



**SCHOOL OF  
COMPUTING**

# **LAB RECORD**

**23CSE111-Object Oriented Programming**

*Submitted by*

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**Bachelor of technology**

**In**

**Computer Science and Engineering**

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Amrita School of Computing

**CHENNAI**

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SCHOOL OF  
COMPUTING

**AMRITA VISHWA VIDYAPEETHAM**  
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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.U4CSE24136 –P.GEETESH** 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 13/03/2025

Internal Examiner 1   Internal Examiner 2

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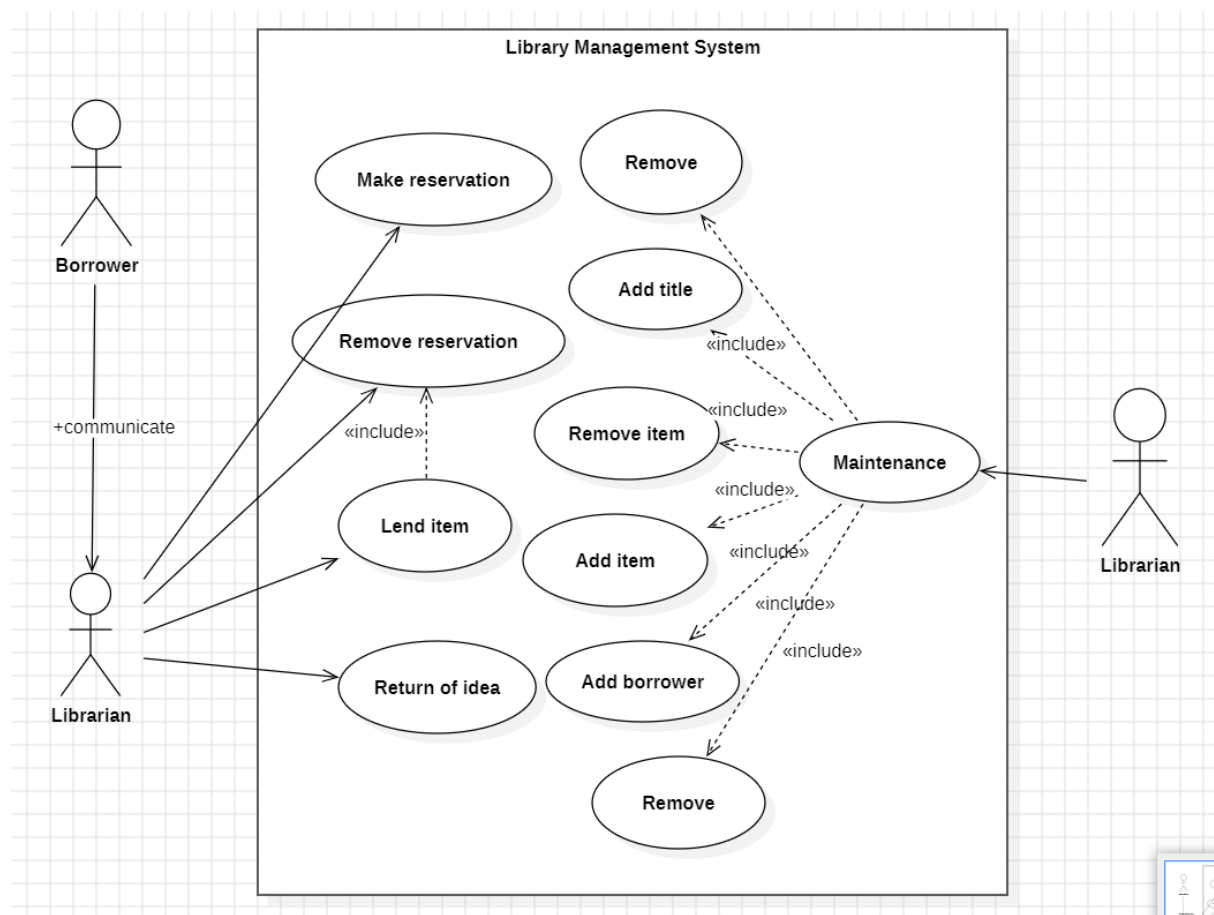
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# 1.UML Diagrams (Library Management System)

a)

