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CH.SC.U4CSE24134

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.U4CSE24134 – P JEEVAN SANDEEP*** 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

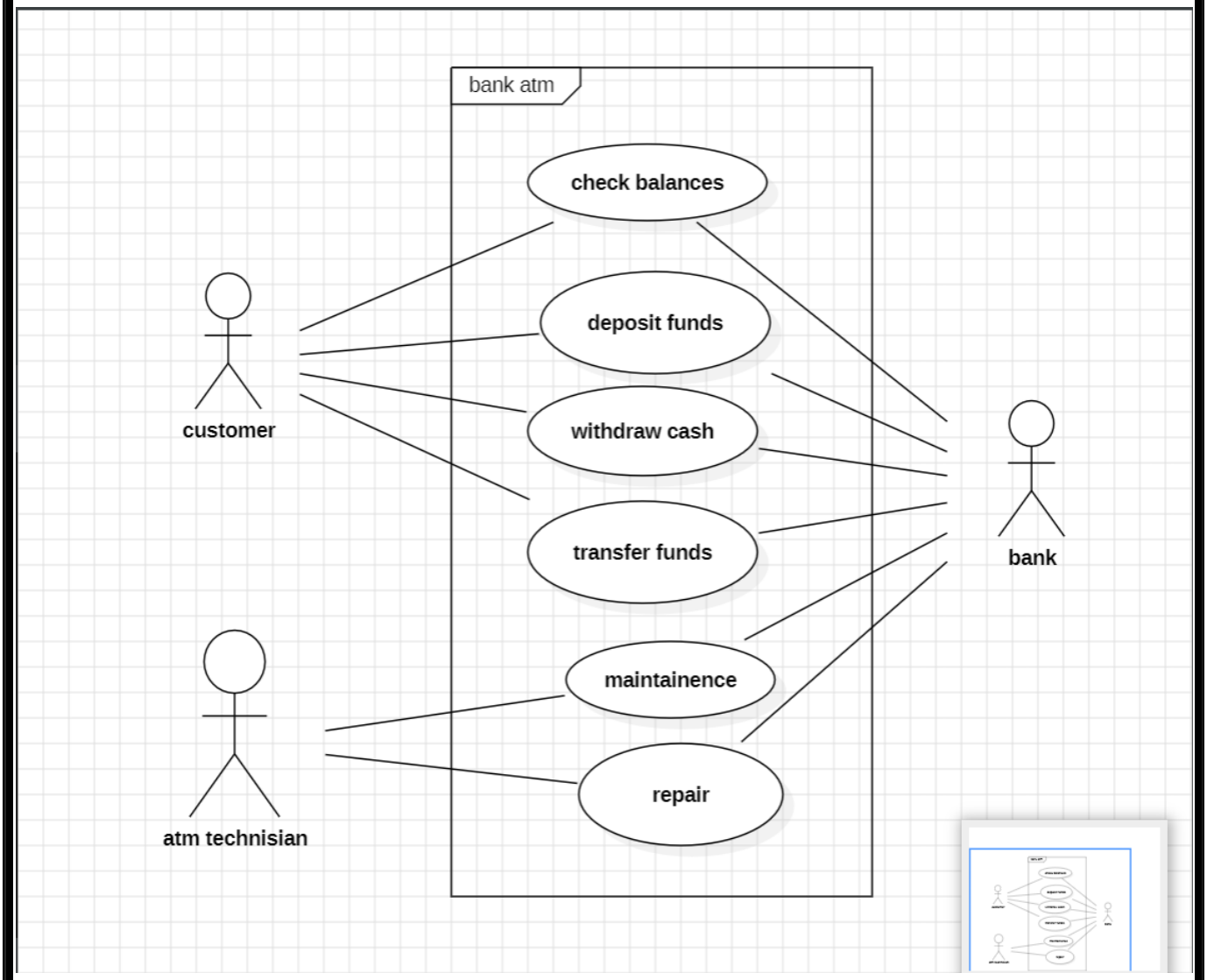
Internal Examiner 1 Internal Examiner 2

INDEX

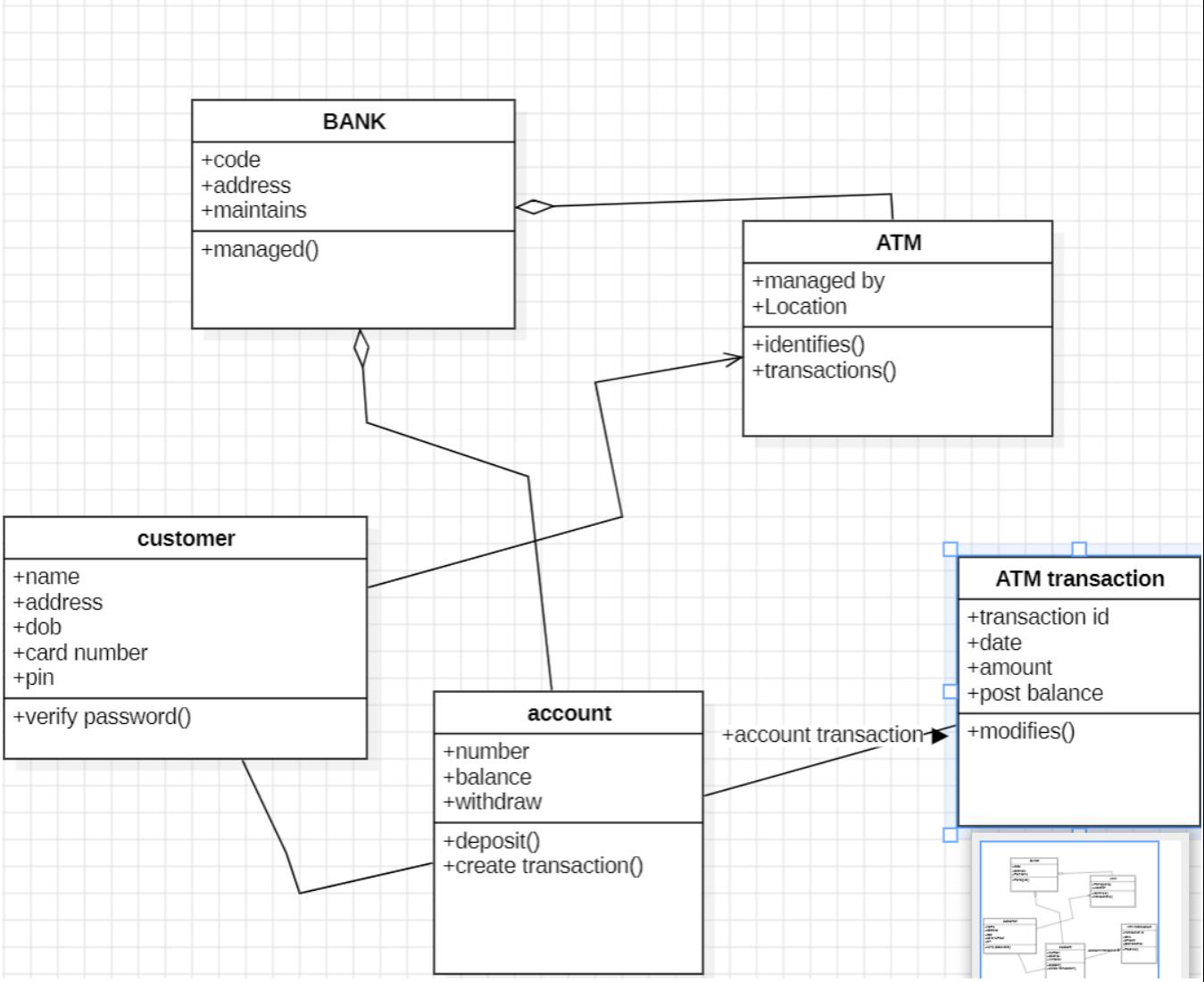
UML DIAGRAMS

1. ATM MACHINE

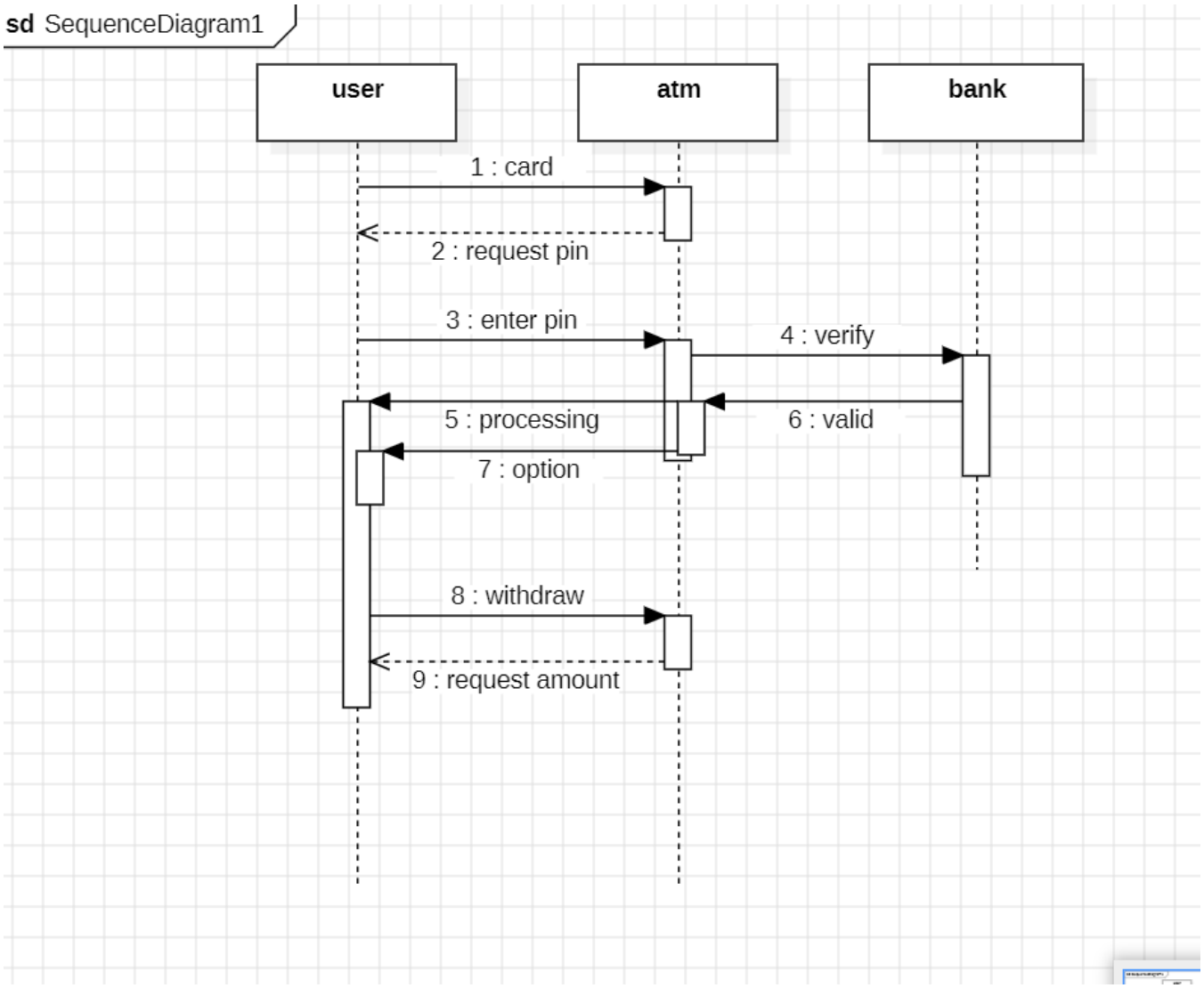
1.a) Use Case Diagram:



