SCHOOL OF
COMPUTING

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CH.SC.U4CSE24102

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.U4CSE24102 – Agneay B Nair*** 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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Java Codes

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Calculator.java

```java
import java.util.Scanner;

public class Calculator {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);

        System.out.print("Enter two numbers: ");
        double num1 = sc.nextDouble(), num2 = sc.nextDouble();

        System.out.print("Choose an operation (+, -, *, /): ");
        char op = sc.next().charAt(0);

        switch (op) {
            case '+':
                System.out.println("Result: " + (num1 + num2));
```

```
                break;
            case '-':
                System.out.println("Result: " + (num1 - num2));
                break;
            case '*':
                System.out.println("Result: " + (num1 * num2));
                break;
            case '/':
                if (num2 != 0)
                    System.out.println("Result: " + (num1 / num2));
                else
                    System.out.println("Division by zero is not allo
wed.");
                break;
            default:
                System.out.println("Invalid operation.");
        }
        sc.close();
    }
}
```

EvenOdd.java

```
import java.util.Scanner;

public class EvenOdd {
    public static void main(String[] args) {
        System.out.println("Input Enter the number:");
        Scanner myScannerObj = new Scanner(System.in);
        int num = myScannerObj.nextInt();
        if (num % 2 == 0) {
            System.out.println("Even");
        } else {
            System.out.println("Odd");
        }
        myScannerObj.close();
    }
}
```

Fibonacci.java

```
import java.util.Scanner;

public class Fibonacci {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter the number of terms: ");
        int n = sc.nextInt();
```

```
        int a = 0, b = 1, count = 0;
        System.out.print("Fibonacci Series: ");
        while (count < n) {
            System.out.print(a + " ");
            int temp = a + b;
            a = b;
            b = temp;
            count++;
        }
        sc.close();
    }
}
```

LargestOfThreeNums

```
import java.util.Scanner;

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

ReverseString.java

```
// Description: A program that reverses a string.
import java.util.Scanner;

public class ReverseString {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter a string: ");
        String str = sc.nextLine();

        String reversed = "";
        for (int i = str.length() - 1; i >= 0; i--) {
            reversed += str.charAt(i);
```

```
        }

        System.out.println("Reversed string: " + reversed);
        sc.close();
    }
}
```

PrimeCheck.java

```
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 n = sc.nextInt();

        boolean isPrime = true;
        if (n <= 1)
            isPrime = false;

        for (int i = 2; i <= Math.sqrt(n); i++) {
            if (n % i == 0) {
                isPrime = false;
                break;
            }
        }

        System.out.println(n + " is " + (isPrime ? "Prime" : "Not Pr
ime"));
        sc.close();
    }

}
```

PalindromeCheck.java

```
import java.util.Scanner;

public class PalindromeCheck {
    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, reversed = 0;
        while (num != 0) {
            int digit = num % 10;
            reversed = reversed * 10 + digit;
```

```
            num /= 10;
        }

        System.out.println(original + (original == reversed ? " is "
: " is not ") + "a palindrome.");
        sc.close();
    }
}
```

SimpleInterestCalculator.java

```
import java.util.Scanner;

public class SimpleInterestCalculator {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);

        // Input
        System.out.print("Enter Principal amount: ");
        double principal = sc.nextDouble();

        System.out.print("Enter Rate of Interest (%): ");
        double rate = sc.nextDouble();

        System.out.print("Enter Time (in years): ");
        double time = sc.nextDouble();

        // Calculation
        double simpleInterest = (principal * rate * time) / 100;

        // Output
        System.out.println("Simple Interest: " + simpleInterest);
        System.out.println("Total Amount: " + (principal + simpleInt
erest));
        sc.close();
    }
}
```

SumOfDigits.java

```
import java.util.Scanner;

public class SumOfDigits {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        System.out.print("Enter a number: ");
        int num = sc.nextInt();

        int sum = 0;
```

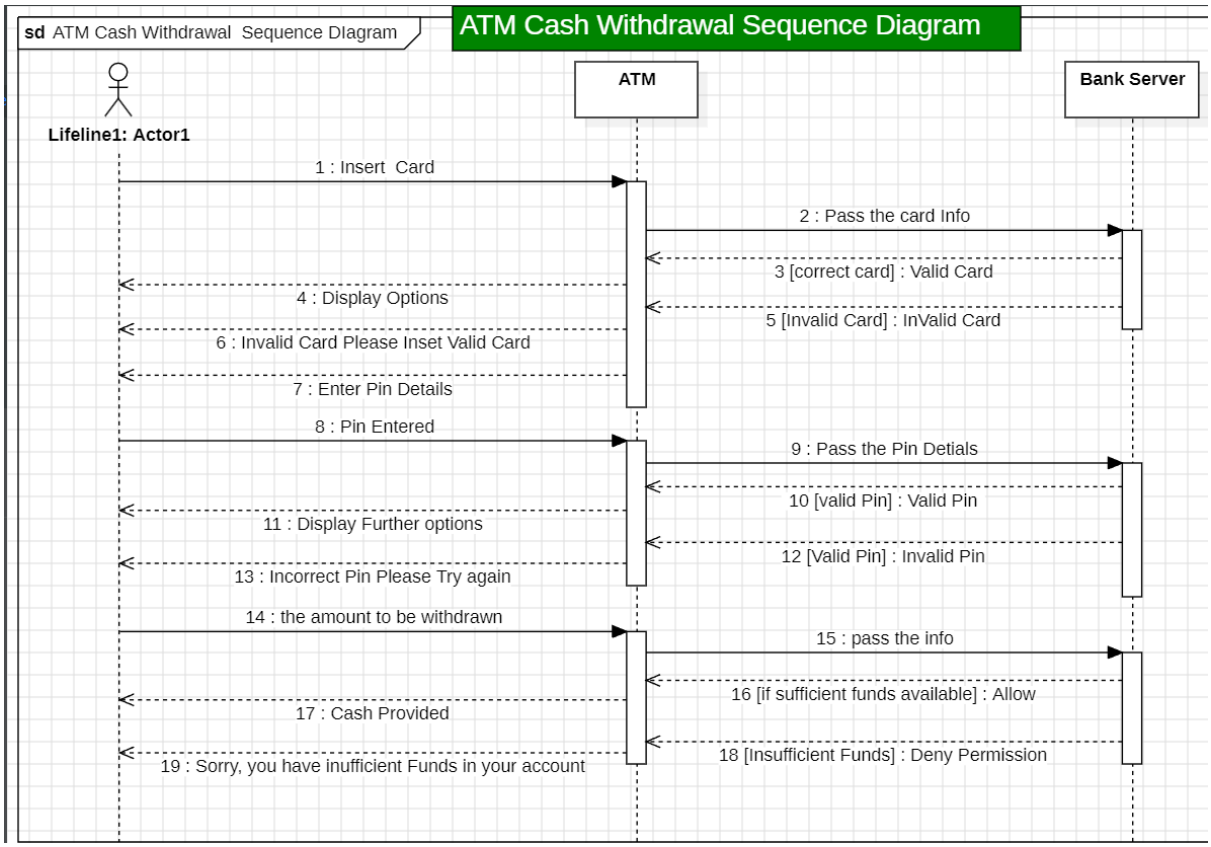
```
        while (num != 0) {
            sum += num % 10;
            num /= 10;
        }