**Aim:** To demonstrate Use case diagram of Library Management System

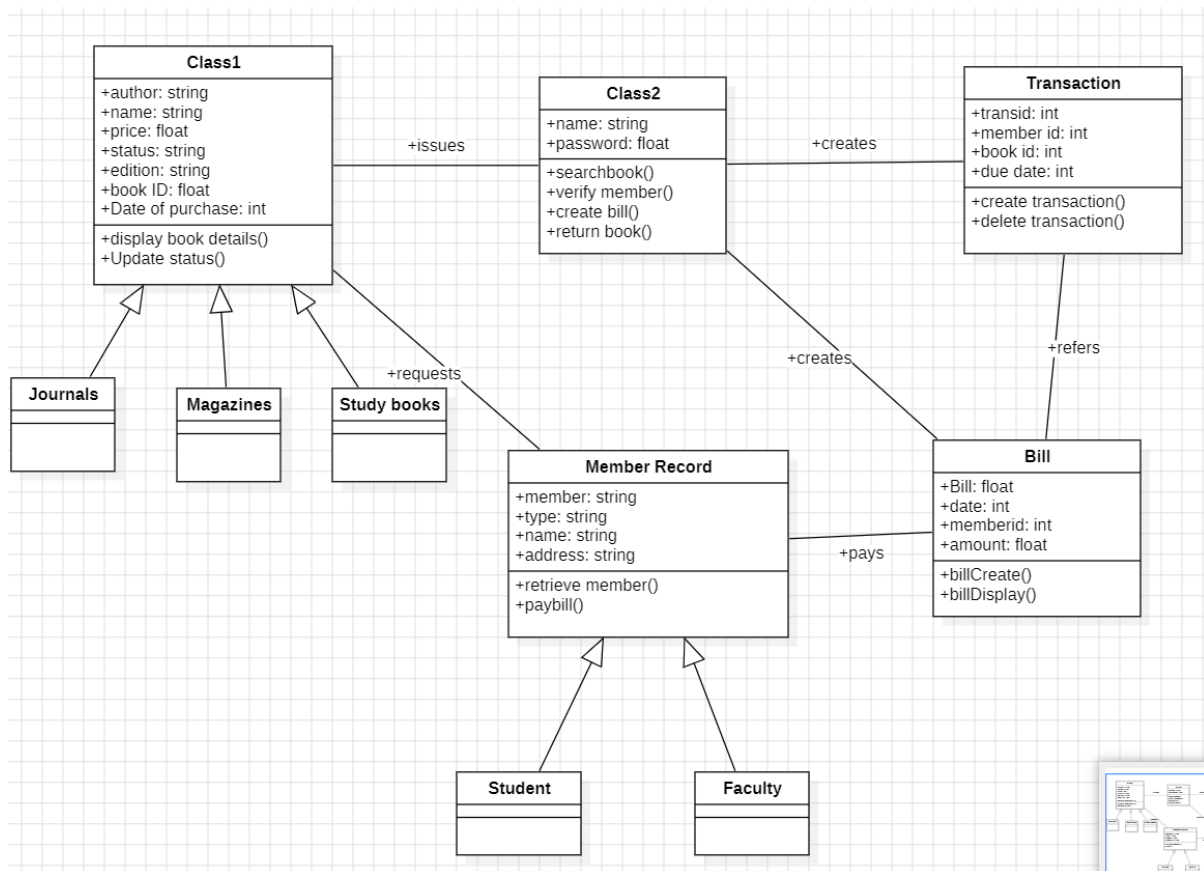
**Diagram:**



b)

**Aim:** To demonstrate Class diagram of Library Management System

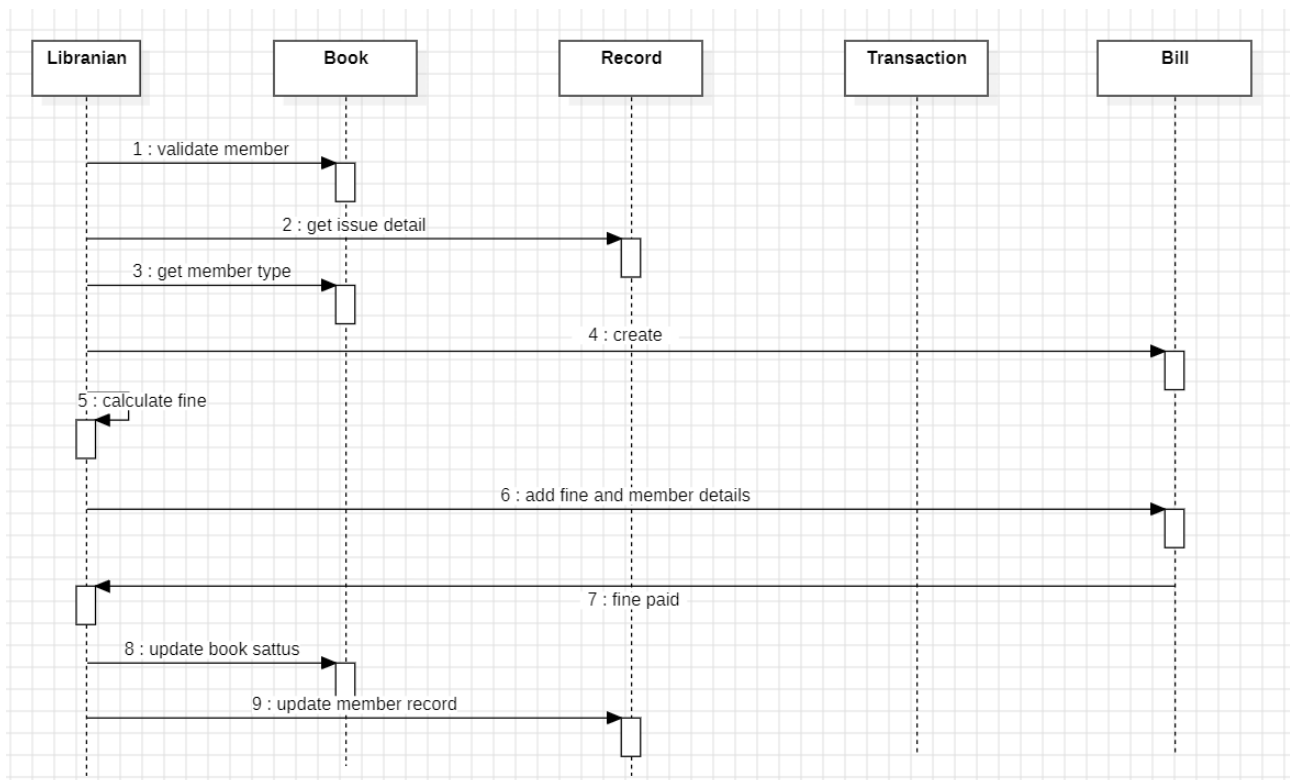
**Diagram:**



c)