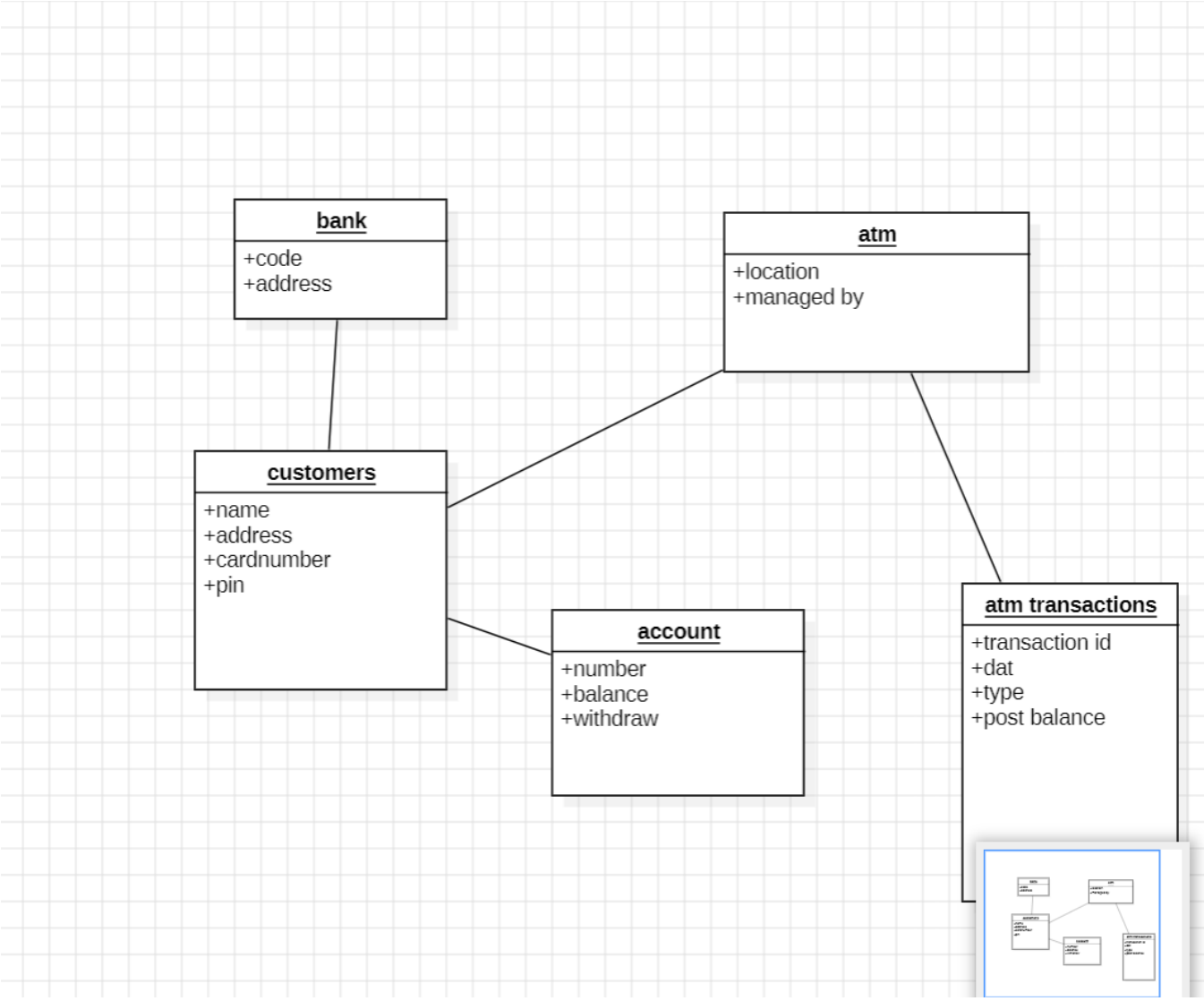
1.b) Class Diagram:



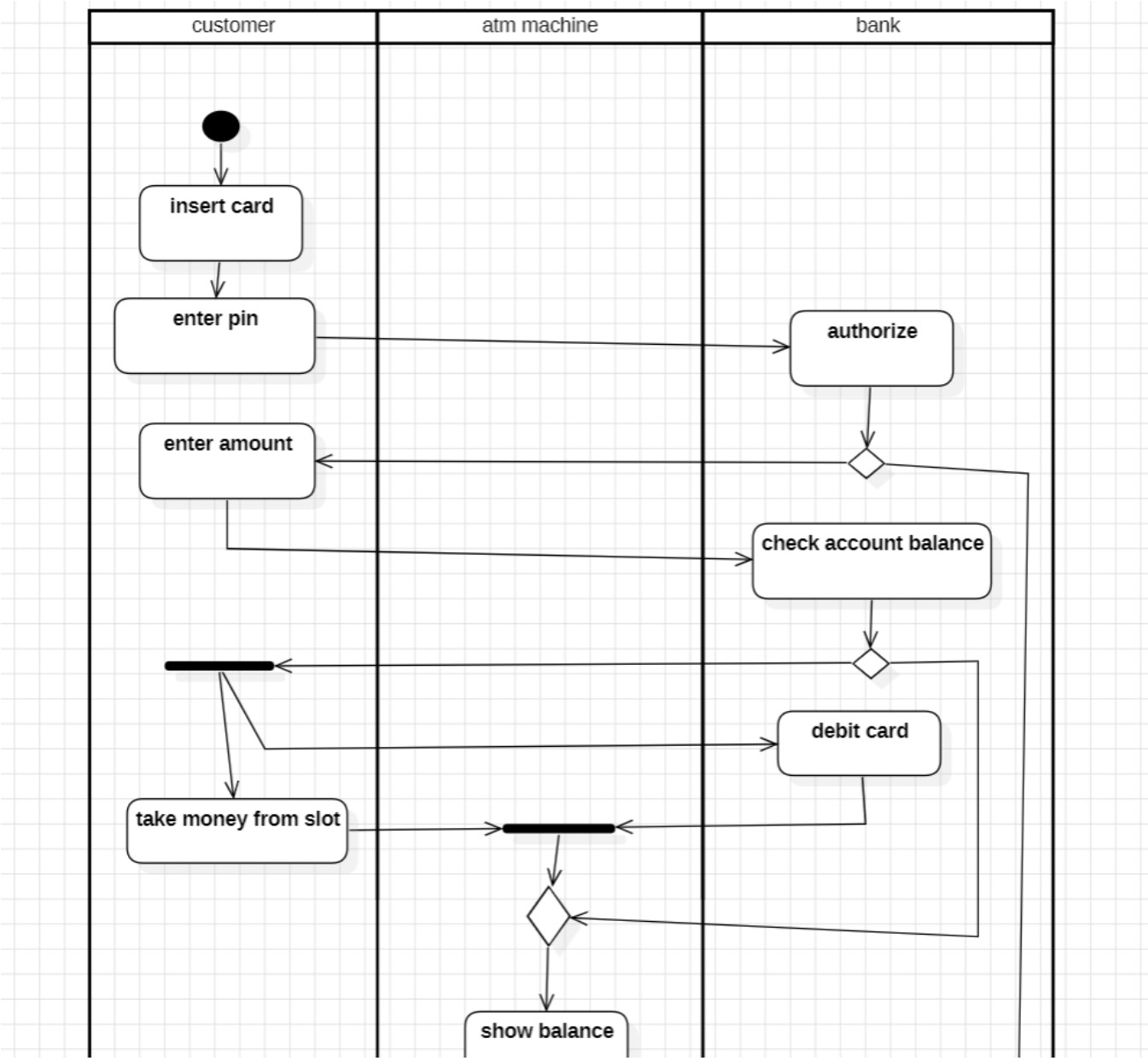
1.c) Sequence Diagram:



1.d) Object Diagram:

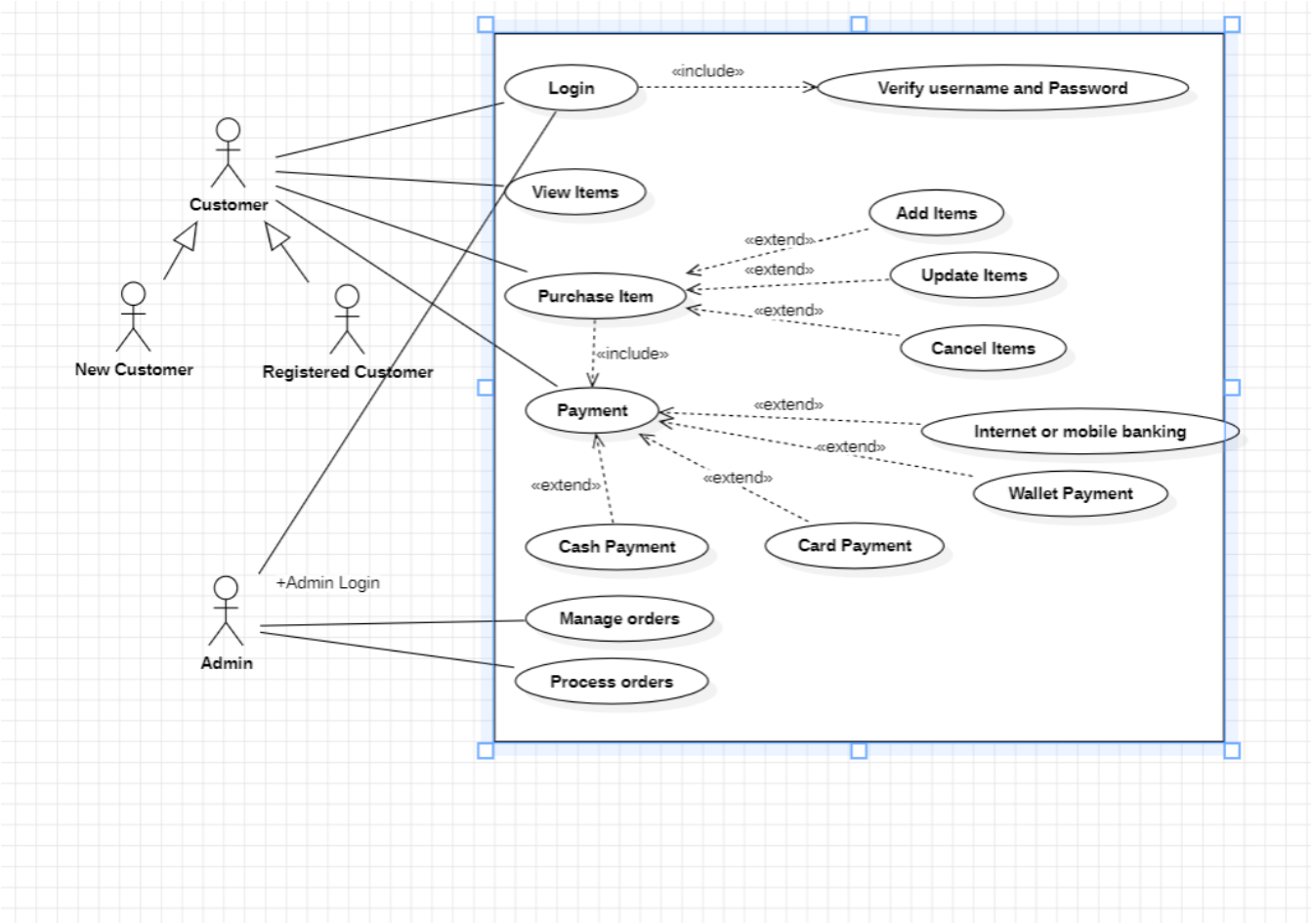


1.e) State-Activity Diagram:

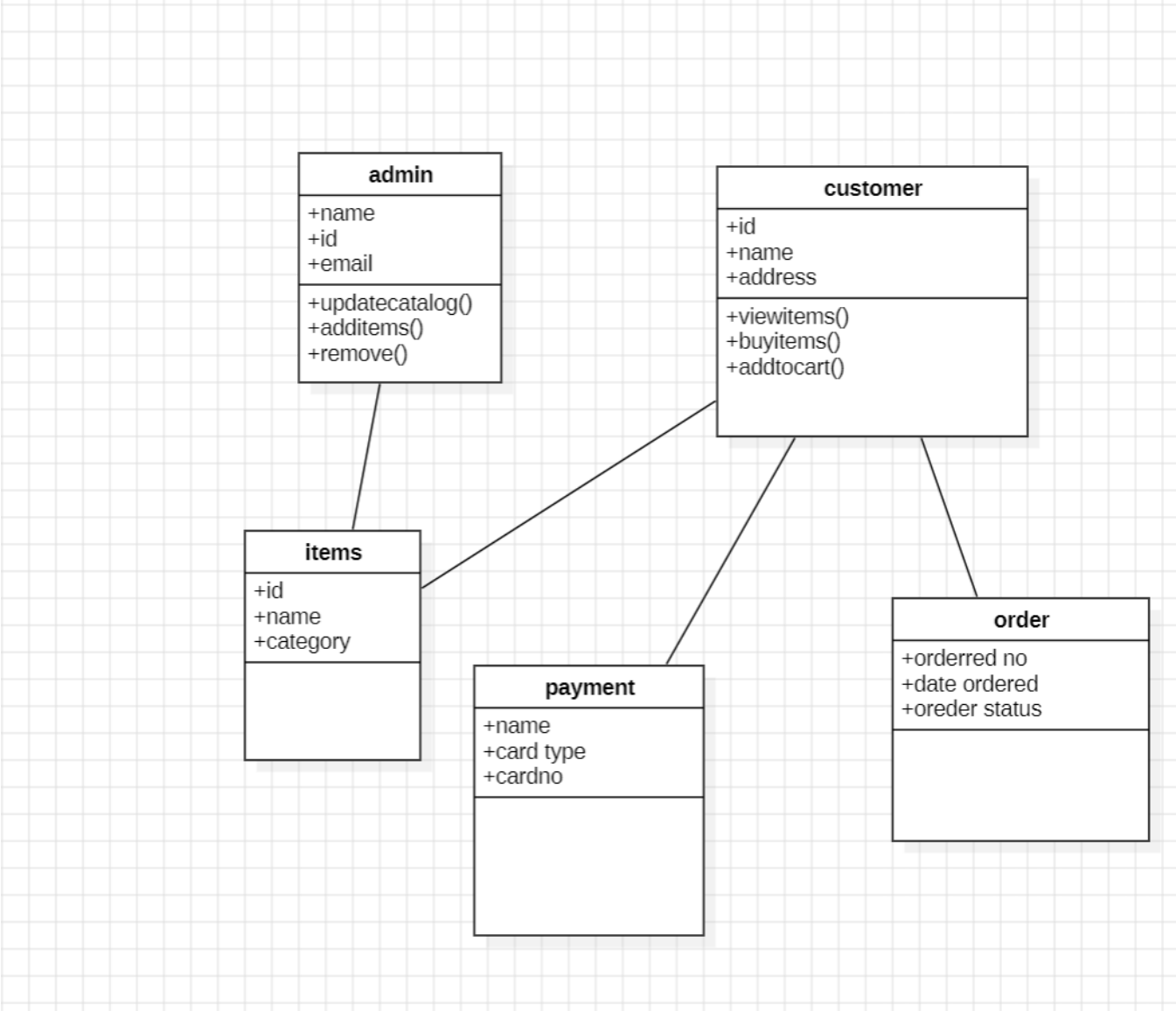


2. ONLINE SHOPPING

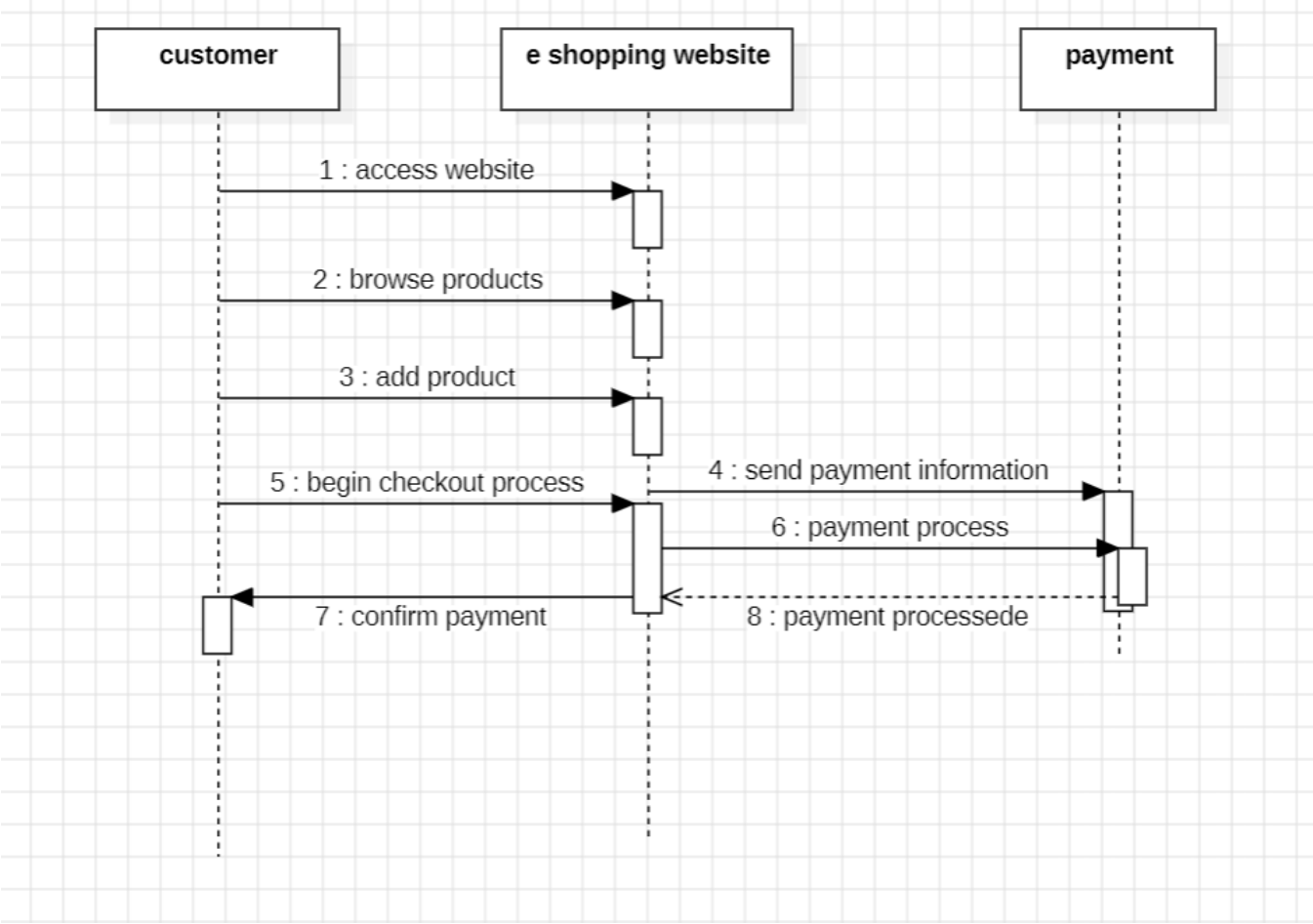
