SCHOOL OF COMPUTING

SRINIVAS R

CH.SC.U4CSE24146

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.U4CSE24146 – SRINIVAS R*** 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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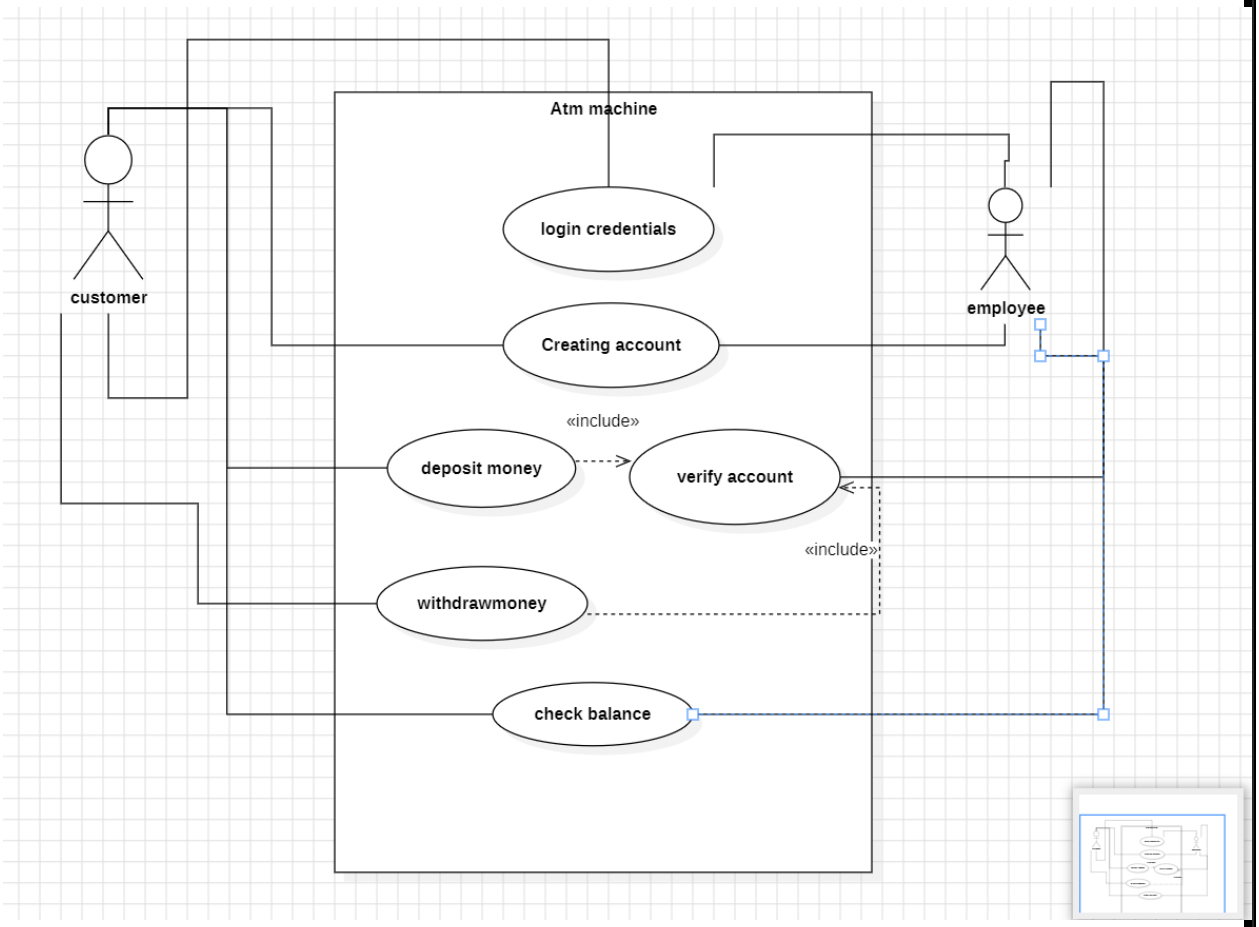
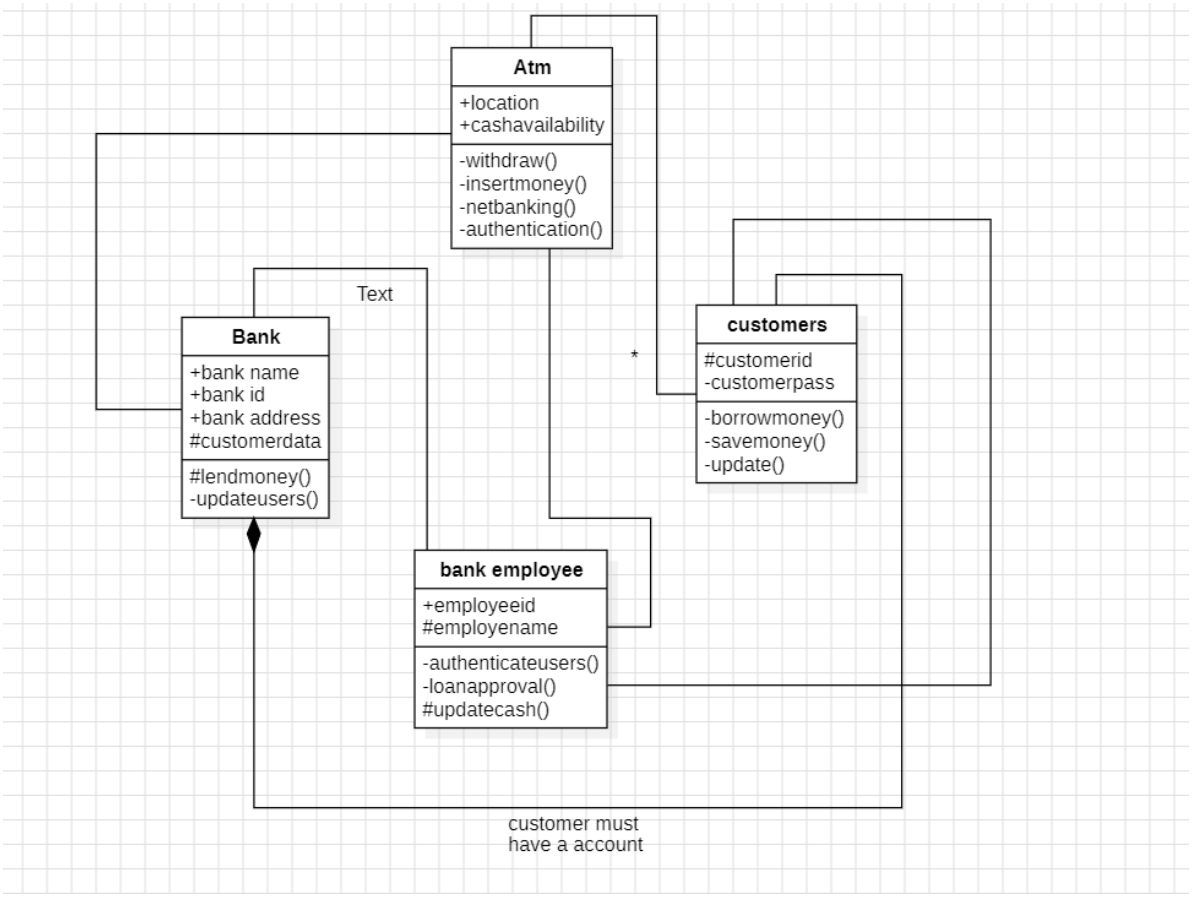
UML DIAGRAMS