**Aim:** To demonstrate Sequence diagram of Library Management System

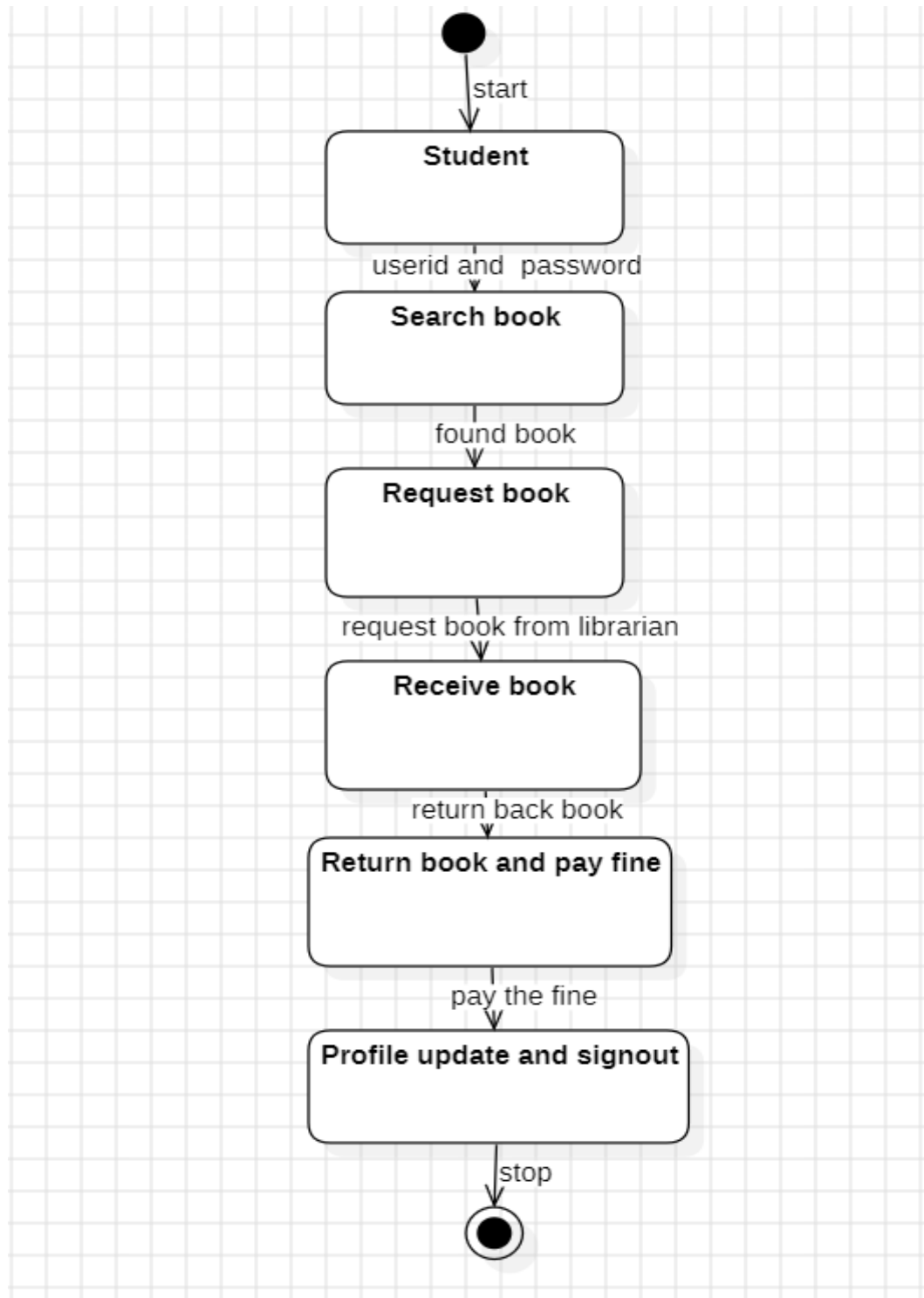
**Diagram:**



d)

**Aim:** To demonstrate State diagram of Library Management System

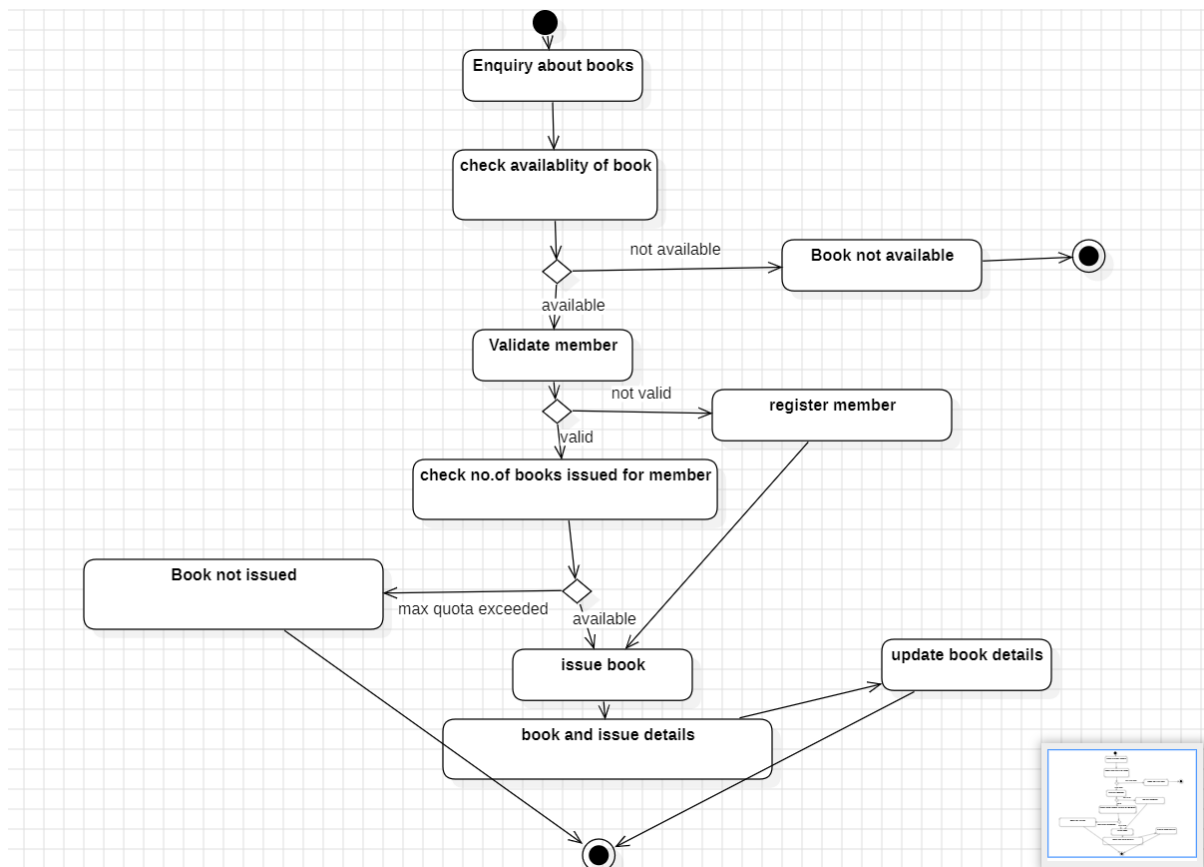
**Diagram:**



e)