2.a) Use Case Diagram:



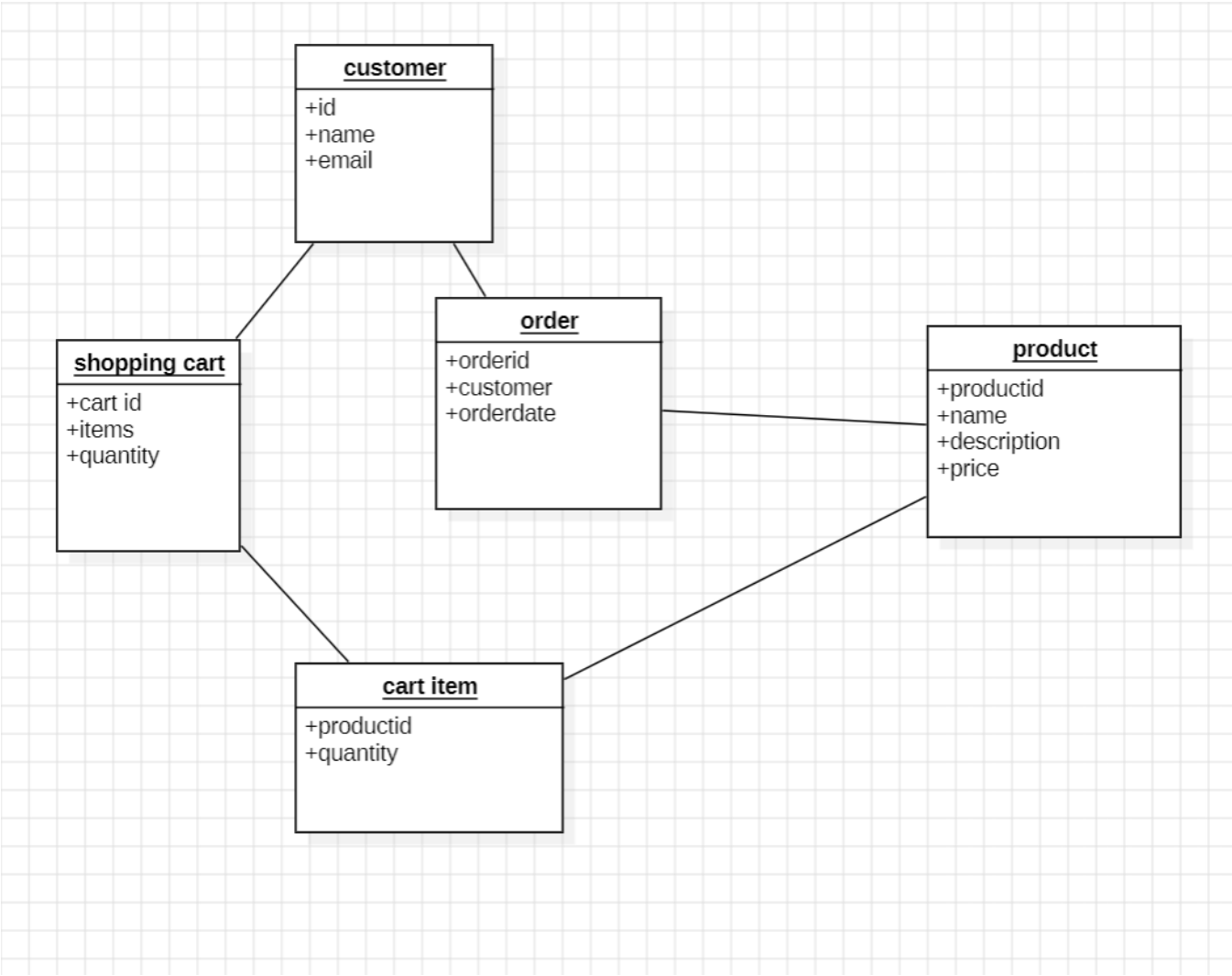
2.b) Class Diagram:



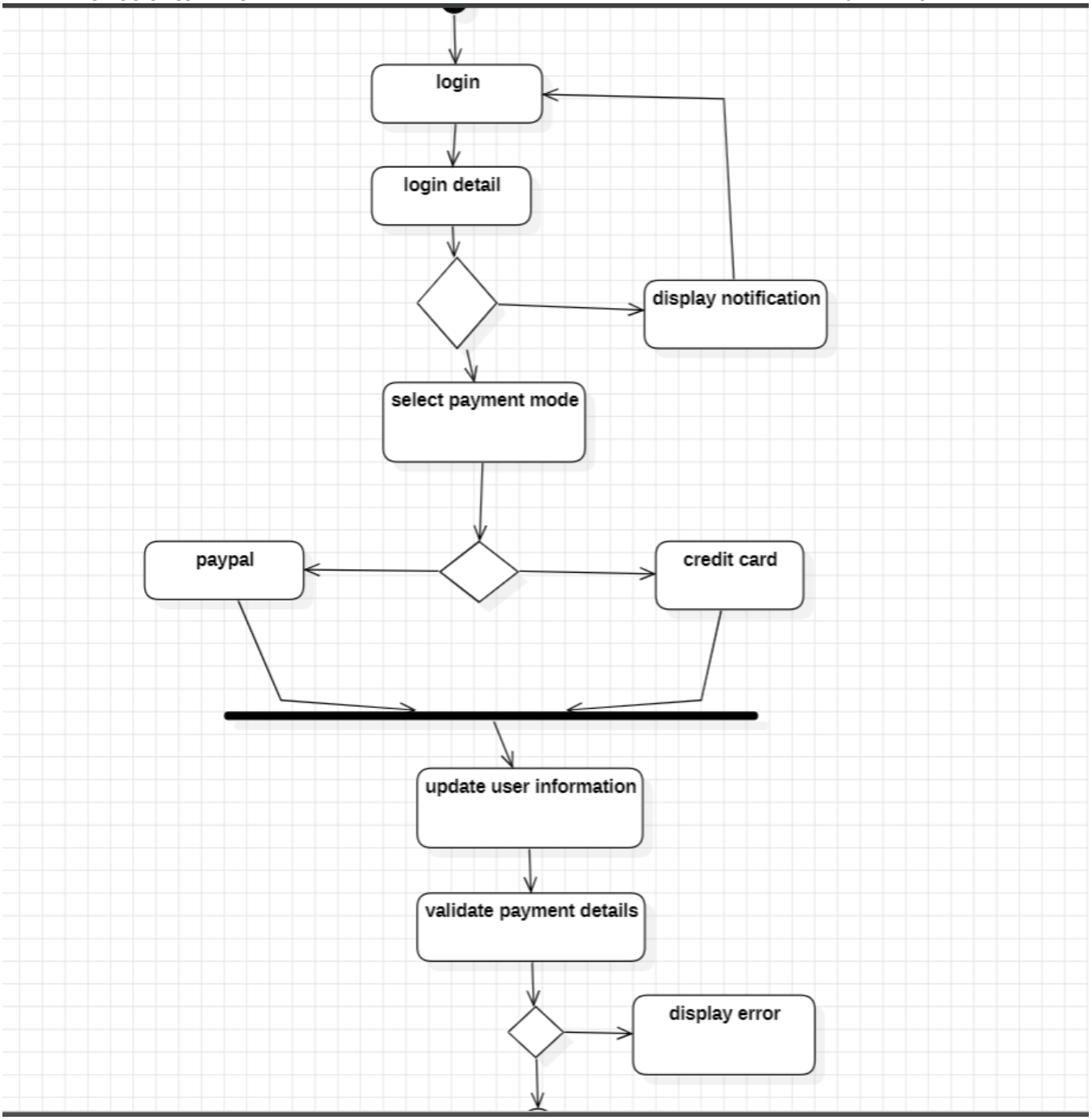
2.c) Sequence Diagram:


customer
e shopping website
payment
1 : access website
2 : browse products
3 : add product
4 : send payment information
5 : begin checkout process
6 : payment process
7 : confirm payment
8 : payment processede

2.d) Object Diagram:



2.e) State-Activity Diagram:


login
login detail
display notification
select payment mode
paypal
credit card
update user information
validate payment details
display error

3. Basic Java Programs

3.a) Hello world

Code:

```
public class HelloWorld {
  public static void main(String[] args) {
         System.out.println("Hello, World!");
            }
          }
```

Output:

```
C:\Users\jeeva\OneDrive\Desktop\java codes>javac HelloWorld.java

C:\Users\jeeva\OneDrive\Desktop\java codes>java HelloWorld
Hello, World!

C:\Users\jeeva\OneDrive\Desktop\java codes>
```

3.b) Even Odd

Code:

```
import java.util.Scanner;

public class EvenOdd {

    public static void main(String[] args) {

        Scanner reader = new Scanner(System.in);

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

        if(num % 2 == 0)
            System.out.println(num + " is even");
        else
            System.out.println(num + " is odd");
    }
}
```

Output:

```
:\Users\jeeva\OneDrive\Desktop\java codes>javac EvenOdd.java

:\Users\jeeva\OneDrive\Desktop\java codes>java EvenOdd
nter a number: 69
9 is odd

:\Users\jeeva\OneDrive\Desktop\java codes>
```