        System.out.println("Sum of digits: " + sum);
        sc.close();
    }
}
```

TemperatureConverter.java

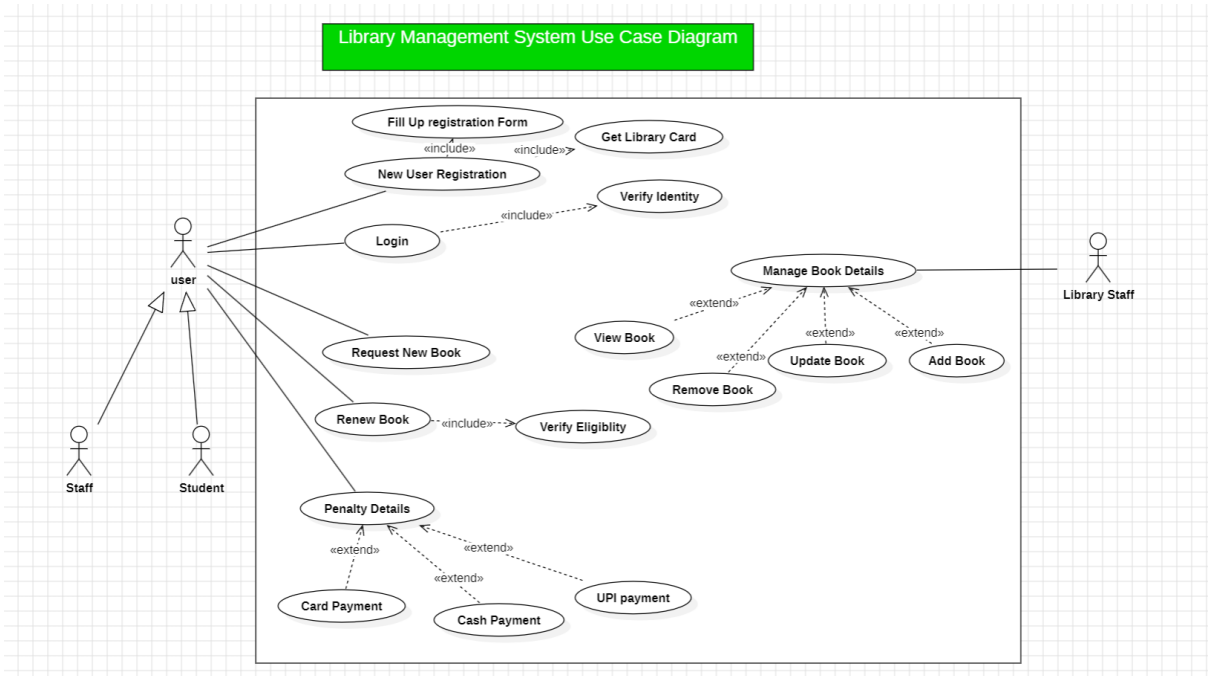
```
import java.util.Scanner;

public class TemperatureConverter {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);

        // Display menu
        System.out.println("Choose conversion type:");
        System.out.println("1. Celsius to Fahrenheit");
        System.out.println("2. Fahrenheit to Celsius");

        // Choice input
        System.out.print("Enter your choice (1 or 2): ");
        int choice = sc.nextInt();

