



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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CHENNAI

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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.U4CSE24152 – Yerrabolu Venkata Sai Limesh** 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.

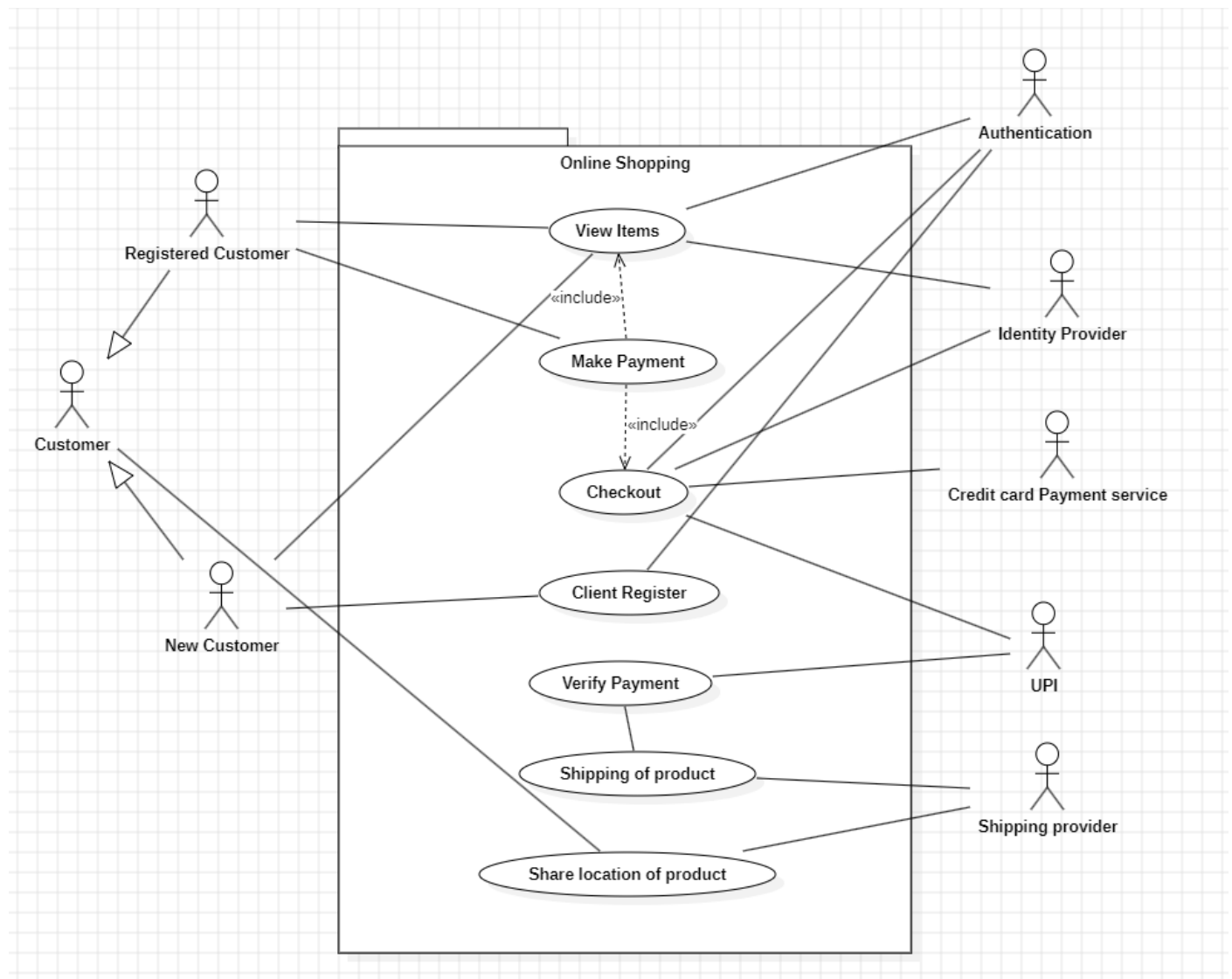
This Lab examination held on 13/03/2025

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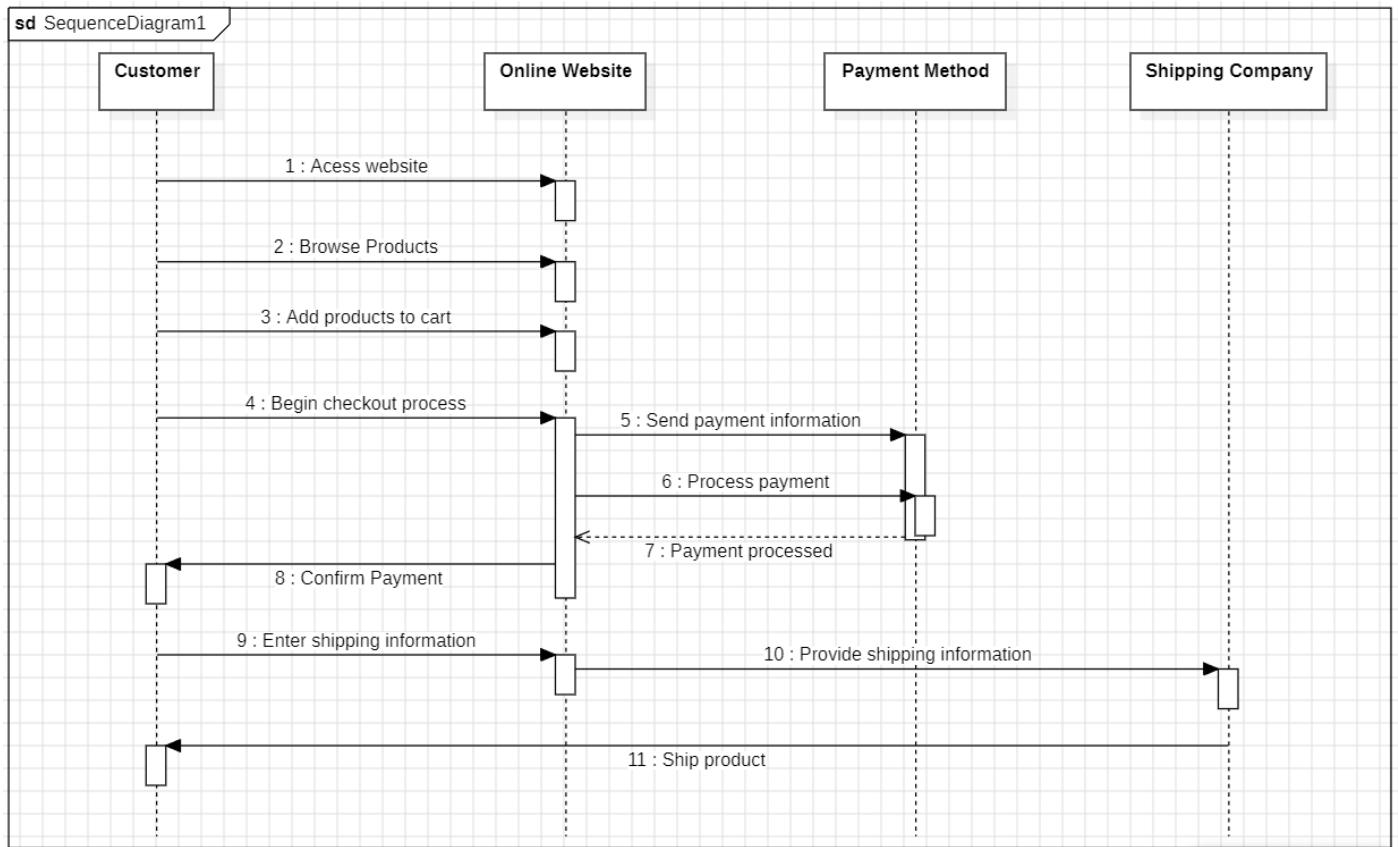
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EXPERIMENT-1(Online Shopping System)

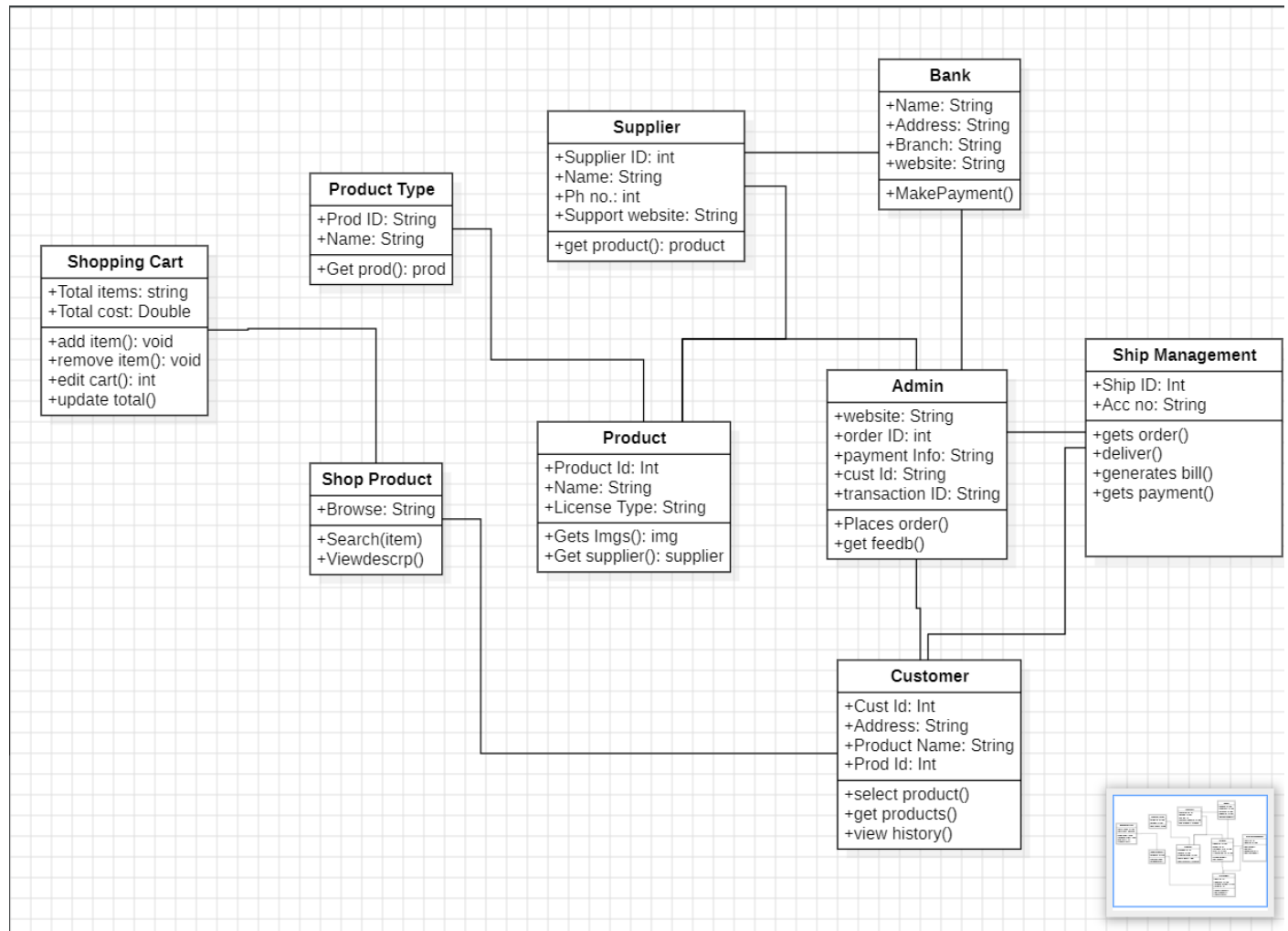
Use Case Diagram:



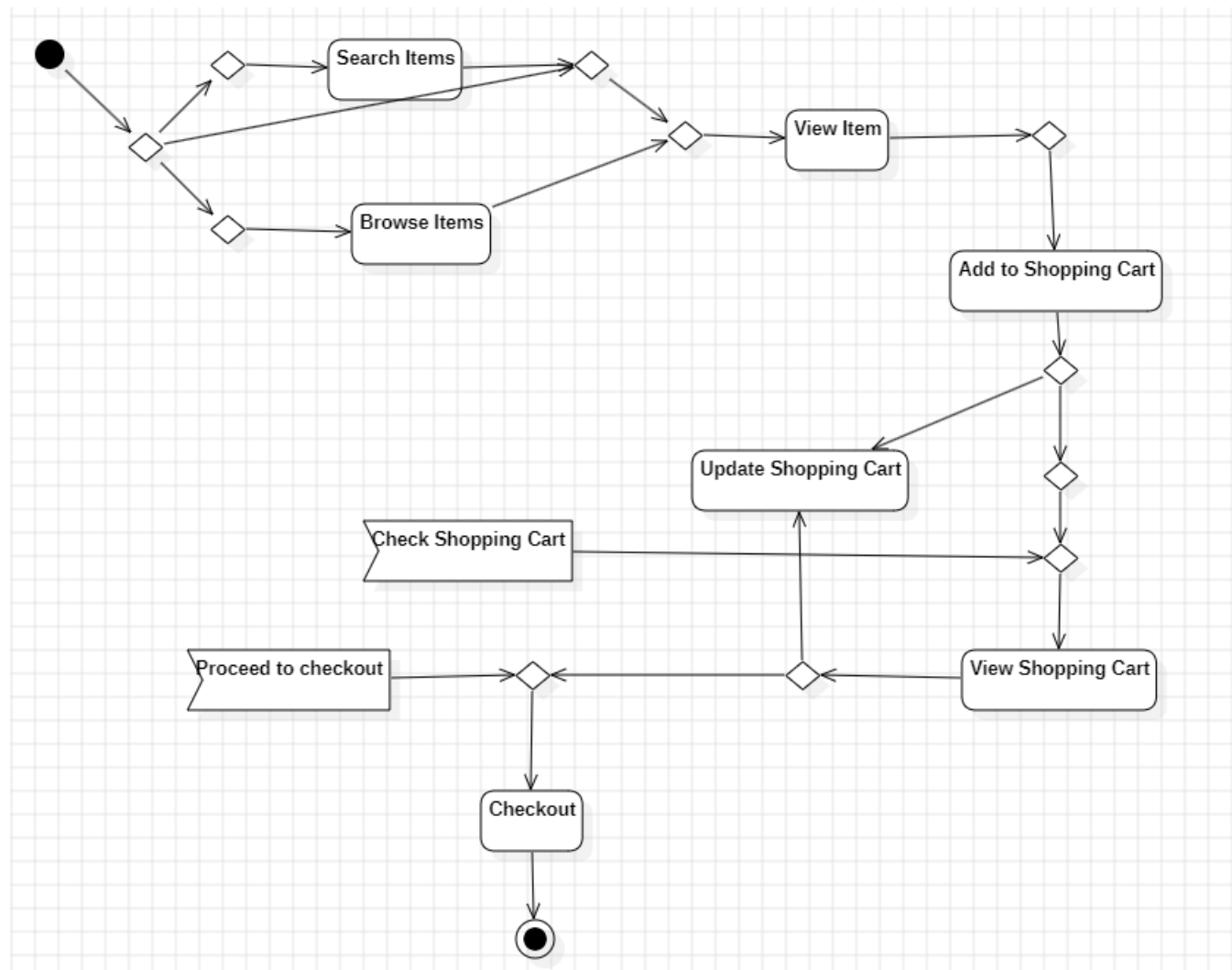
Sequence Diagram:



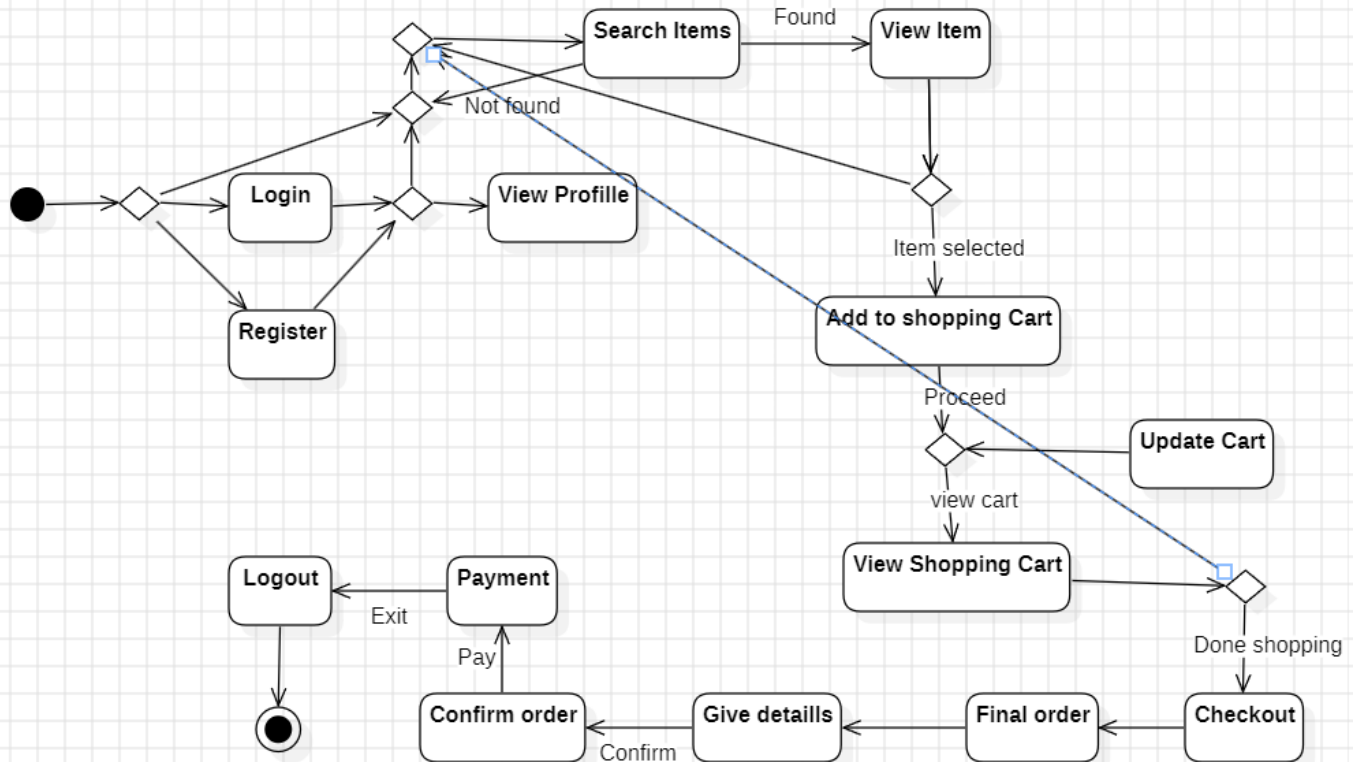
Class Diagram:



Activity Diagram:

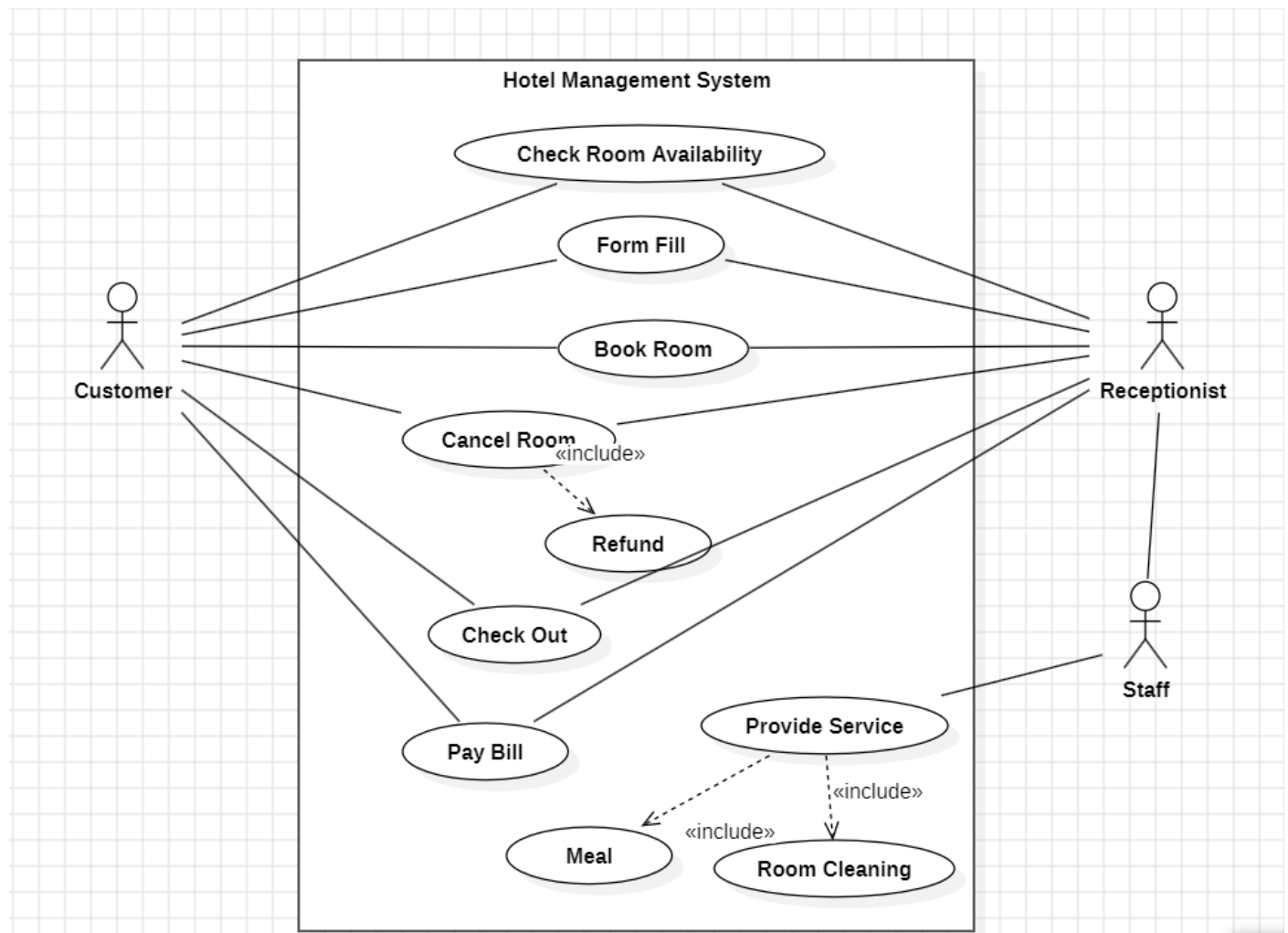


State Diagram:

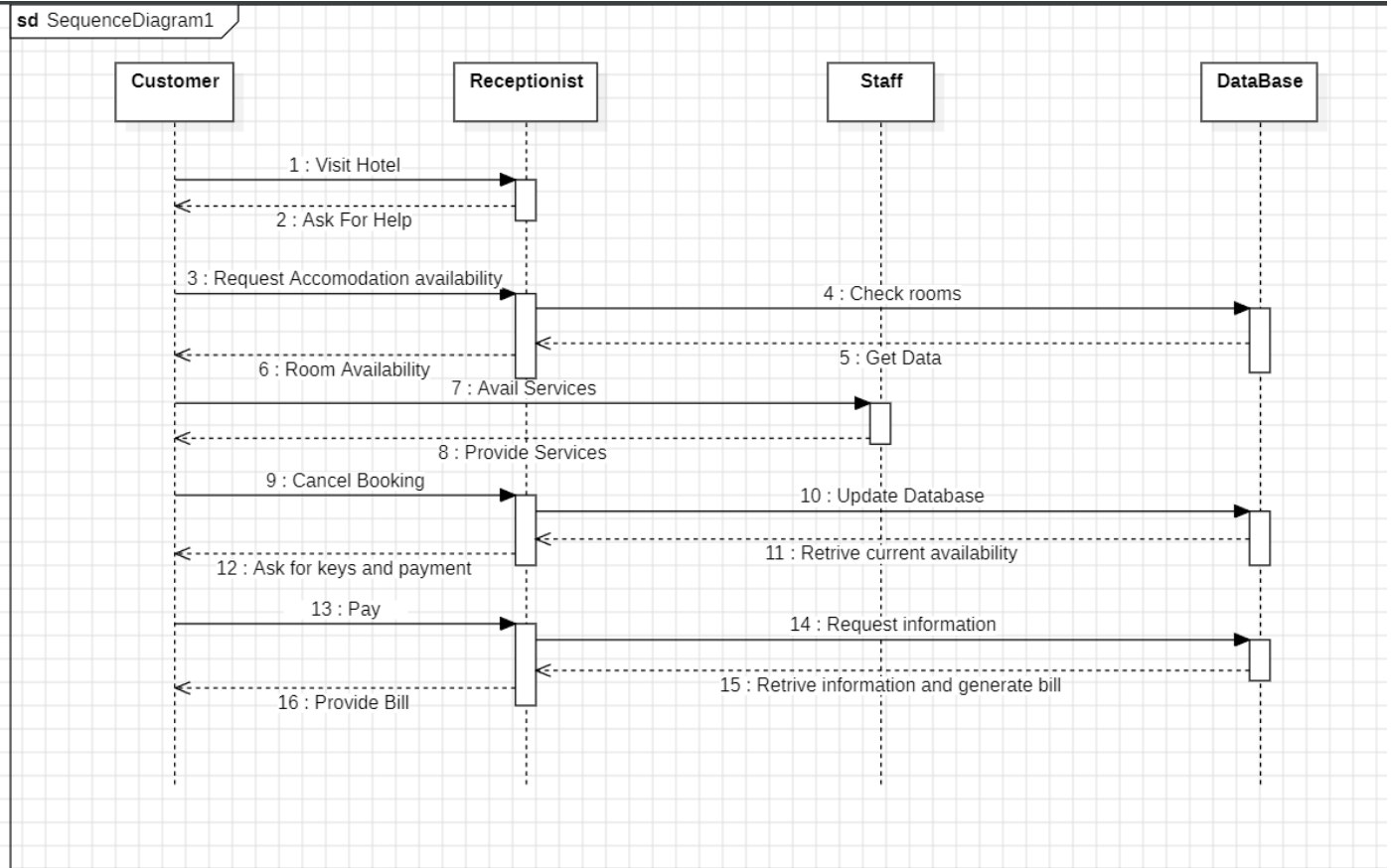


EXPERIMENT-2(Hotel Management System)