**Aim:** To demonstrate Activity diagram of Library Management System

**Diagram:**



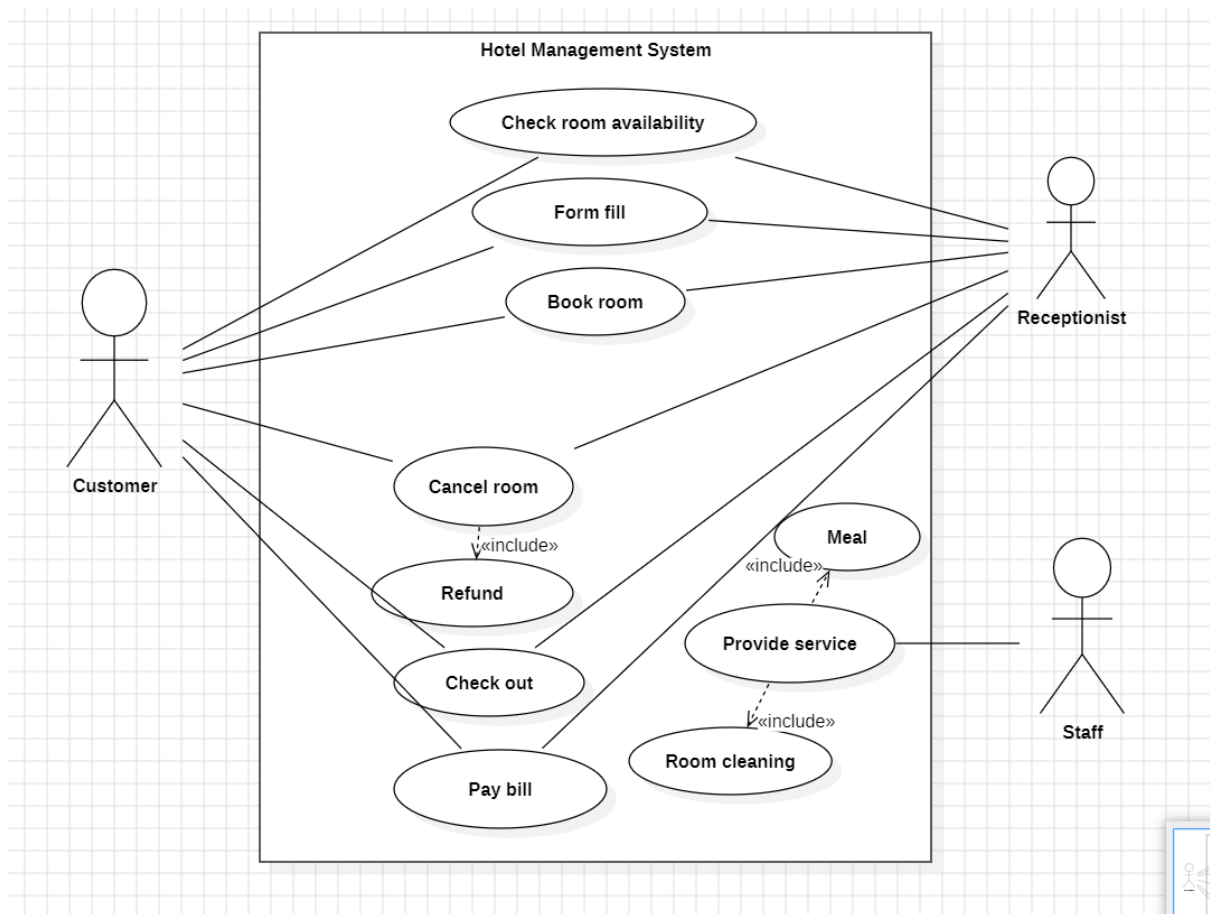


## 2.UML Diagrams (Hotel Management System)

a)

**Aim:** To demonstrate Use Case diagram of Hotel Management System

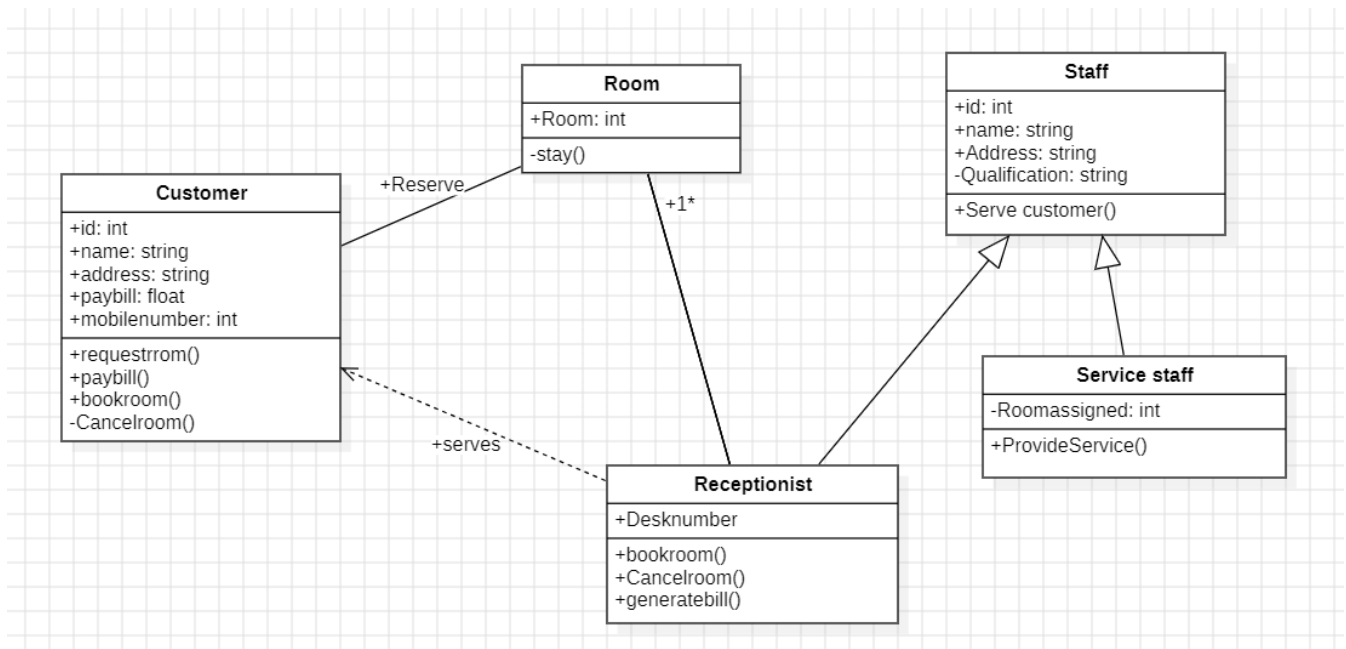
**Diagram:**



b)

