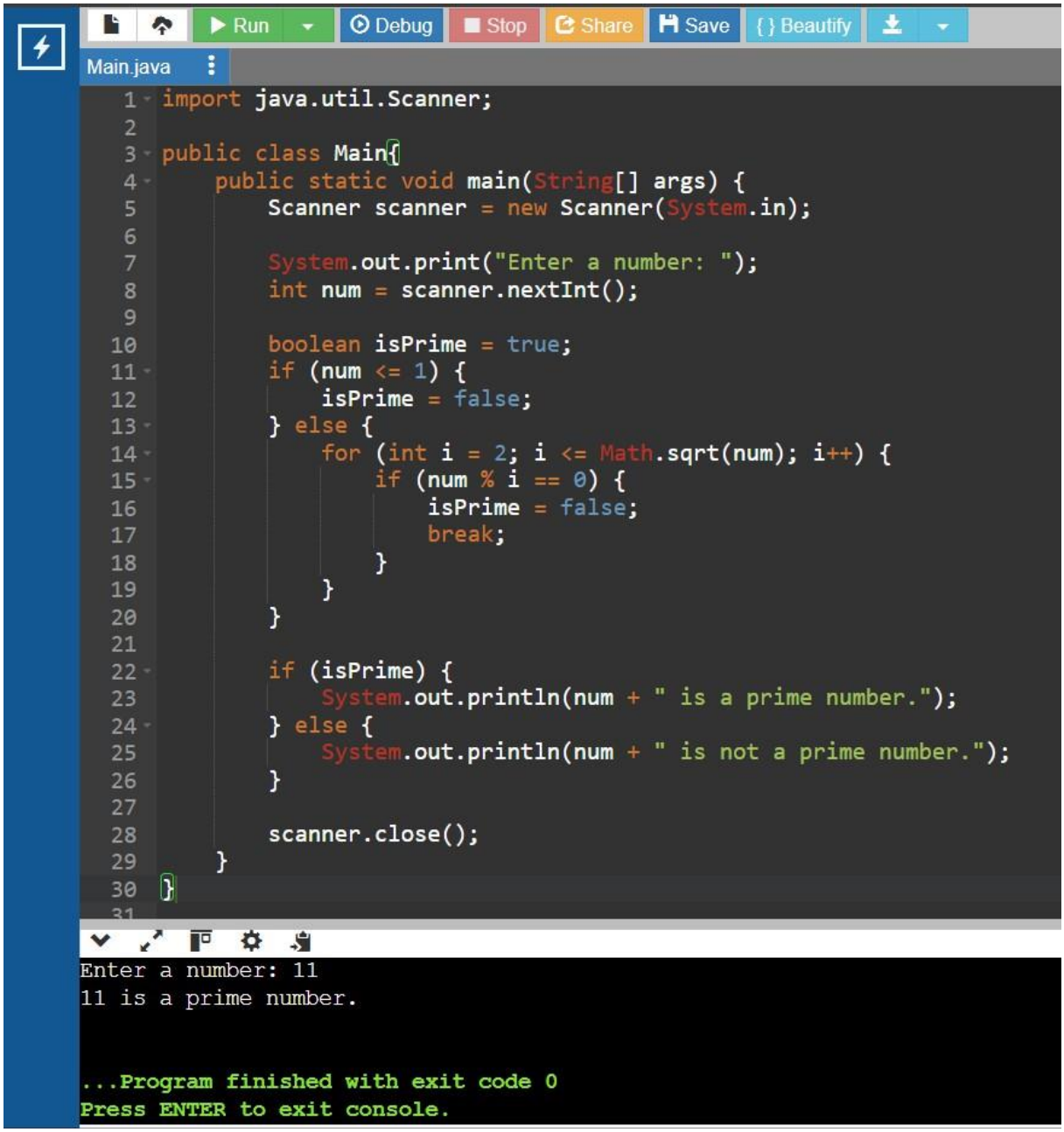
AIM:- To Identify weather the given number Is prime number or not.

JAVA CODE:-

```
import java.util.Scanner;


public class Main{
   public static void main(String[] args) {
      Scanner scanner = new Scanner(System.in);


      System.out.print("Enter a number: ");
```

```
        int num = scanner.nextInt();

        boolean isPrime = true;
        if (num <= 1) {
            isPrime = false;
        } else {
            for (int i = 2; i <= Math.sqrt(num); i++) {
                if (num % i == 0) {
                    isPrime = false;
                    break;
                }
            }
        }

        if (isPrime) {
            System.out.println(num + " is a prime number.");
        } else {
            System.out.println(num + " is not a prime number.");
        }

        scanner.close();
    }
}
```

