

LAB RECORD

23CSE111 – Object Oriented Programming

Submitted by

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BACHELOR OF TECHNOLOGY IN

COMPUTER SCIENCE AND ENGINEERING

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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 Likesh* 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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EXPERIMENT-1(Online Shopping System) Use Case Diagram: Authentication Online Shopping View Items Registered Customer include× Identity Provider Make Payment «include Checkout Credit card Payment service Client Register **New Customer** Verify Payment Shipping of product Shipping provider Share location of product

Sequence Diagram: sd SequenceDiagram1 Customer Online Website Payment Method Shipping Company 1: Acess website 2: Browse Products 3 : Add products to cart 4 : Begin checkout process 5 : Send payment information 6 : Process payment 7 : Payment processed 8 : Confirm Payment 9 : Enter shipping information 10 : Provide shipping information 11 : Ship product

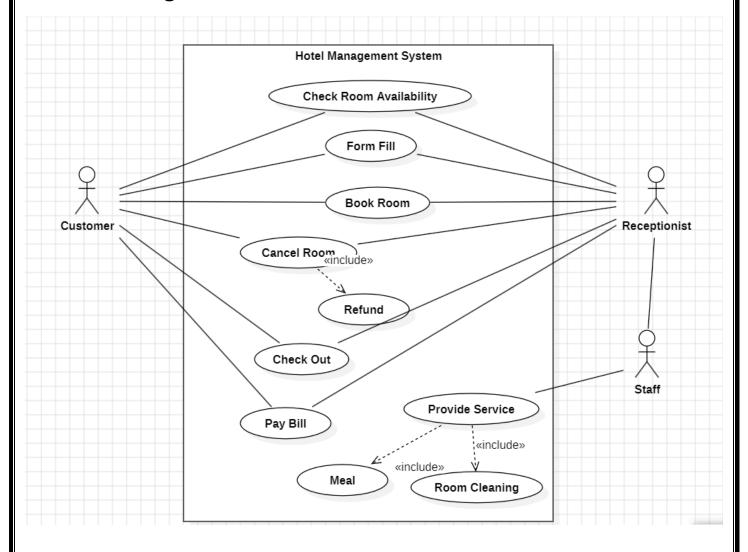
Class Diagram: Bank +Name: String +Address: String +Branch: String +website: String +Supplier ID: int +Name: String Product Type +MakePayment() +Ph no.: int +Prod ID: String +Support website: String +Name: String +get product(): product **Shopping Cart** +Get prod(): prod +Total items: string +Total cost: Double +add item(): void Ship Management +edit cart(): int +Ship ID: Int +Acc no: String Admin +update total() +website: String +gets order() +deliver() +generates bill() +gets payment() Product +order ID: int +payment Info: String +Product Id: Int +cust Id: String +transaction ID: String **Shop Product** +Name: String +License Type: String +Browse: String +Places order() +Gets Imgs(): img +Get supplier(): supplier +Search(item) +get feedb() Customer +Cust Id: Int +Address: String +Product Name: String +Prod Id: Int +select product() +get products() +view history()

Activity Diagram: Search Items View Item Browse Items Add to Shopping Cart Update Shopping Cart Check Shopping Cart Proceed to checkout View Shopping Cart Checkout

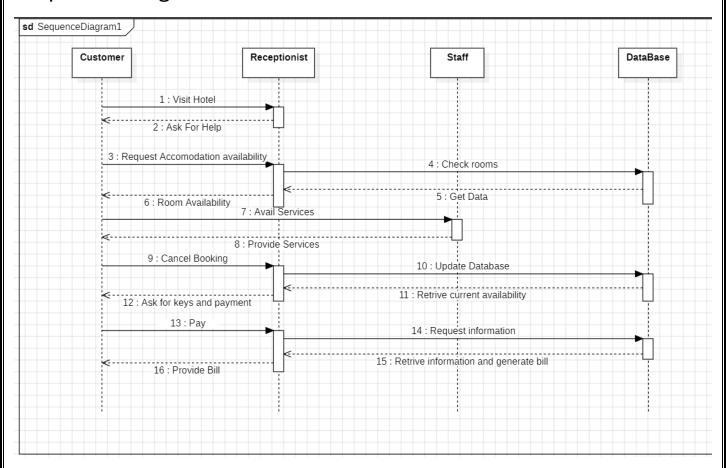
State Diagram: Found Search Items View Item Not found Login View Profille Item selected Add to shopping Cart Register Proceed Update Cart view cart View Shopping Cart Payment Logout Exit Pay Done shopping Confirm order Give detaills Final order Checkout Confirm

EXPERIMENT-2(Hotel Management System)

Use Case Diagram:



Sequence Diagram:



Class Diagram: Room +RoomNumber: Integer Staff +stay() Customer +ID: Integer +Name: String +ID: Interger +RoomNumber: Integer +Address: String +Qualification: String +PayBill: Float +Name: String +ServeCustomer() +Address: String +MobileNumber: Integer +RequestRoom() +RequestService() +BookRoom() +CancelRoom() +PayBill() Receptionist Service Staff +DeskNumber: Integer +RoomNumberAssigned: Integer +BookRoom() +CancelRoom() +ProvideService() +GenerateBill()

Activity Diagram: Visit Hotel enquiry for availability of room Not available Available Fill form Book Room Use room Avail services Checkout Pay bill

State Diagram: Reservation search V Check Availability Not Available Available Make Reservation Booking Reservation Confirm Reservation Check in Check out Payment

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.");
    }
}
```

```
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);
    }
}
```

```
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);
}
```

```
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);
    }
}
```

```
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);
    }
}</pre>
```

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

6.Fibonaci:

```
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;
    }
}</pre>
```

```
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++){</pre>
        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.");
  }
```

```
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:

```
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.");
    }
}
```

```
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.");
    }
}
```

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