3.c) Gcd:

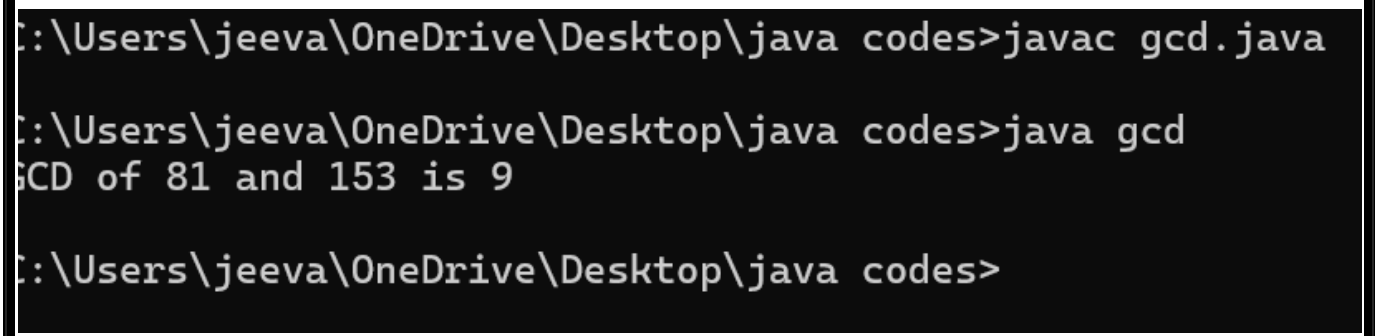
Code:

```
class gcd {
  public static void main(String[] args) {
    int n1 = 81, n2 = 153;
    int gcd = 1;

    for (int i = 1; i <= n1 && i <= n2; ++i) {
      if (n1 % i == 0 && n2 % i == 0)
        gcd = i;
    }

    System.out.println("GCD of " + n1 +" and " + n2 + " is " + gcd);
  }
}
```

Output:



3.d) For loop

Code:

```
        public class ForLoopExample {
    public static void main(String[] args) {
        for (int i = 1; i <= 5; i++) {
            System.out.println("Number: " + i);
        }
    }
}
```

Output;

```
C:\Users\jeeva\OneDrive\Desktop\java codes>javac ForLoopExample.java

C:\Users\jeeva\OneDrive\Desktop\java codes>java ForLoopExample
Number: 1
Number: 2
Number: 3
Number: 4
Number: 5

C:\Users\jeeva\OneDrive\Desktop\java codes>
```

3.e) : DoWhileLoopExample

Code:

```
public class DoWhileLoopExample {
   public static void main(String[] args) {
    int i = 1;
      do {
         System.out.println("Number: " + i);
       i++;
        } while (i <= 5);
             }
        }
```

Output:

```
C:\Users\jeeva\OneDrive\Desktop\java codes>javac  DoWhileLoopExample.java

C:\Users\jeeva\OneDrive\Desktop\java codes>java  DoWhileLoopExample
Number: 1
Number: 2
Number: 3
Number: 4
Number: 5
```

3.f) ForEachLoopExample

Code:

```
public class ForEachLoopExample {
     public static void main(String[] args) {
           int[] numbers = {1, 2, 3, 4, 5};
              for (int num : numbers) {
      System.out.println("Number: " + num);
   }
 }
}
```

Output:

```
C:\Users\jeeva\OneDrive\Desktop\java codes>javac ForEachLoopExample.java

C:\Users\jeeva\OneDrive\Desktop\java codes>java  ForEachLoopExample
Number: 1
Number: 2
Number: 3
Number: 4
Number: 5
```

3.g) NestedForLoopExample

Code:

```
public class NestedForLoopExample {
   public static void main(String[] args) {
       for (int i = 1; i <= 3; i++) {
           for (int j = 1; j <= 3; j++) {
               System.out.print("* ");
           }
           System.out.println();
       }
   }
}
```

Output:

```
C:\Users\jeeva\OneDrive\Desktop\java codes>javac NestedForLoopExample.java

C:\Users\jeeva\OneDrive\Desktop\java codes>java NestedForLoopExample
* * *
* * *
* * *

C:\Users\jeeva\OneDrive\Desktop\java codes>
```

3.f) Prime Checker:

Code:

```
public class PrimeChecker {
    public static void main(String[] args) { int num =
        29;
        boolean isPrime = true; if
        (num <= 1) {
            isPrime = false;
        } else {
            for (int i = 2; i * i <= num; i++) { // Removed
Math.sqrt()
                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:

```
PS D:\OOP\Exp 3 Basic Java Programs> javac PrimeChecker.java
PS D:\OOP\Exp 3 Basic Java Programs> java PrimeChecker.java
29 is a prime number.
```

3.g) WhileLoopExample:

Code:

```
public class WhileLoopExample {
    public static void main(String[] args) {
        int i = 1;
        while (i <= 5) {
            System.out.println("Number: " + i);
            i++;
        }
    }
}
```

Output:

```
C:\Users\jeeva\OneDrive\Desktop\java codes>java WhileLoopExample
Number: 1
Number: 2
Number: 3
Number: 4
Number: 5

C:\Users\jeeva\OneDrive\Desktop\java codes>
```

3.h) WhileLoopWithBreak:

Code:

```
public class WhileLoopWithBreak {
    public static void main(String[] args) {
        int i = 1;
        while (i <= 5) {
            if (i == 3) {
                break;
            }
            System.out.println("Number: " + i);
            i++;
        }
    }
}
```

Output:

```
C:\Users\jeeva\OneDrive\Desktop\java codes>javac WhileLoopWithBreak.java

C:\Users\jeeva\OneDrive\Desktop\java codes>java WhileLoopWithBreak
Number: 1
Number: 2

C:\Users\jeeva\OneDrive\Desktop\java codes>
```