**Aim:** To demonstrate Class diagram of Hotel Management System

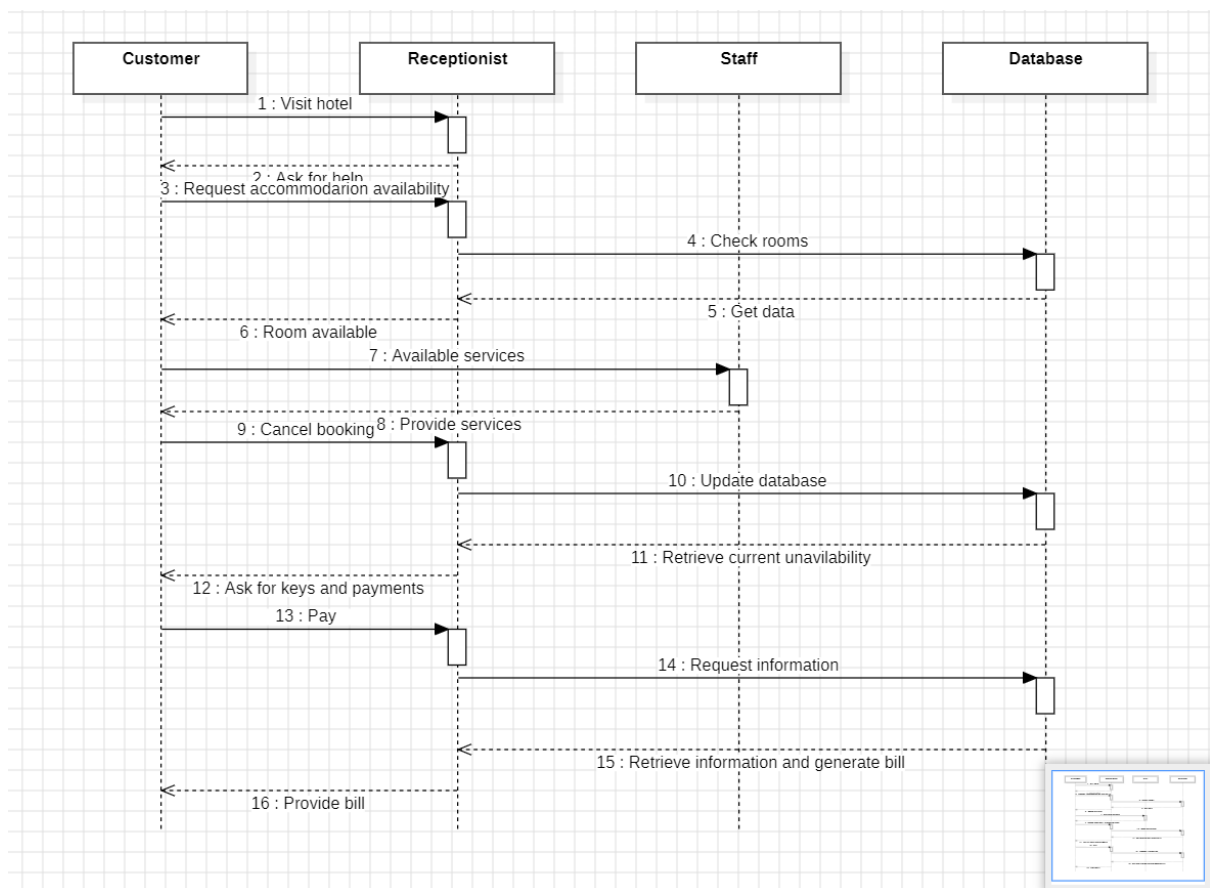
**Diagram:**



c)