        if (choice == 1) {
            // Celsius to Fahrenheit
            System.out.print("Enter temperature in Celsius: ");
            double celsius = sc.nextDouble();
            double fahrenheit = (9.0 / 5.0) * celsius + 32;
            System.out.println("Temperature in Fahrenheit: " + fahre
nheit);
        } else if (choice == 2) {
            // Fahrenheit to Celsius
            System.out.print("Enter temperature in Fahrenheit: ");
            double fahrenheit = sc.nextDouble();
            double celsius = (5.0 / 9.0) * (fahrenheit - 32);
            System.out.println("Temperature in Celsius: " + celsius)
;
        } else {
            System.out.println("Invalid choice. Please enter 1 or 2.
");
        }
        sc.close();
    }
}
```

UML Diagrams

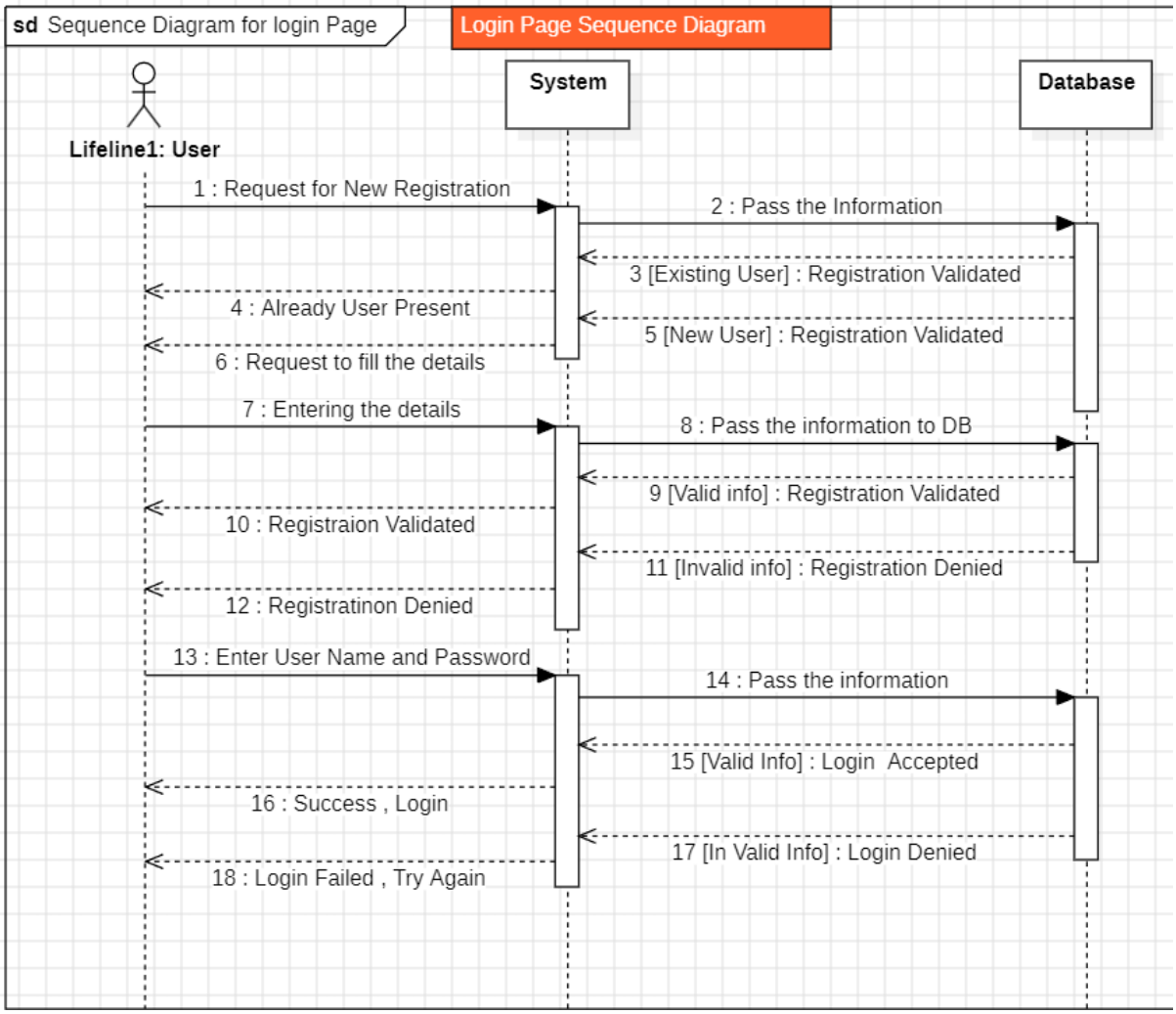
1. ATM Sequence Diagram



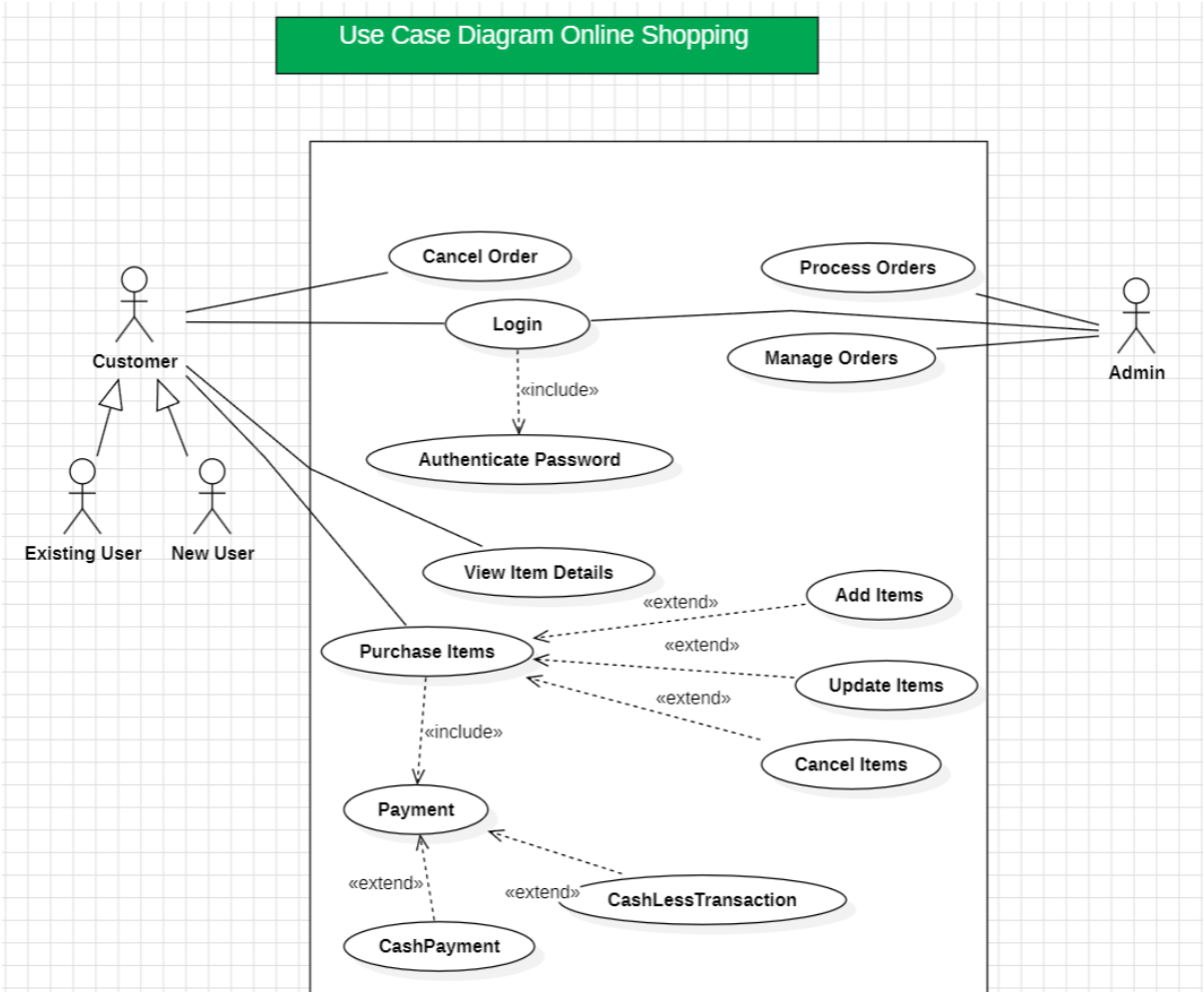