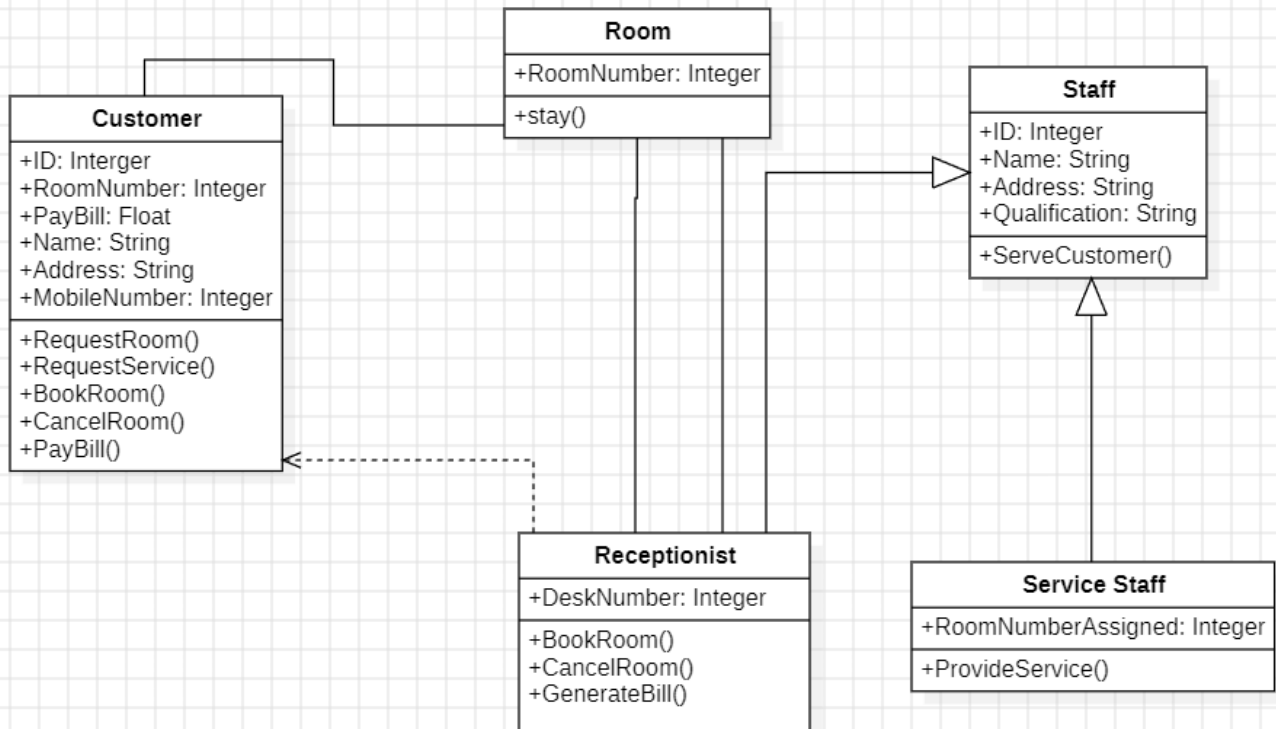
Use Case Diagram:



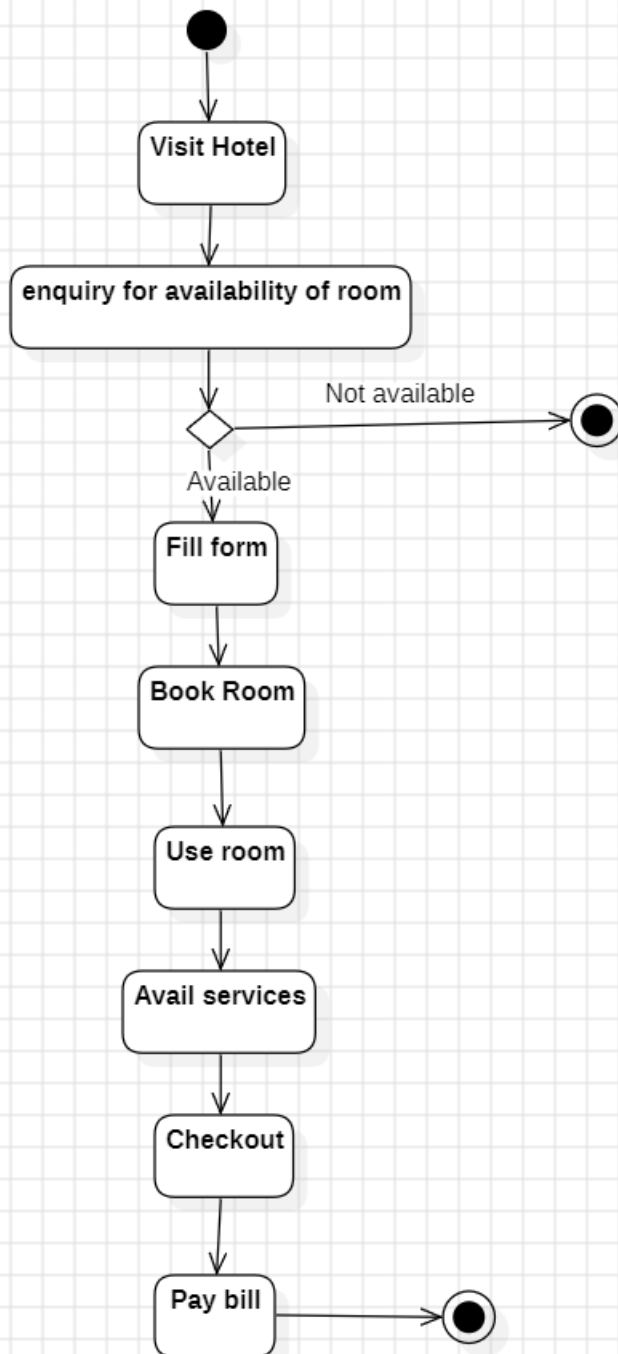
Sequence Diagram:



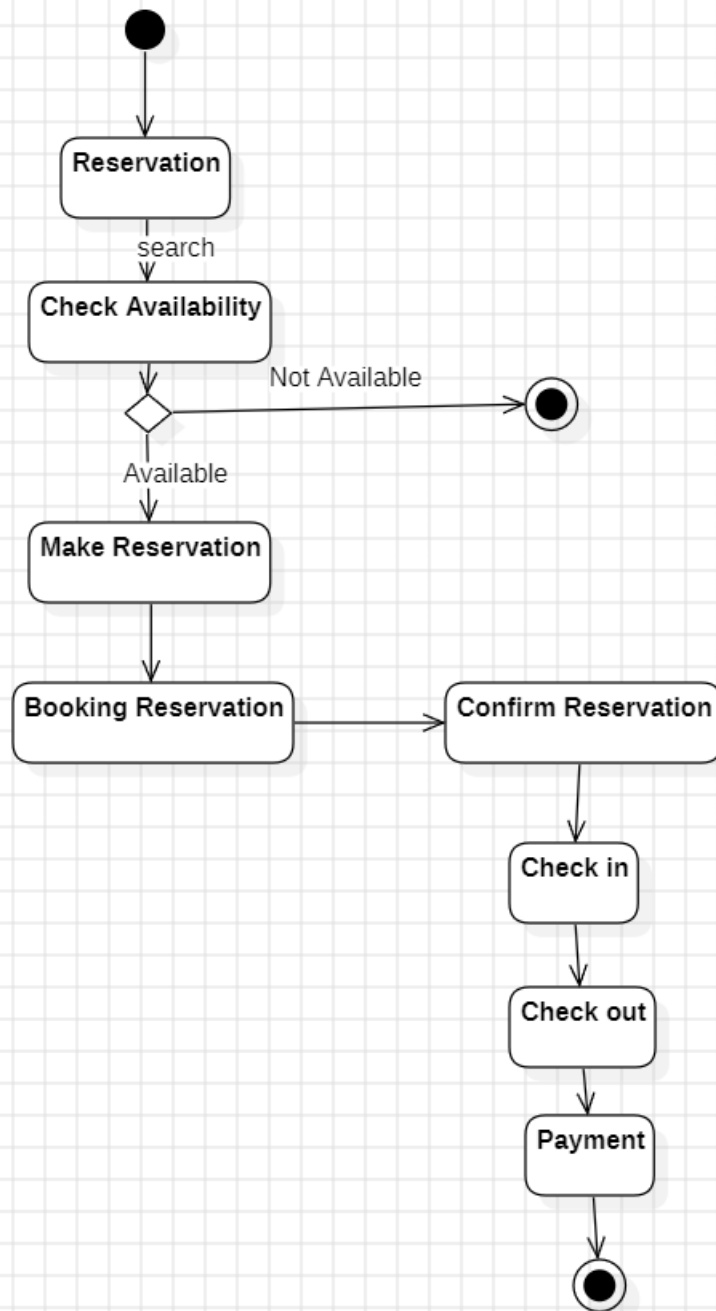
Class Diagram:



Activity Diagram:



State Diagram:



EXPERIMENT-3

Basic Java Codes:

1. Even or Odd:

```
import java.util.Scanner;
public class EvenOdd{
    public static void main(String[] args){
        Scanner sum = new Scanner(System.in);
        System.out.print("Enter a number: ");
        int num = sum.nextInt();
        if(num % 2 == 0){
            System.out.println(num + " is Even.");
        }else{
            System.out.println(num + " is Odd.");
        }
    }
}
```

Output:

```
D:\Coding\Java Programs>javac EvenOdd.java

D:\Coding\Java Programs>java EvenOdd.java
Enter a number: 5
5 is Odd.
```

2.Reverse Number:

```
import java.util.Scanner;

public class ReverseNumber {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter a number: ");
        int num = sc.nextInt();
        int rev = 0;
        while (num != 0) {
            int digit = num % 10;
            rev = rev * 10 + digit;
            num /= 10;
        }
        System.out.println("Reversed Number: " + rev);
    }
}
```