**Aim:** To demonstrate Sequence diagram of Hotel Management System

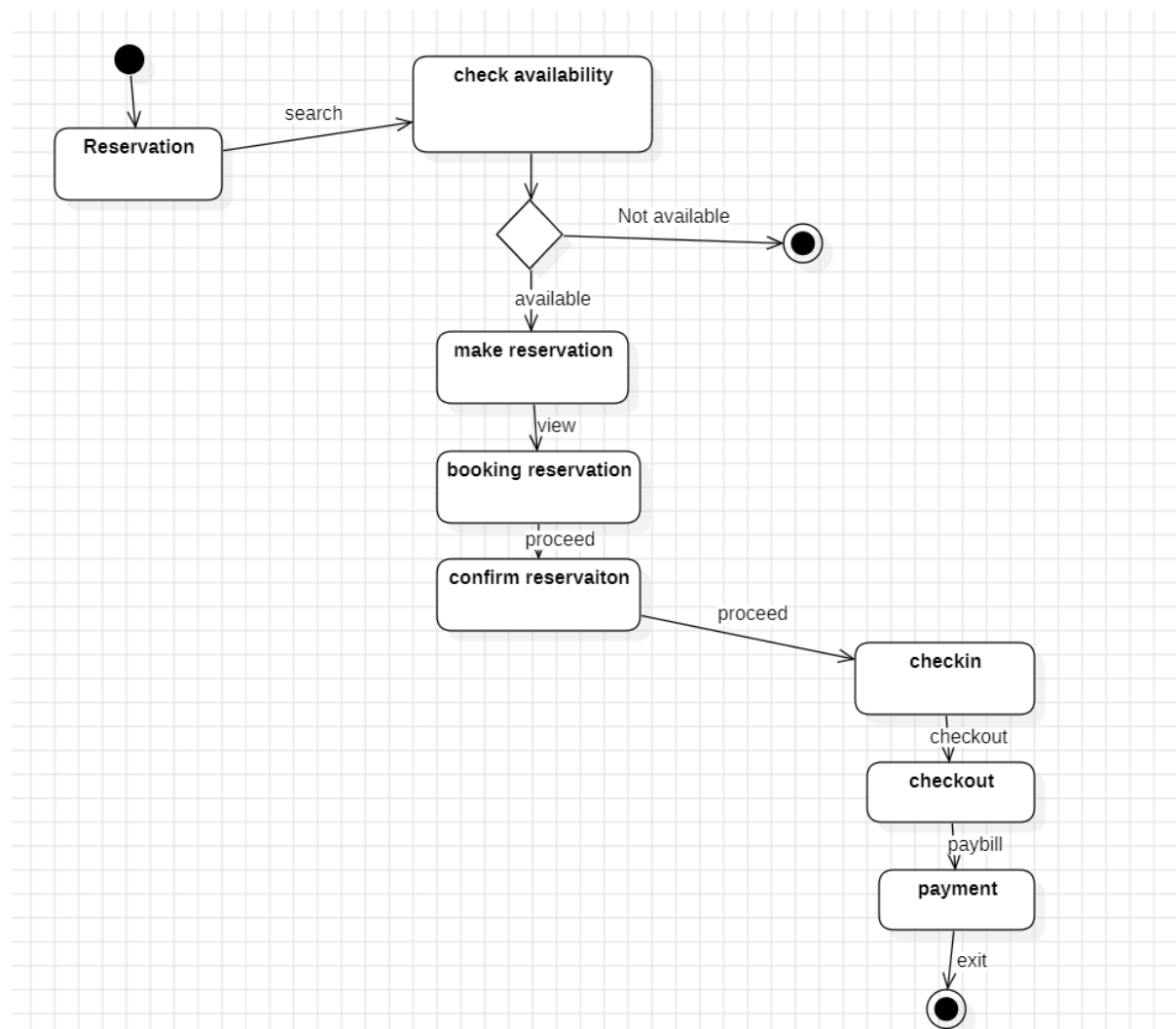
**Diagram:**



d)

**Aim:** To demonstrate State diagram of Hotel Management System

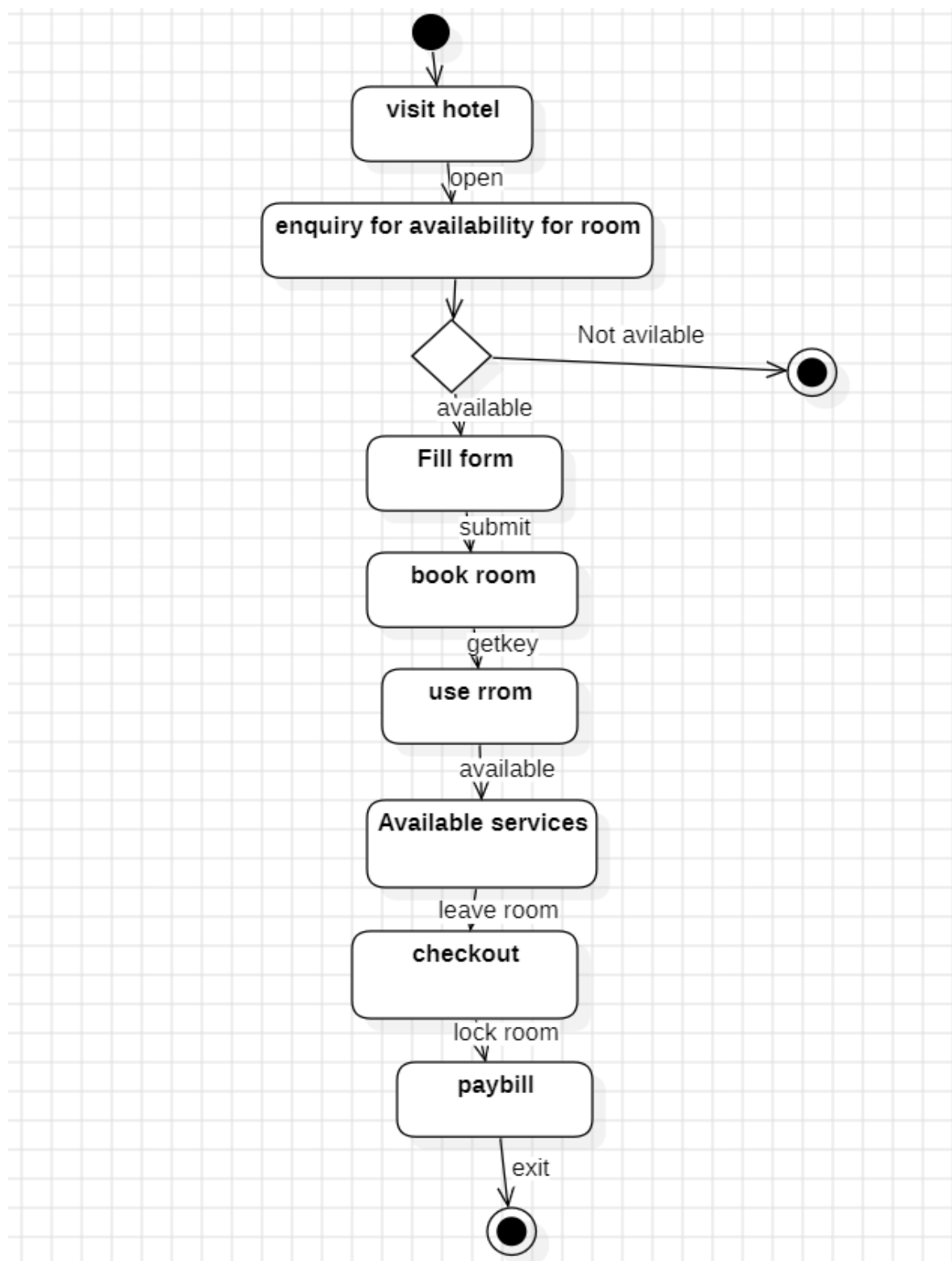
**Diagram:**



e)