2. Library management system – Use case diagram



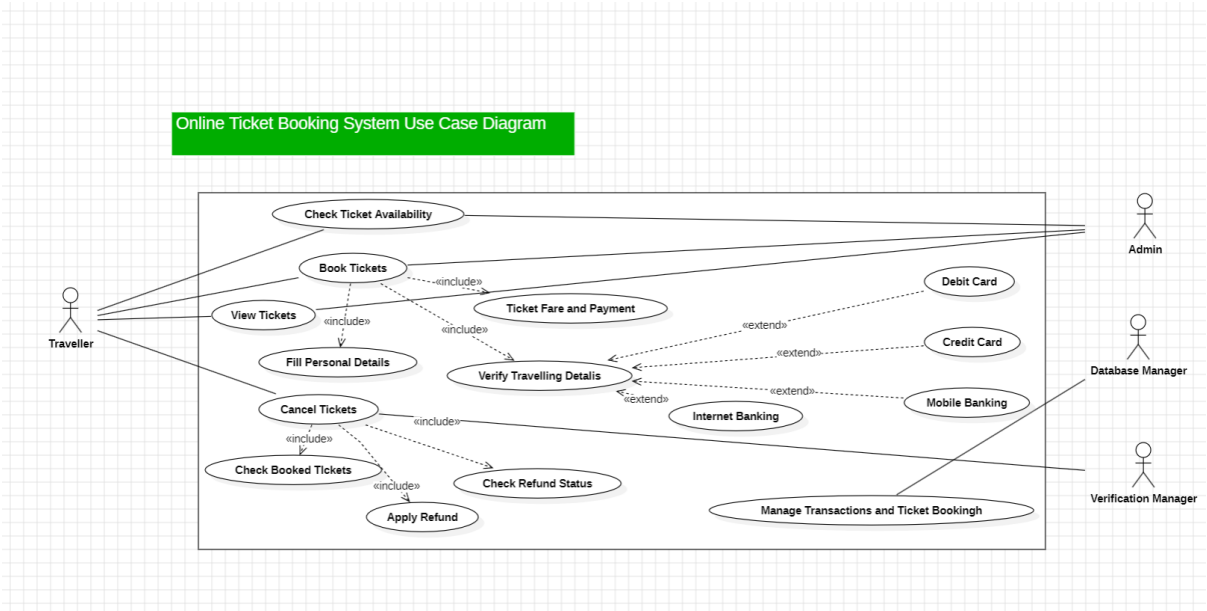
3. Login Page sequence Diagram



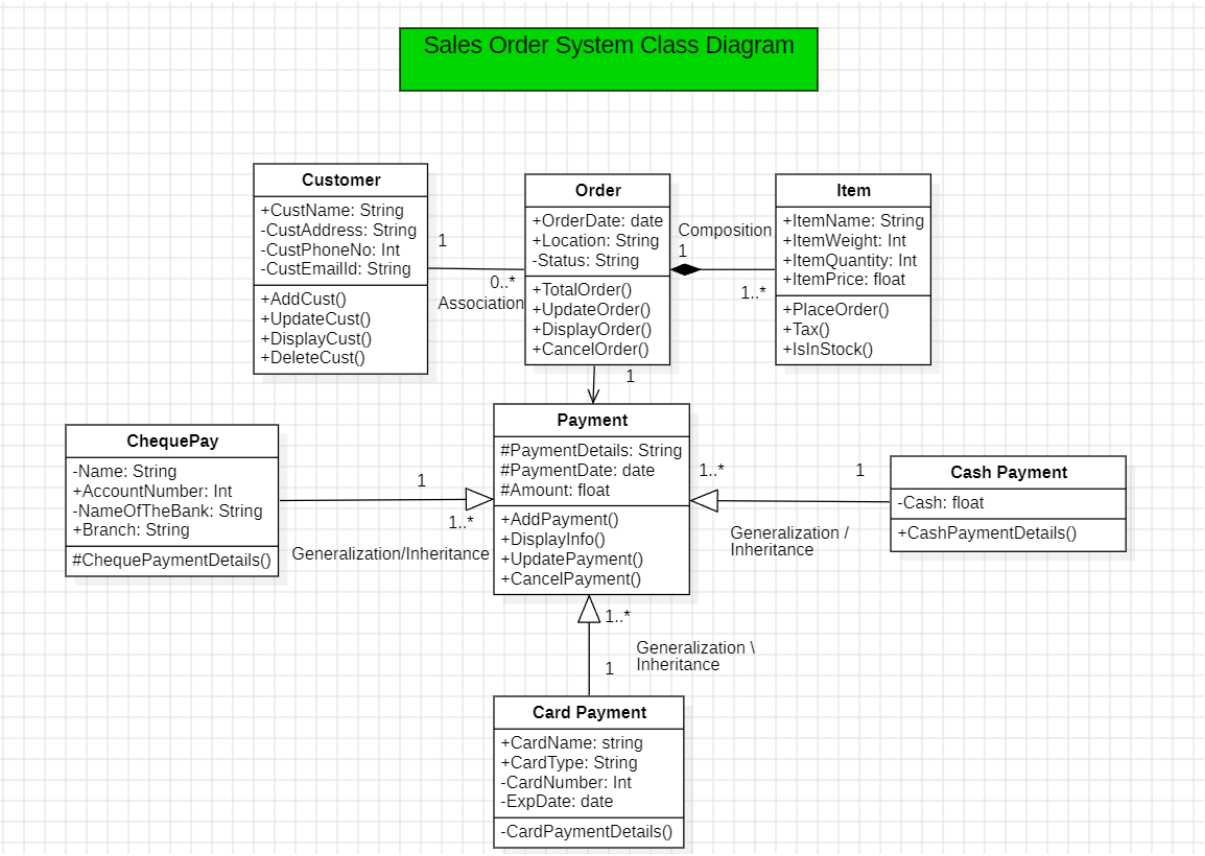
4. Online Shopping Use case Diagram



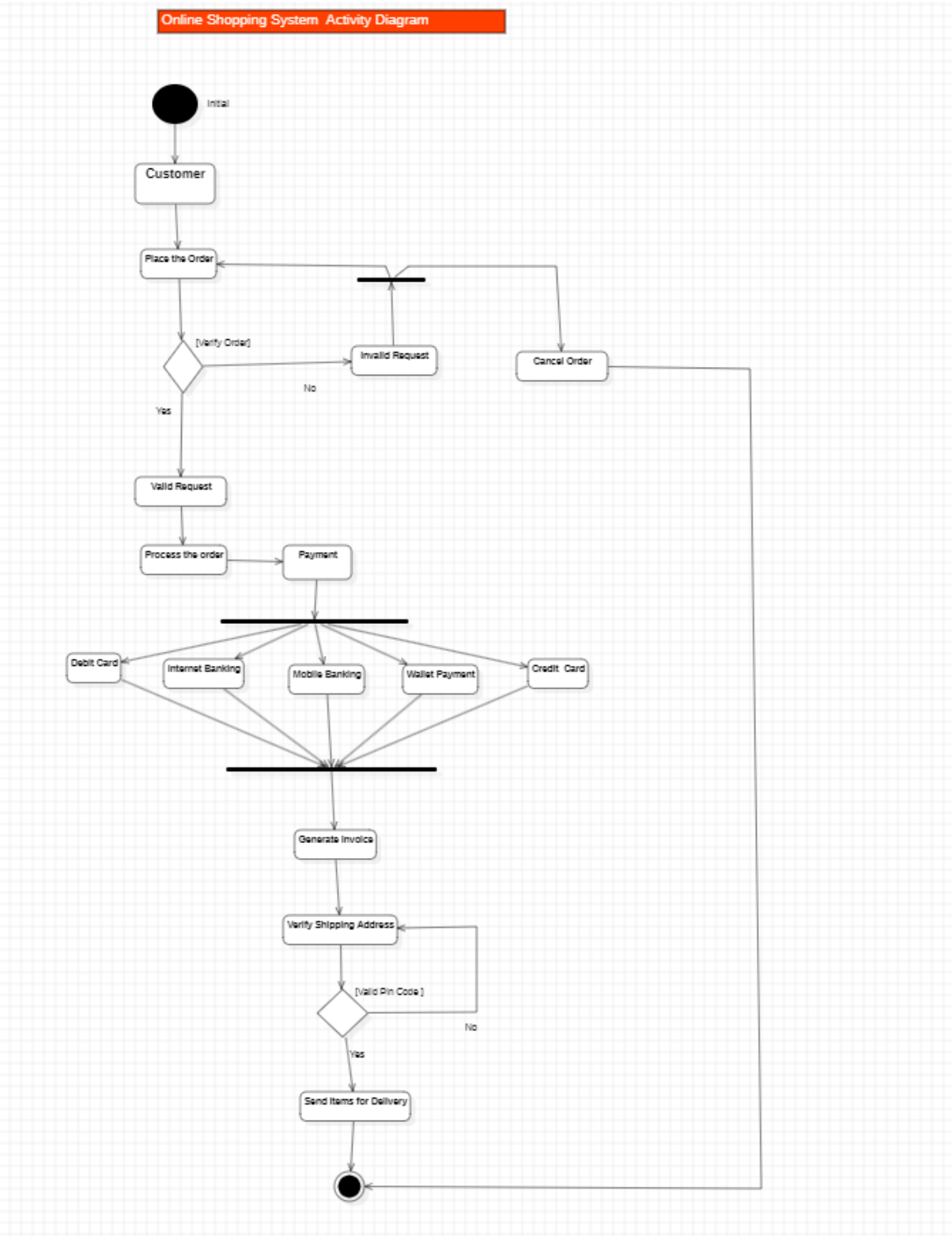
5. Online Ticket Booking Use case Diagram