1.ATM Machine

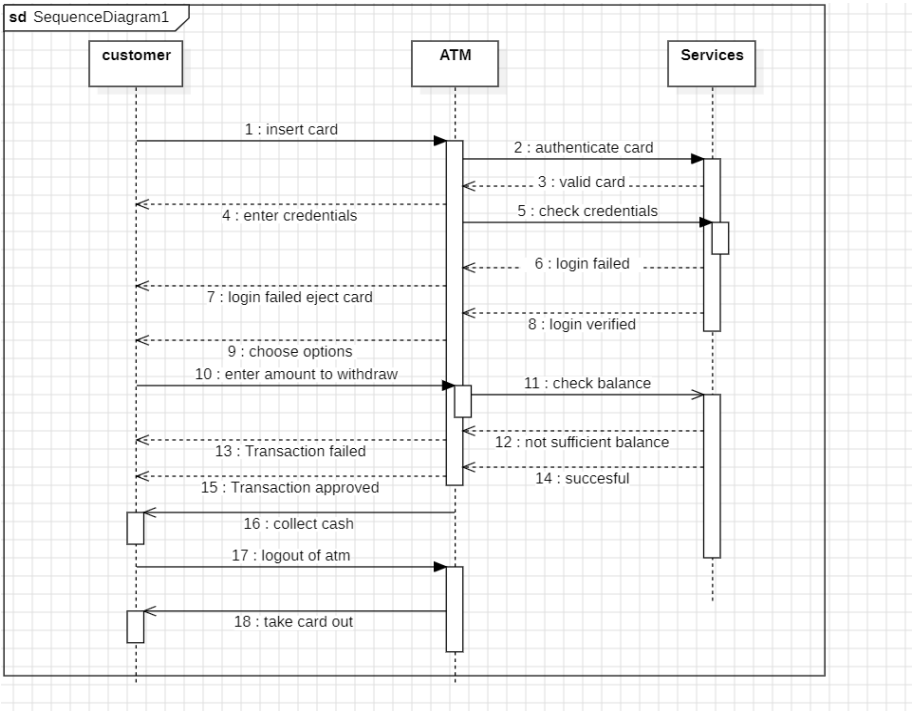
1.a) Use Case Diagram:



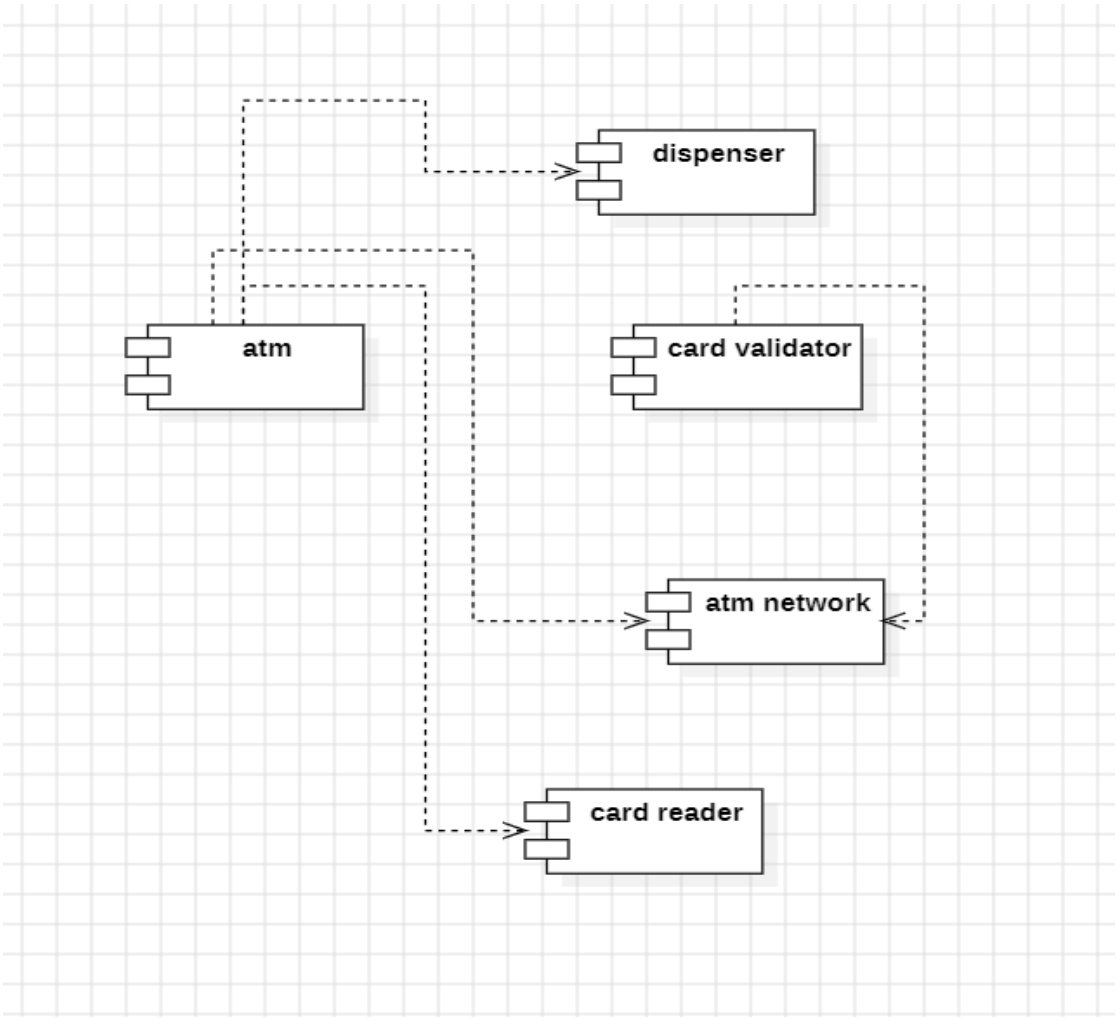
1.b) Class Diagram:



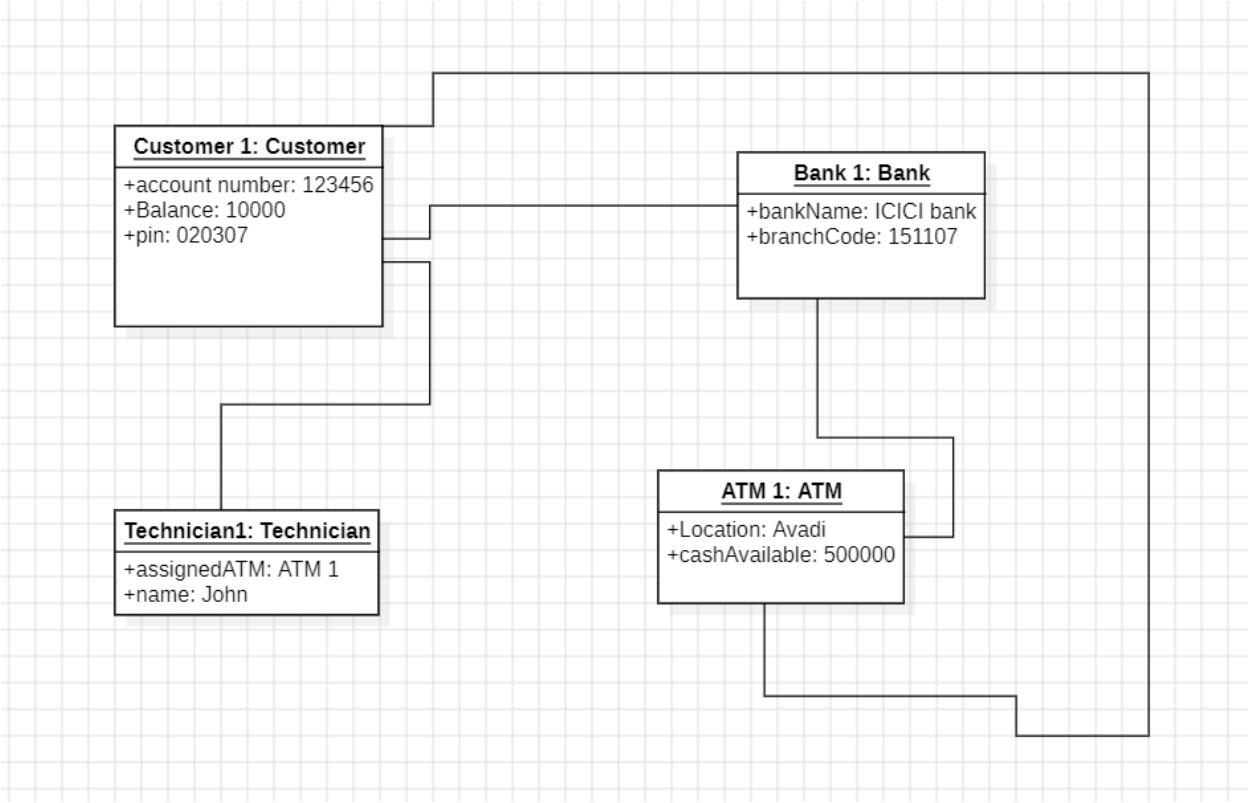
1.c) Sequence Diagram:



1.d) component diagram:

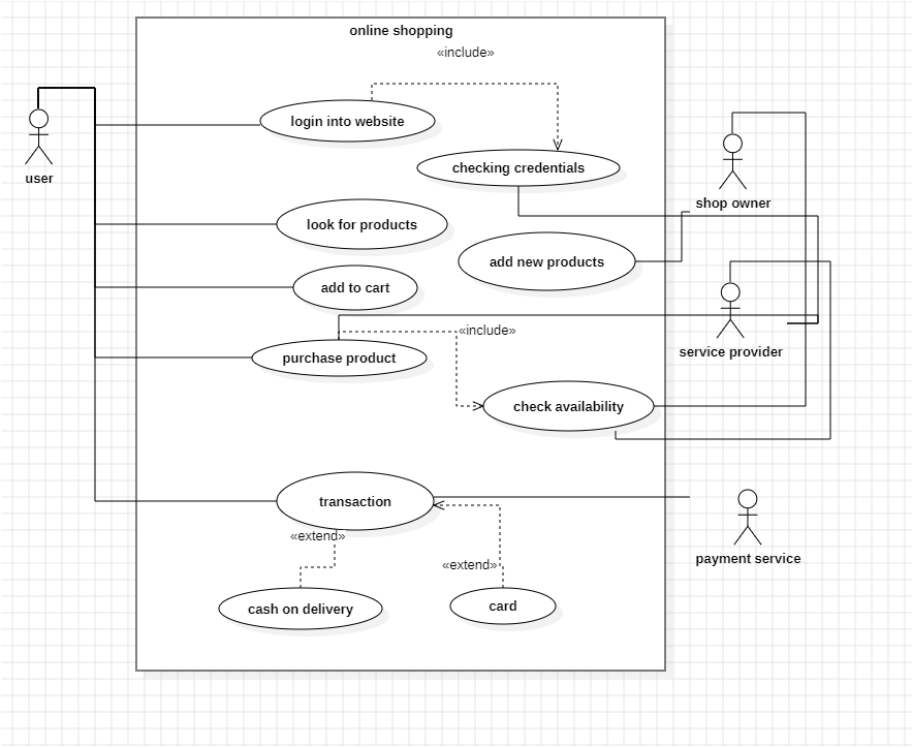


1.e) object Diagram:

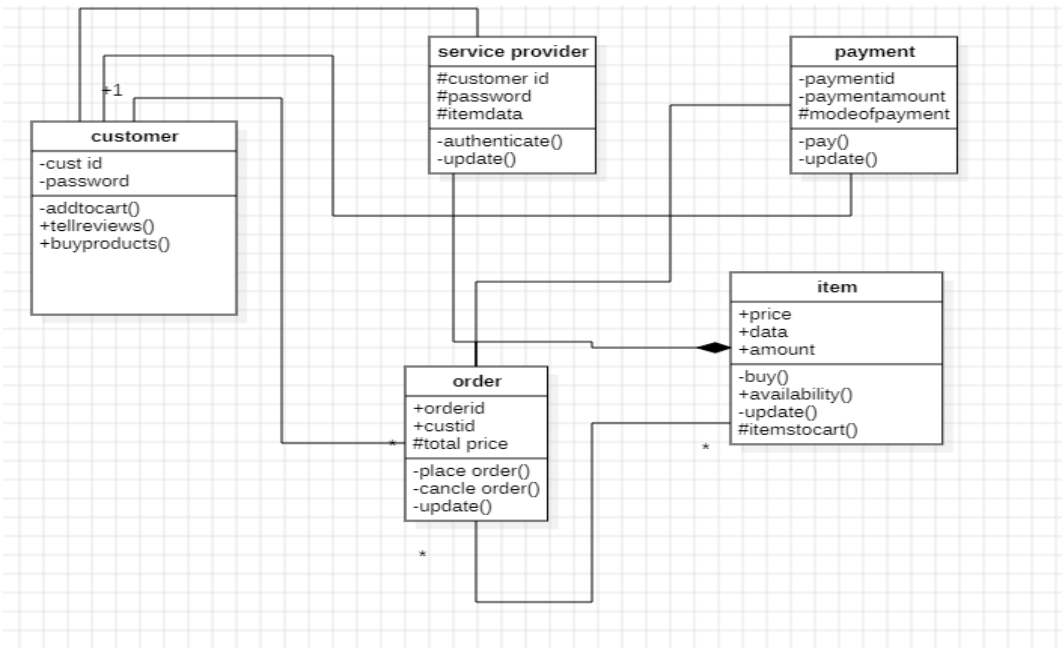


2. Shopping System

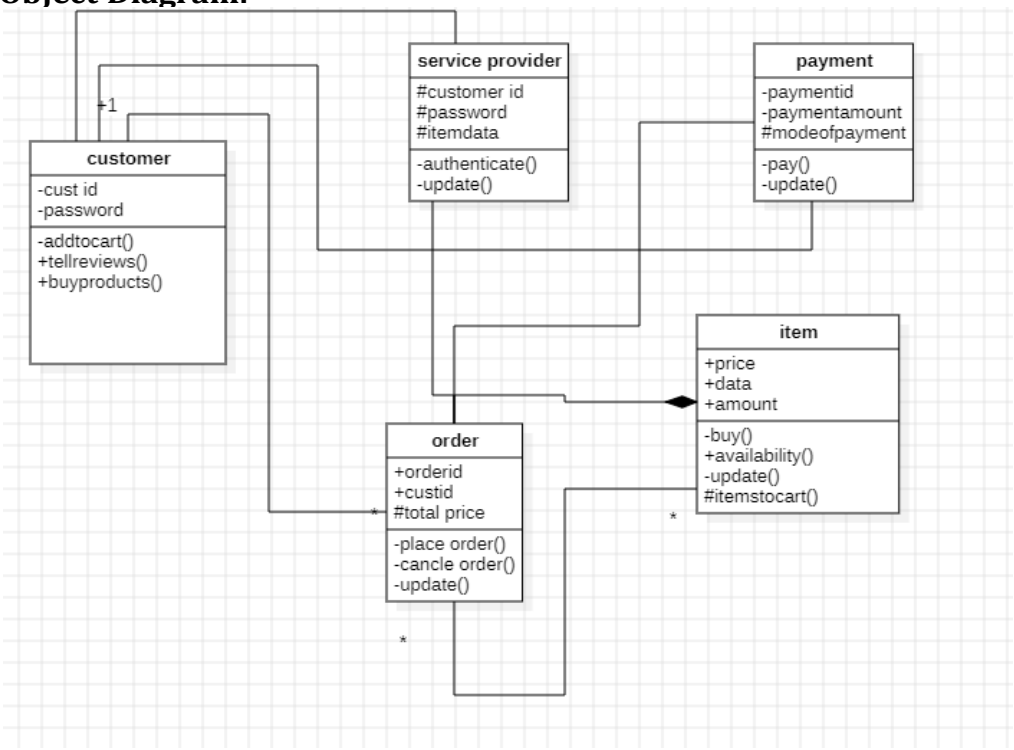
2.a) Use Case Diagram:



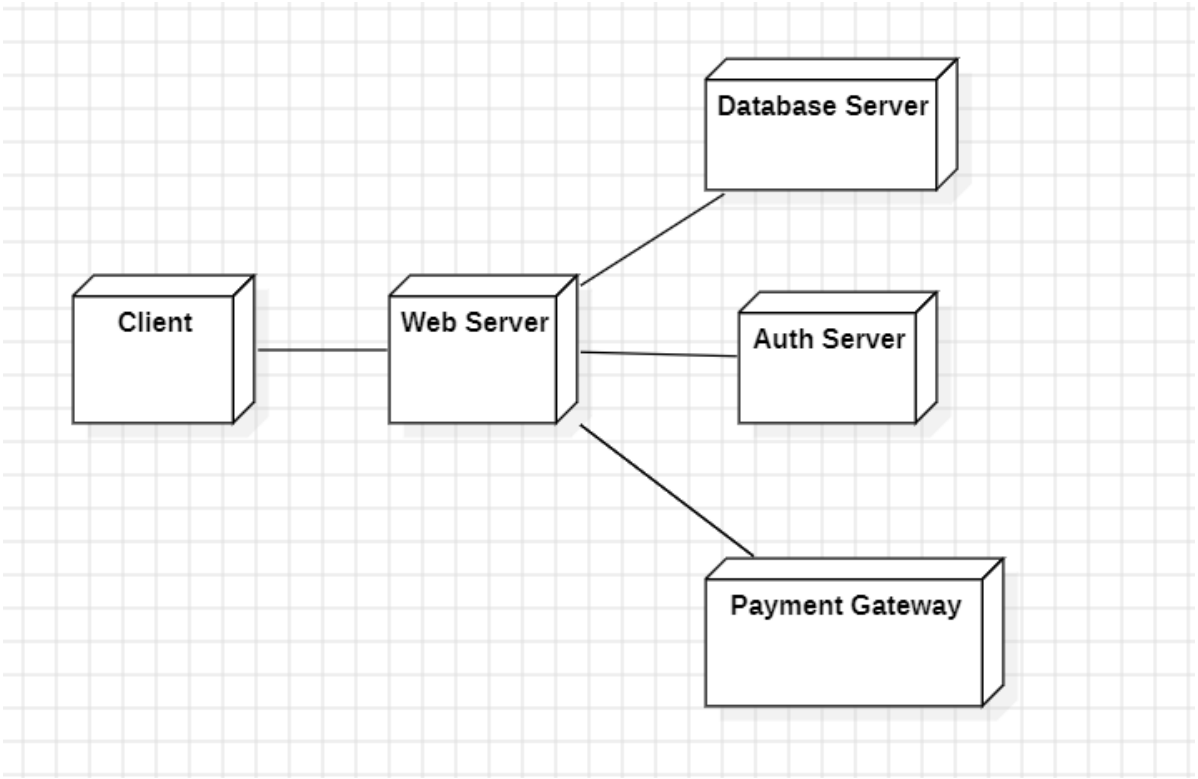
2b) Class Diagram:



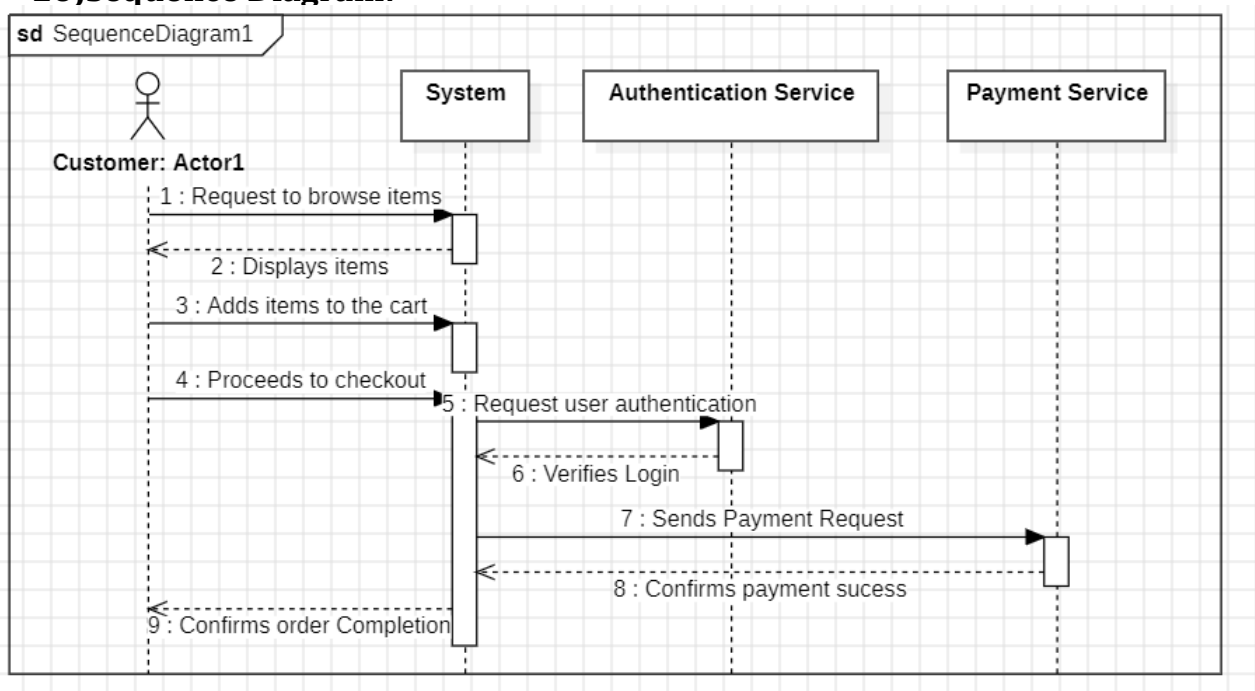
2c) Object Diagram:



2d)Deployment Diagram:



2e)Sequence Diagram:



S

Basic Java Questions

Code:

3.a) Even or odd

```
import java.util.Scanner;
public class evenodd{
public static void main(String[] args){
Scanner obj= new Scanner(System.in);
System.out.println("enter your number");
int num= obj.nextInt();
if(num%2==0){
System.out.println("the number"+num+"is even");
}
else{
System.out.println("the number"+num+"is odd");
}
obj.close();
}}
```

Output:

```
C:\Users\sasik>javac "D:\java\Numcheck.java"

C:\Users\sasik>java "D:\java\Numcheck.java"
to check num 6
positive
```

3.b) Student Grading

```
import java.util.Scanner;
public class Grade {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("Enter marks: ");
        int a = scanner.nextInt();

        if (a >= 90) {
            System.out.println("Grade: A");
        } else if (a >= 80) {
            System.out.println("Grade: B");
        } else if (a >= 70) {
            System.out.println("Grade: C");
        } else if (a >= 60) {
            System.out.println("Grade: D");
        } else {
            System.out.println("Grade: F");
        }
        scanner.close();
    }
```

```
C:\Users\sasik>javac "D:\java\Grade.java"

C:\Users\sasik>java "D:\java\Grade.java"
Enter marks: 70
Grade: C

C:\Users\sasik>
```

3.d) Simple interest calculator

```
import java.util.Scanner;
public class SimpleInterest{
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter Principal amount: ");
        float principal = sc.nextFloat();
        System.out.print("Enter Rate of Interest (%): ");
        float rate = sc.nextFloat();
        System.out.print("Enter Time (in years): ");
        float time =sc.nextFloat();
        float Interest = (principal * rate * time) / 100;
        System.out.println("Interest: " + Interest);
        System.out.println("Total Amount: " + (principal + Interest))
        sc.close();
    }
}
```

Output:

```
C:\Users\sasik>javac "D:\java\SimpleInterest.java"

C:\Users\sasik>java "D:\java\SimpleInterest.java"
Enter Principal amount: 2000
Enter Rate of Interest (%): 4
Enter Time (in years): 3
Interest: 240.0
Total Amount: 2240.0
```