**Aim:** To demonstrate Activity diagram of Hotel Management System

**Diagram:**



### 3. Basic Java Programs

a)

**Code:**

```
import java.util.Scanner;

public class EvenOrOdd {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

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

        int num = scanner.nextInt();

        if (num % 2 == 0) {

            System.out.println(num + " is Even");

        } else {

            System.out.println(num + " is Odd");

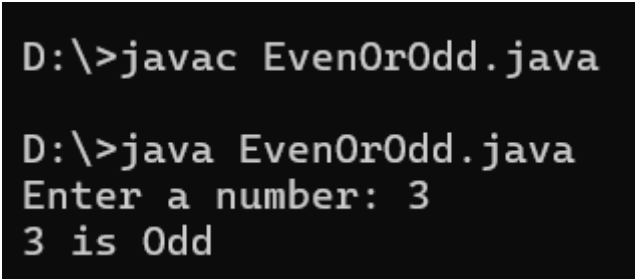
        }

        scanner.close();

    }

}
```

**Output:**



```
D:\>javac EvenOrOdd.java

D:\>java EvenOrOdd.java
Enter a number: 3
3 is Odd
```

**b)**

**Code:**

```
import java.util.Scanner;

public class Factorial {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

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

        int num = scanner.nextInt();

        int fact = 1;

        for (int i = 1; i <= num; i++) {

            fact *= i;

        }

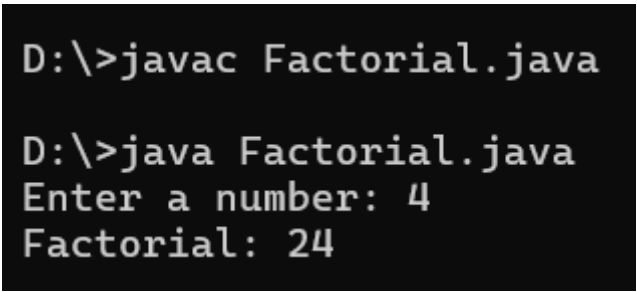
        System.out.println("Factorial: " + fact);

        scanner.close();

    }

}
```

**Output:**



```
D:\>javac Factorial.java

D:\>java Factorial.java
Enter a number: 4
Factorial: 24
```

c)

**Code:**

```
import java.util.Scanner;

public class NumberGuess {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        int secret = 7, guess;

        do {

            System.out.print("Guess the number: ");

            guess = scanner.nextInt();

            if (guess > secret) {

                System.out.println("Too high!");

            } else if (guess < secret) {

                System.out.println("Too low!");

            }

        } while (guess != secret);

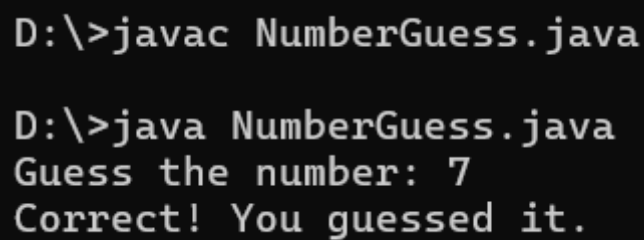
        System.out.println("Correct! You guessed it.");

        scanner.close();

    }

}
```

**Output:**



```
D:\>javac NumberGuess.java

D:\>java NumberGuess.java
Guess the number: 7
Correct! You guessed it.
```



**d)**

**Code:**

```
import java.util.Scanner;

public class Palindrome {

    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);

        }

        if (str.equals(reversed)) {

            System.out.println("It's a palindrome!");

        } else {

            System.out.println("Not a palindrome.");

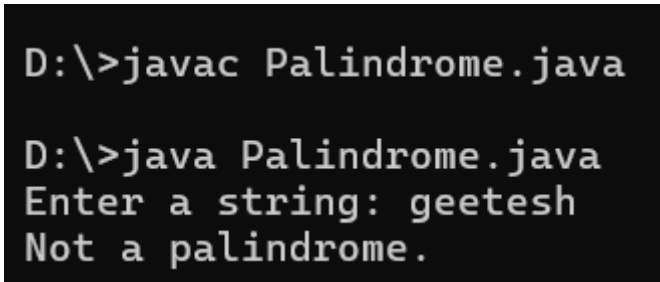
        }

        scanner.close();

    }

}
```

**Output:**



```
D:\>javac Palindrome.java

D:\>java Palindrome.java
Enter a string: geetesh
Not a palindrome.
```

e)

**Code:**

```
import java.util.Scanner;

public class PrintNumbers {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

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

        int n = scanner.nextInt();

        for (int i = 1; i <= n; i++) {

            System.out.println(i);

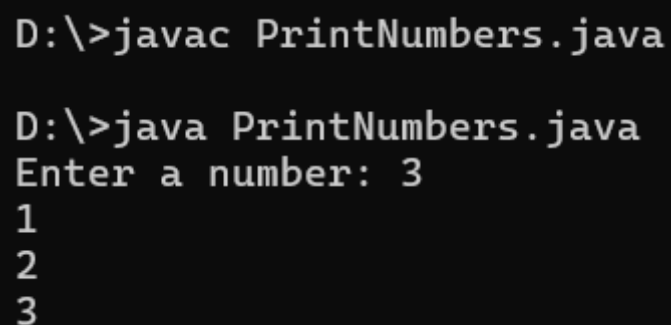
        }

        scanner.close();

    }

}
```

**Output:**



```
D:\>javac PrintNumbers.java

D:\>java PrintNumbers.java
Enter a number: 3
1
2
3
```

f)