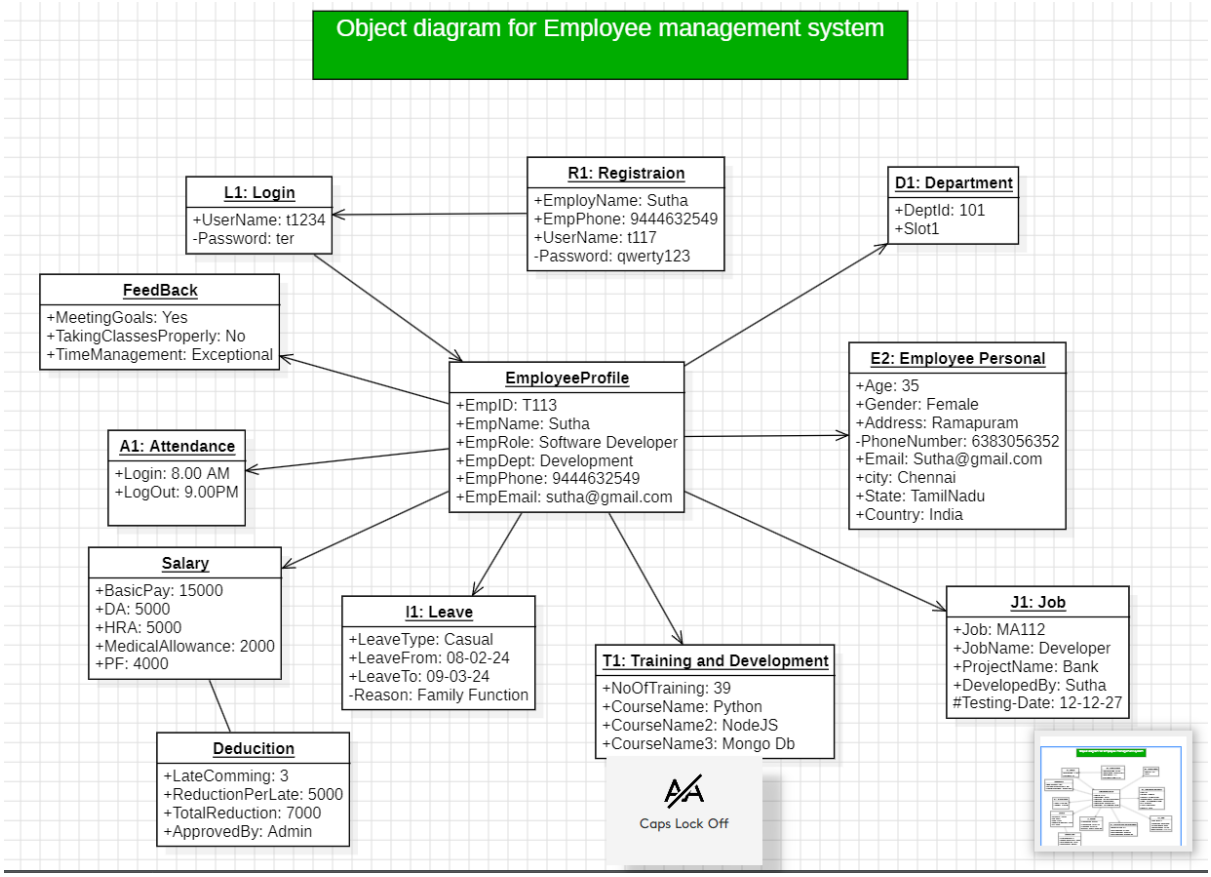
6. Sales Order System Class Diagram



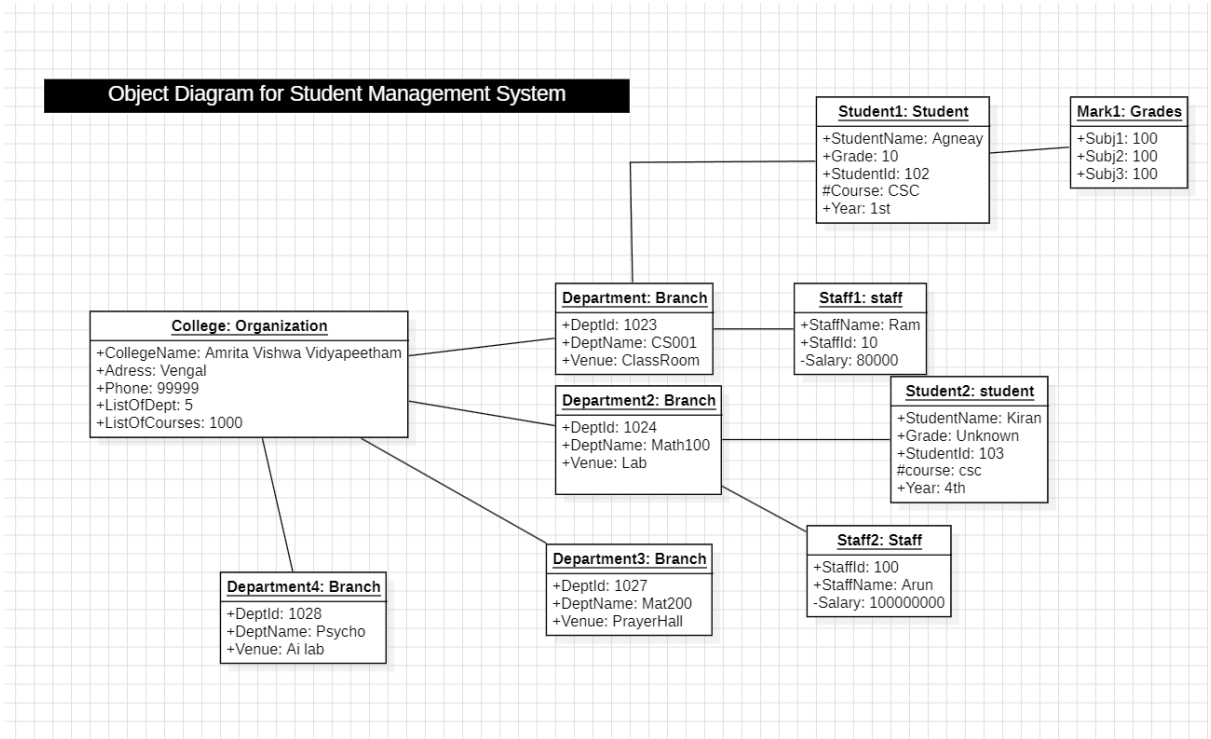
7. Online Shopping cart Activity Diagram



8. Object Diagram for Employee Management System

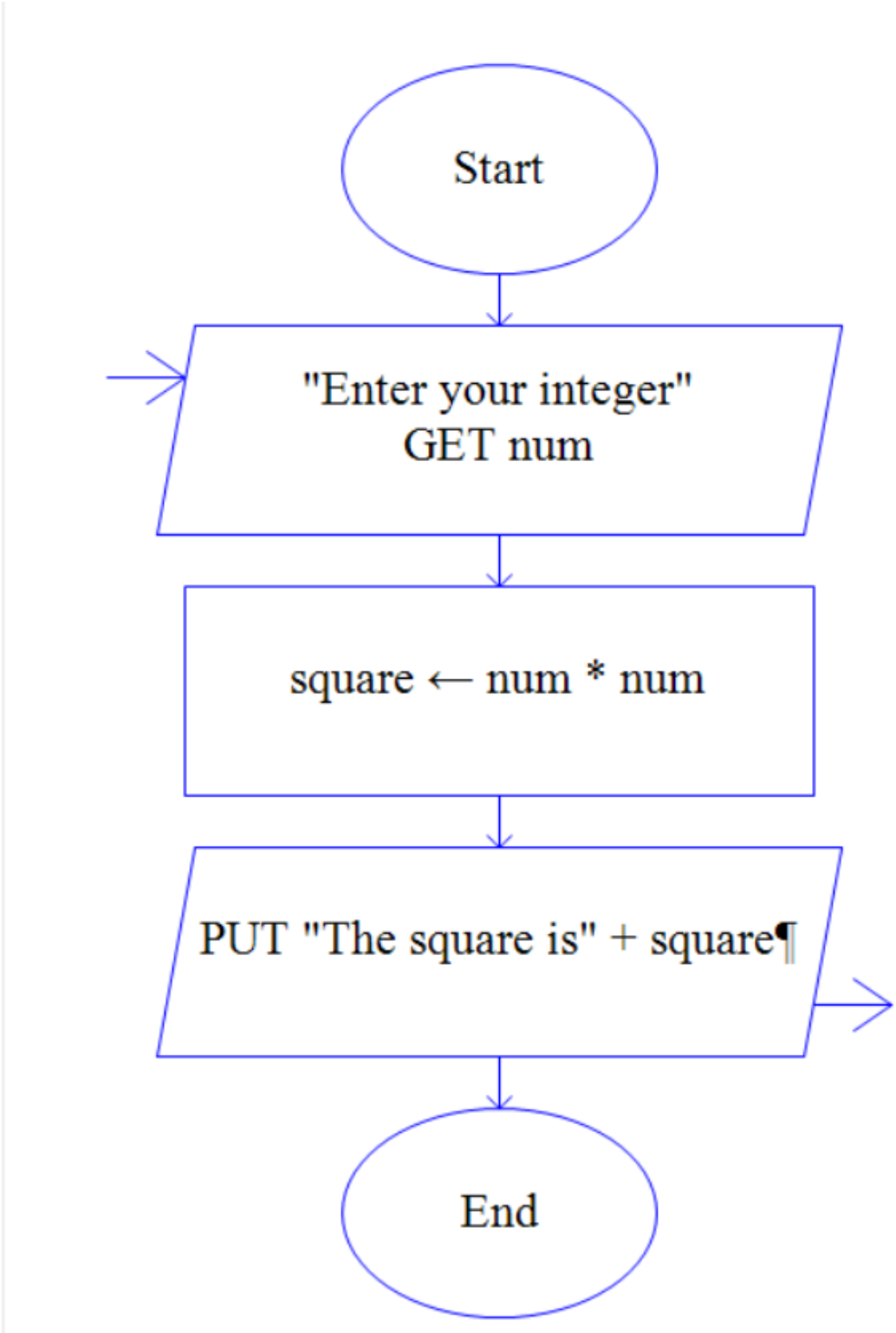


9. Object Diagram for Student Management System