3.e) Largest Number Calculator

```
import java.util.Scanner;
public class Largest{
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter three numbers: ");
        int a = sc.nextInt();
int b = sc.nextInt();
 int c = sc.nextInt();

        if (a > b && a > c) {
            System.out.println(a + " is the largest.");
        } else if (b > c) {
            System.out.println(b + " is the largest.");
        } else {
            System.out.println(c + " is the largest.");
        }
        sc.close();
    }
}
```

OUTPUT:

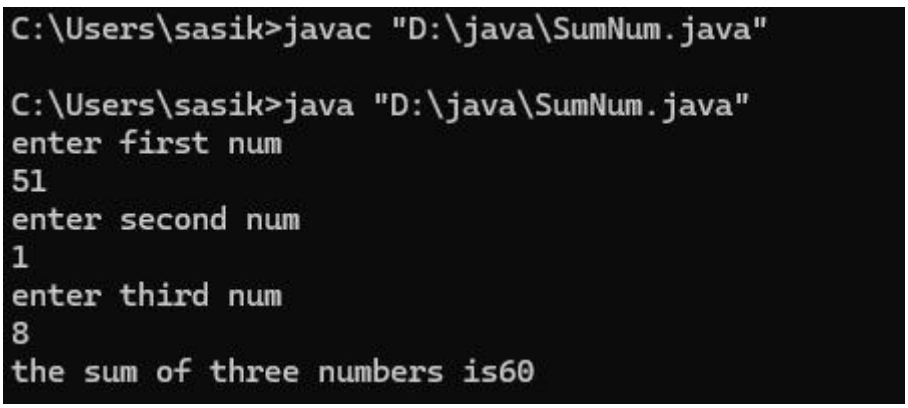
```
C:\Users\sasik>javac "D:\java\Largest.java"

C:\Users\sasik>java "D:\java\Largest.java"
Enter three numbers: 10
20
50
50 is the largest.
```

3.f) Sum of numbers

```
import java.util.Scanner;
public class sumnum{
static int n1;
static int n2;
static int n3;
public static void main(String[] args){
Scanner obj = new Scanner(System.in);
System.out.println("enter first num");
n1=obj.nextInt();
System.out.println("enter second num");
n2=obj.nextInt();
System.out.println("enter third num");
n3=obj.nextInt();
int n4=n1+n2+n3;
System.out.println("the sum of three numbers is"+ n4);
}
}
```

OUTPUT:



Code:

```
3.g) To find the cube of a number
import java.util.Scanner;
public class cube{
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("enter a number");
        int a = scanner.nextInt();
System.out.println("Cube of "+a);
System.out.println(a*a*a);
        }
}
```

OUTPUT:

```
C:\Users\sasik>javac "D:\Exp3\cube.java"

C:\Users\sasik>java "D:\Exp3\cube.java"
enter a number5
Cube of 5
125

C:\Users\sasik>
```

Code:

3.h) Reverse String_

```
import java.util.Scanner;
import java.io.*;
public class reverse{
public static void main(String[] args){
Scanner obj = new Scanner(System.in);
System.out.println("enter your word");
String name= obj.nextLine();
String rev="";
for(int i=name.length()-1;i>=0;i--){
rev+=name.charAt(i);
}
System.out.println(rev);
}
}
```

OUTPUT:

```
C:\Users\sasik>javac "D:\java\reverse.java"

C:\Users\sasik>java "D:\java\reverse.java"
enter your word
rahul
luhar
```

3.i) To check positive or negative_

```
import java.util.Scanner;
public class Numcheck{
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        System.out.print("to check num ");
        int a = scanner.nextInt();

        if (a >0) {
            System.out.println("positive");
        } else if (a<0) {
            System.out.println("Negative");
        } else if (a==0) {
            System.out.println("zero");
        }
        else {
            System.out.println("unknown entry");
        }
    }
}
```

OUTPUT:

```
C:\Users\sasik>javac "D:\java\Numcheck.java"

C:\Users\sasik>java "D:\java\Numcheck.java"
to check num 6
positive
```

3.jsss) Voting eligibility

```
_import java.util.Scanner;
public class vote{
public static void main(String[] args){
Scanner obj = new Scanner(System.in);
System.out.println("enter your age");
int age = obj.nextInt();
if(age<18){
System.out.println("not eligible to vote");
}
else{
System.out.println("eligible to vote");
}}}
```

OUTPUT:

```
C:\Users\sasik>javac "D:\java\vote.java"

C:\Users\sasik>java "D:\java\vote.java"
enter your age
50
eligible to vote
```