SCREENSHOT WITH OUTPUT:-



4.j.JAVA PROGRAME FOR PALINDROME:-

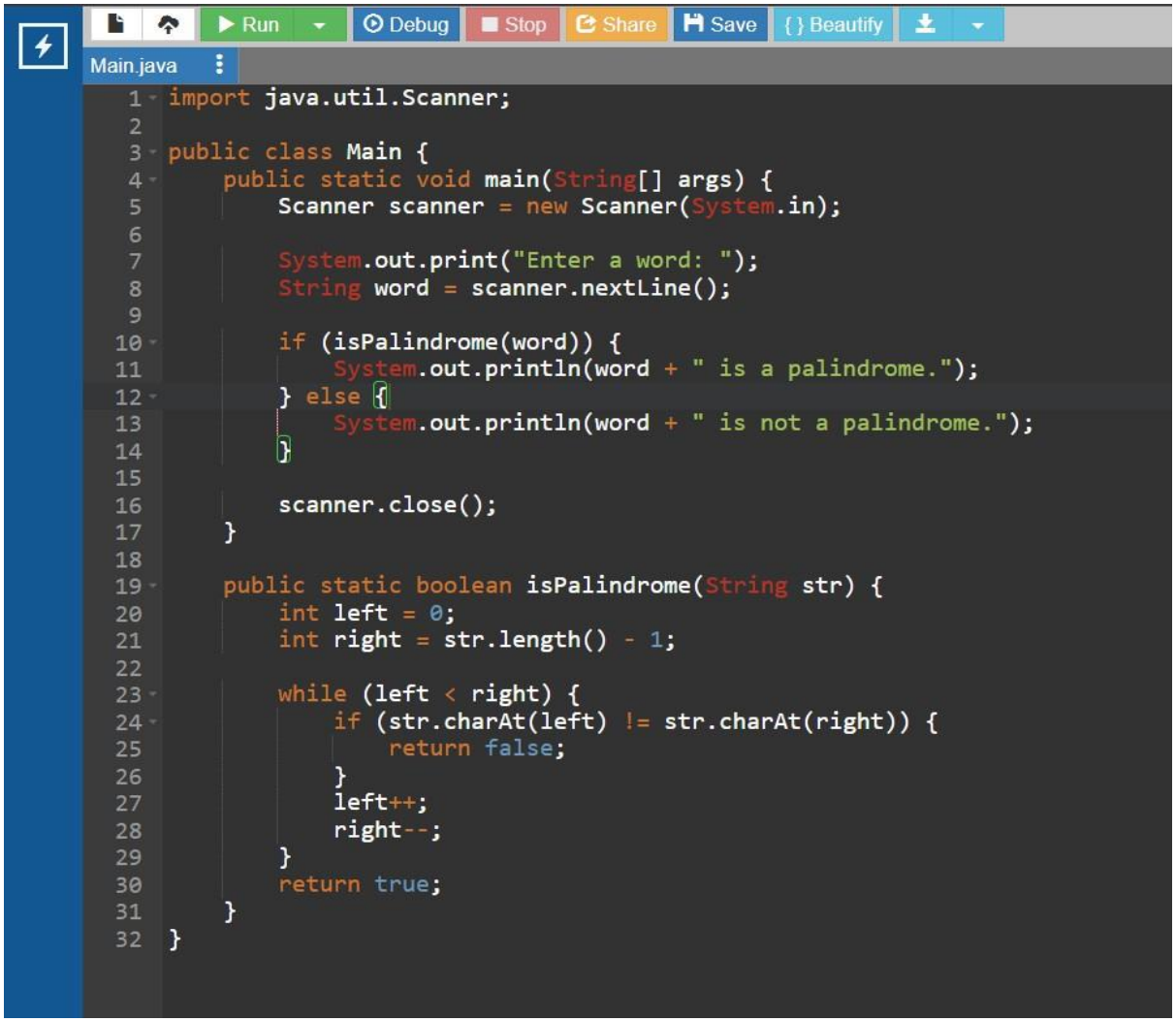
AIM:- To find the palindrome of a given string.

JAVA CODE:-

```
import java.util.Scanner;


public class Main {

   public static void main(String[] args) {

      Scanner scanner = new Scanner(System.in);
```

```
        System.out.print("Enter a word: ");
        String word = scanner.nextLine();

        if (isPalindrome(word)) {
            System.out.println(word + " is a palindrome.");
        } else {
            System.out.println(word + " is not a palindrome.");
        }

        scanner.close();
    }

    public static boolean isPalindrome(String str) {
        int left = 0;
        int right = str.length() - 1;

        while (left < right) {
            if (str.charAt(left) != str.charAt(right)) {
                return false;
            }
            left++;
            right--;
        }
        return true;
    }
}
```

SCREENSHOT OF CODE:-



OUTPUT:-

```
Enter a word: ABCDCBA
ABCDCBA is a palindrome.


...Program finished with exit code 0
Press ENTER to exit console.
```