**Code:**

```
import java.util.Scanner;

public class ReverseNumber {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

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

        int num = scanner.nextInt();

        int reversed = 0;

        while (num != 0) {

            reversed = reversed * 10 + num % 10;

            num /= 10;

        }

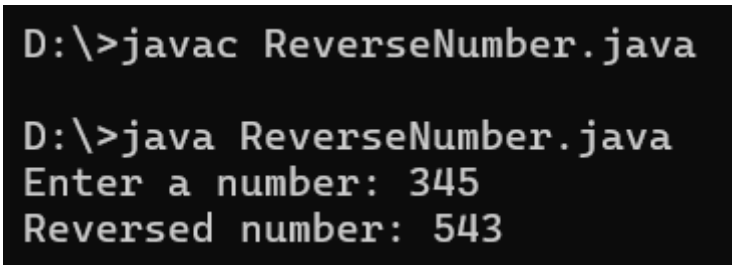
        System.out.println("Reversed number: " + reversed);

        scanner.close();

    }

}
```

**Output:**



```
D:\>javac ReverseNumber.java

D:\>java ReverseNumber.java
Enter a number: 345
Reversed number: 543
```

g)

**Code:**

```
import java.util.Scanner;

public class ReverseString {

    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);

        }

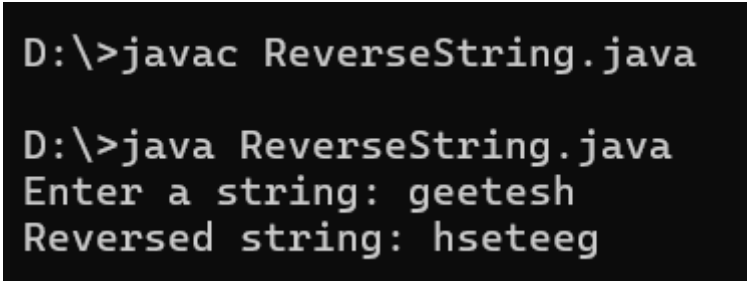
        System.out.println("Reversed string: " + reversed);

        scanner.close();

    }

}
```

**Output:**



```
D:\>javac ReverseString.java

D:\>java ReverseString.java
Enter a string: geetesh
Reversed string: hseteeg
```

**h)**

**Code:**

```
import java.util.Scanner;

public class SumOfDigits {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

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

        int num = scanner.nextInt();

        int sum = 0;

        while (num != 0) {

            sum += num % 10;

            num /= 10;

        }

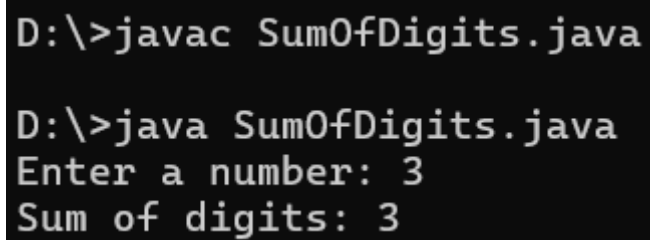
        System.out.println("Sum of digits: " + sum);

        scanner.close();

    }

}
```

**Output:**



```
D:\>javac SumOfDigits.java

D:\>java SumOfDigits.java
Enter a number: 3
Sum of digits: 3
```

i)

**Code:**

```
import java.util.Scanner;

public class TablePrinter {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

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

        int num = scanner.nextInt();

        for (int i = 1; i <= 10; i++) {

            System.out.println(num + " x " + i + " = " + (num * i));

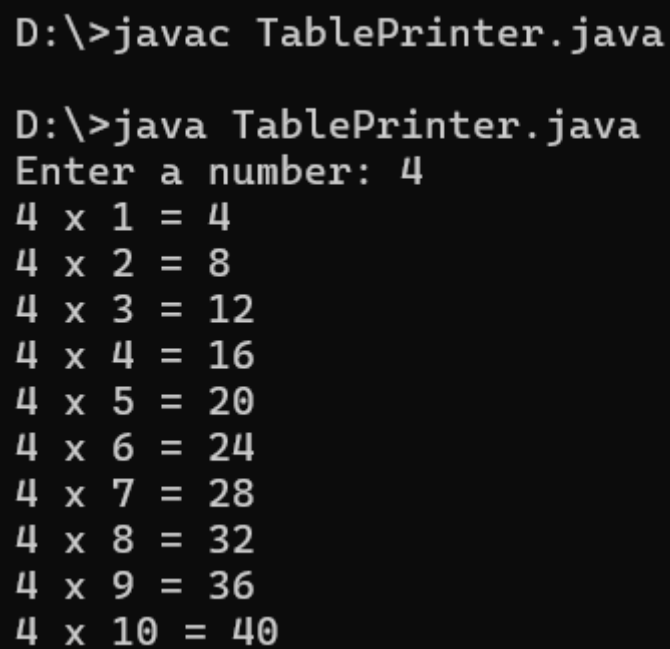
        }

        scanner.close();

    }

}
```

**Output:**



```
D:\>javac TablePrinter.java

D:\>java TablePrinter.java
Enter a number: 4
4 x 1 = 4
4 x 2 = 8
4 x 3 = 12
4 x 4 = 16
4 x 5 = 20
4 x 6 = 24
4 x 7 = 28
4 x 8 = 32
4 x 9 = 36
4 x 10 = 40
```

j)

**Code:**

```
import java.util.Scanner;

public class VowelCounter {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        System.out.print("Enter a string: ");

        String str = scanner.nextLine().toLowerCase();

        int count = 0;

        for (char c : str.toCharArray()) {

            if (c == 'a' || c == 'e' || c == 'i' || c == 'o' || c == 'u') {

                count++;

            }

        }

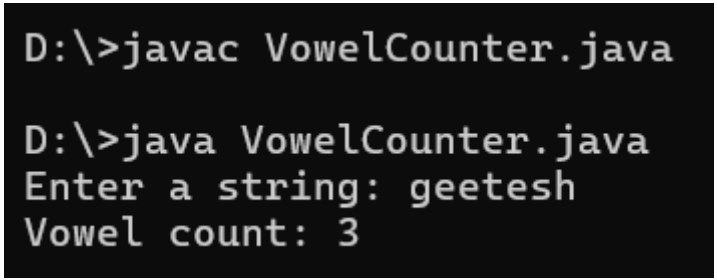
        System.out.println("Vowel count: " + count);

        scanner.close();

    }

}
```

**Output:**



```
D:\>javac VowelCounter.java

D:\>java VowelCounter.java
Enter a string: geetesh
Vowel count: 3
```