Output:

```
D:\Coding\Java Programs>javac ReverseNumber.java

D:\Coding\Java Programs>java ReverseNumber.java
Enter a number: 123
Reversed Number: 321
```

3.Largest Number:

```
import java.util.Scanner;
public class LargestNumber{
    public static void main(String[] args){
        Scanner la = new Scanner(System.in);
        System.out.print("Enter first number: ");
        int num1 = la.nextInt();
        System.out.print("Enter second number: ");
        int num2 = la.nextInt();
        System.out.print("Enter third number: ");
        int num3 = la.nextInt();
        int largest = (num1 > num2) ? (num1 > num3 ? num1 : num3) : (num2 > num3 ? num2 : num3);
        System.out.println("Largest number is: " + largest);
    }
}
```

Output:

```
D:\Coding\Java Programs>javac LargestNumber.java
```

```
D:\Coding\Java Programs>java LargestNumber.java
```

```
Enter first number: 22
```

```
Enter second number: 26
```

```
Enter third number: 88
```

```
Largest number is: 88
```


4.Count Digits:

```
import java.util.Scanner;
public class CountDigits{
    public static void main(String[] args){
        Scanner co = new Scanner(System.in);
        System.out.print("Enter a number: ");
        int num = co.nextInt();
        int count = 0;
        while(num != 0){
            num /= 10;
            count++;
        }
        System.out.println("Number of digits: " + count);
    }
}
```

Output:

```
D:\Coding\Java Programs>javac CountDigits.java
```

```
D:\Coding\Java Programs>java CountDigits.java
```

```
Enter a number: 123
```

```
Number of digits: 3
```

5.Factorial:

```
import java.util.Scanner;
public class Factorial{
    public static void main(String[] args){
        Scanner an = new Scanner(System.in);
        System.out.print("Enter a number: ");
        int num = an.nextInt();
        int fact = 1;
        for(int i = 1; i <= num; i++){
            fact *= i;
        }
        System.out.println("Factorial of " + num + " is " + fact);
    }
}
```

Output:

```
D:\Coding\Java Programs>javac Factorial.java

D:\Coding\Java Programs>java Factorial.java
Enter a number: 5
Factorial of 5 is 120
```

6.Fibonacci:

```
import java.util.Scanner;
public class Fibonacci{
    public static void main(String[] args){
        Scanner my = new Scanner(System.in);
        System.out.print("Enter the number of terms: ");
        int n = my.nextInt();
        int a = 0, b = 1;
        System.out.print("Fibonacci Series: " + a + " " + b);
        for (int i = 2; i < n; i++){
            int next = a + b;
            System.out.print(" " + next);
            a = b;
            b = next;
        }
    }
}
```

Output:

```
D:\Coding\Java Programs>javac Fibonacci.java

D:\Coding\Java Programs>java Fibonacci.java
Enter the number of terms: 5
Fibonacci Series: 0 1 1 2 3
```

7.Prime Check:

```
import java.util.Scanner;
public class PrimeCheck{
    public static void main(String[] args){
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter a number: ");
        int num = sc.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.");
        }
    }
}
```

Output:

```
D:\Coding\Java Programs>javac PrimeCheck.java

D:\Coding\Java Programs>java PrimeCheck.java
Enter a number: 55
55 is not a Prime Number.
```

8.Swap Numbers:

```
import java.util.Scanner;
public class SwapNumbers{
    public static void main(String[] args){
        Scanner aa = new Scanner(System.in);
        System.out.print("Enter first number: ");
        int a = aa.nextInt();
        System.out.print("Enter second number: ");
        int b = aa.nextInt();
        a = a + b;
        b = a - b;
        a = a - b;
        System.out.println("After swapping: a = " + a + ", b = " + b);
    }
}
```

Output:

```
D:\Coding\Java Programs>javac SwapNumbers.java

D:\Coding\Java Programs>java SwapNumbers.java
Enter first number: 1234
Enter second number: 12
After swapping: a = 12, b = 1234
```

9.Palindrome:

```
import java.util.Scanner;
public class Palindrome{
    public static void main(String[] args){
        Scanner aa = new Scanner(System.in);
        System.out.print("Enter a number: ");
        int num = aa.nextInt();
        int original = num, rev = 0;
        while (num != 0){
            int digit = num % 10;
            rev = rev * 10 + digit;
            num /= 10;
        }
        if(original == rev){
            System.out.println(original + " is a Palindrome.");
        }else{
            System.out.println(original + " is not a Palindrome.");
        }
    }
}
```

Output:

```
D:\Coding\Java Programs>javac Palindrome.java

D:\Coding\Java Programs>java Palindrome.java
Enter a number: 1234
1234 is not a Palindrome.
```

10.Armstrong:

```
import java.util.Scanner;
public class Armstrong{
    public static void main(String[] args){
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter a number: ");
        int num = sc.nextInt();
        int original = num, sum = 0;
        while(num != 0){
            int digit = num % 10;
            sum += digit * digit * digit;
            num /= 10;
        }
        if(sum == original){
            System.out.println(original + " is an Armstrong Number.");
        }else{
            System.out.println(original + " is not an Armstrong Number.");
        }
    }
}
```

Output:

```
D:\Coding\Java Programs>javac Armstrong.java

D:\Coding\Java Programs>java Armstrong.java
Enter a number: 234
234 is not an Armstrong Number.
```