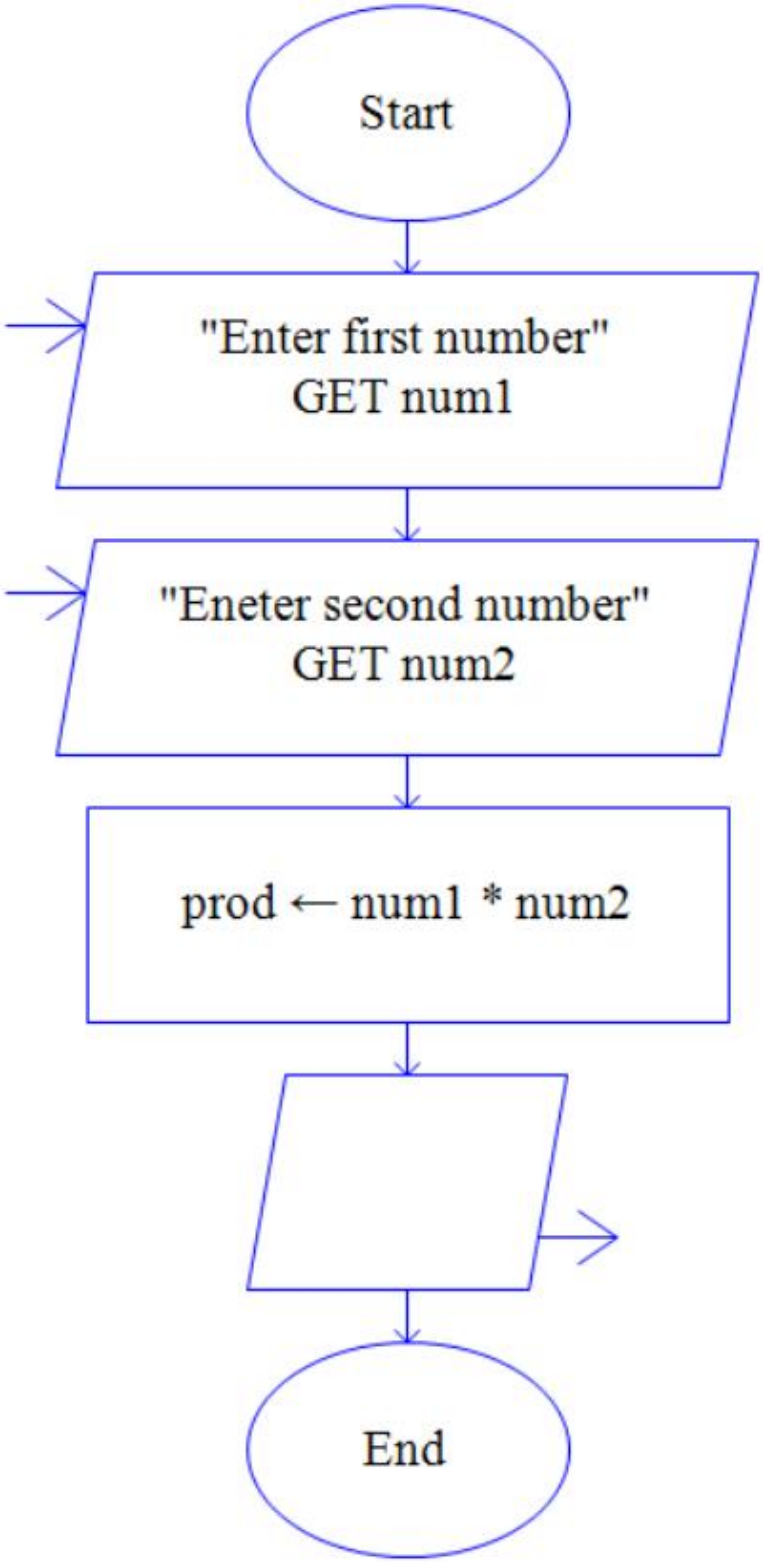


Raptor Programs

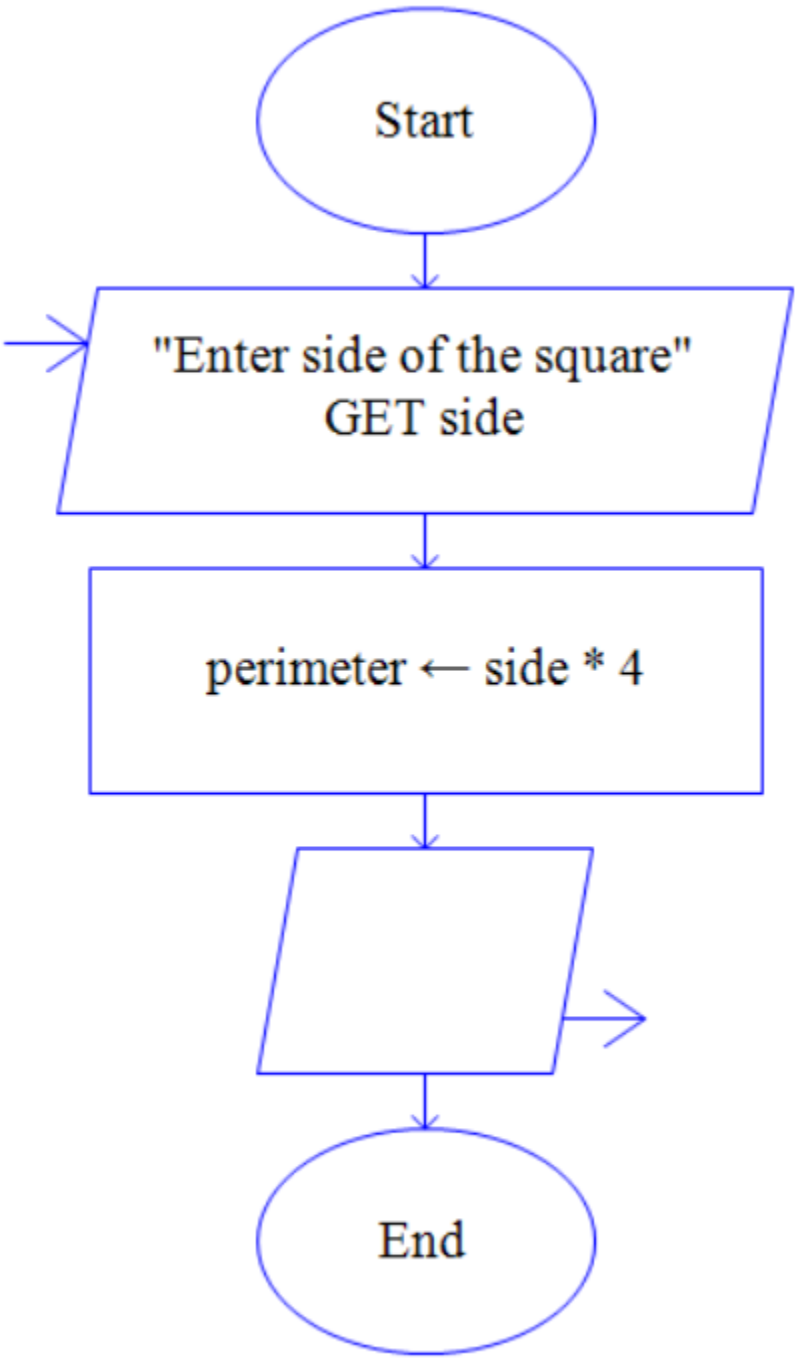
1. To find the square of a given number



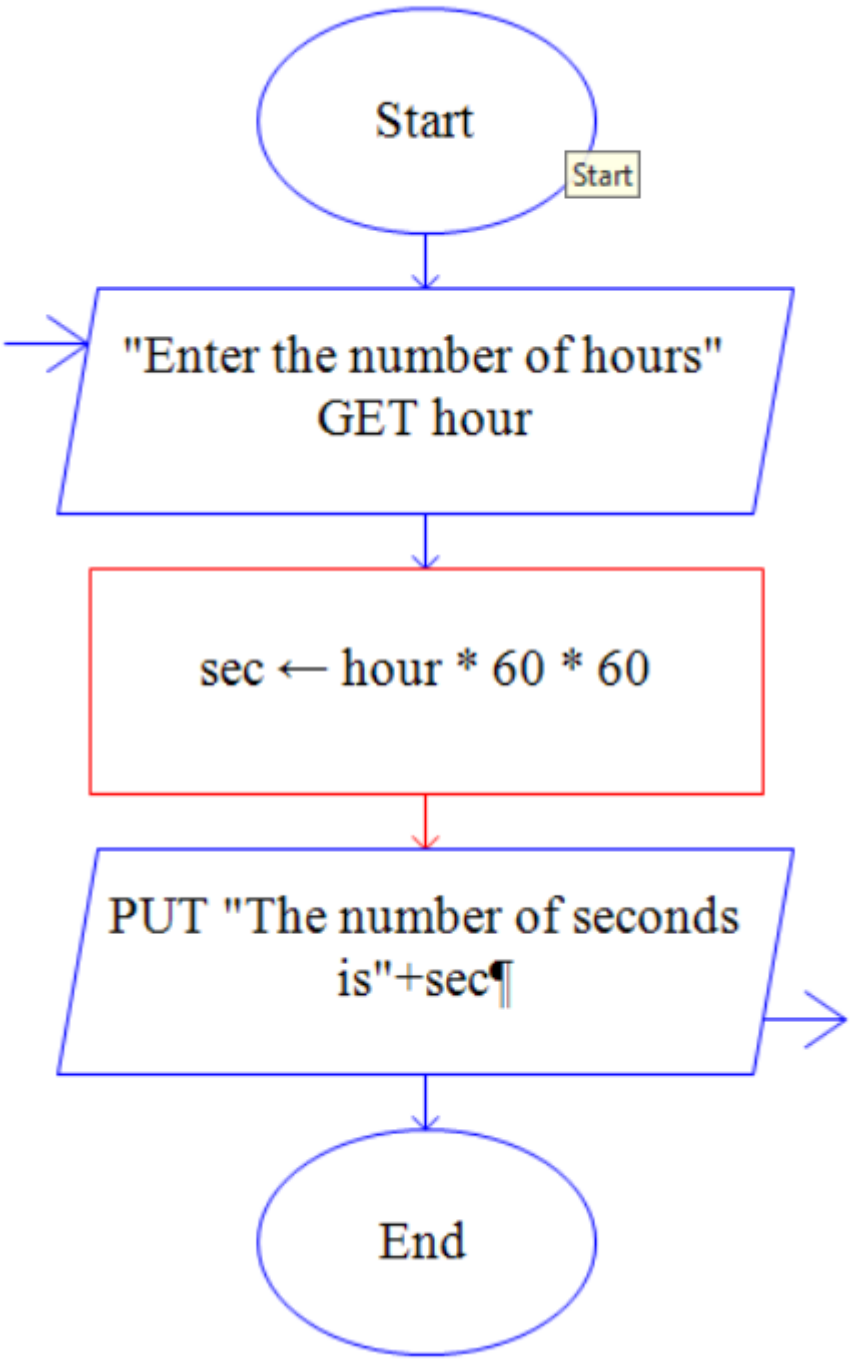
2. To find the product of two numbers



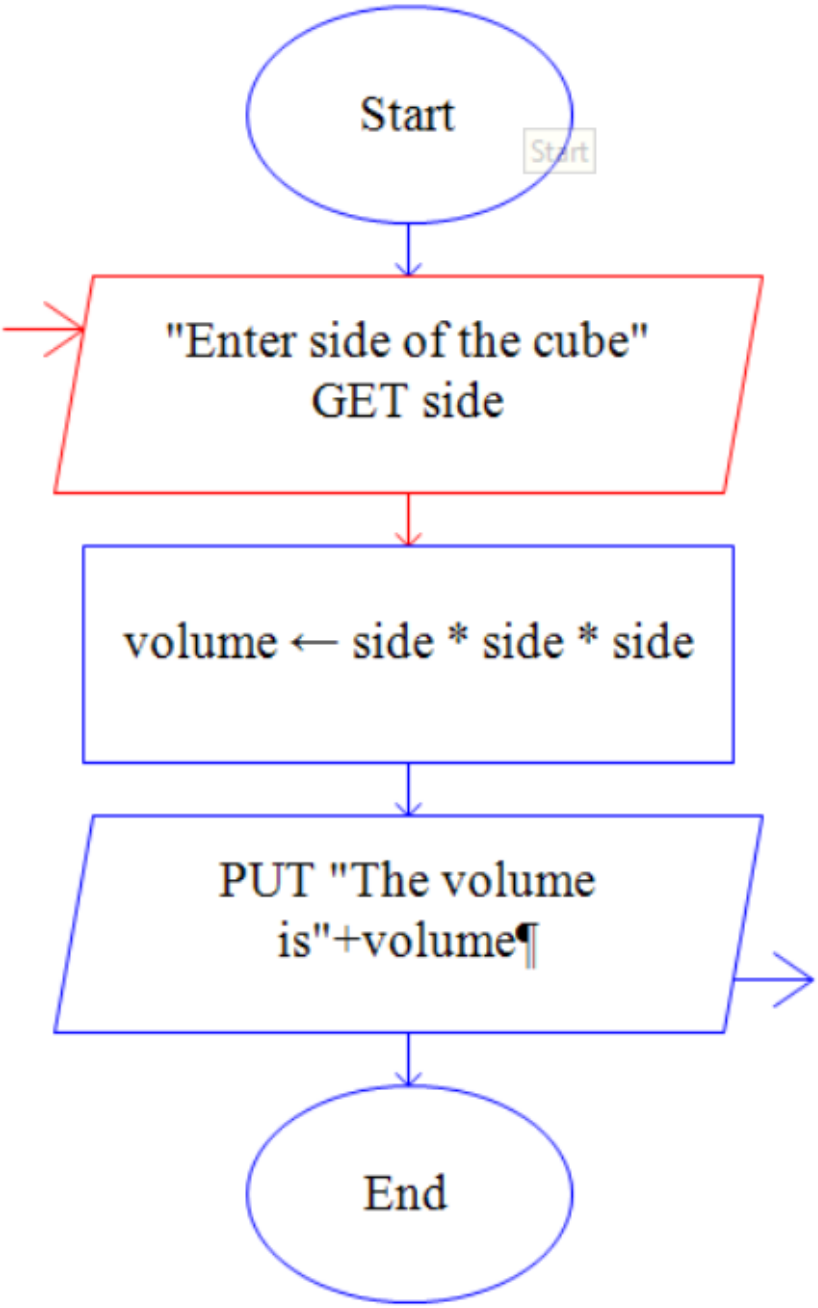
3. To find the perimeter of a square



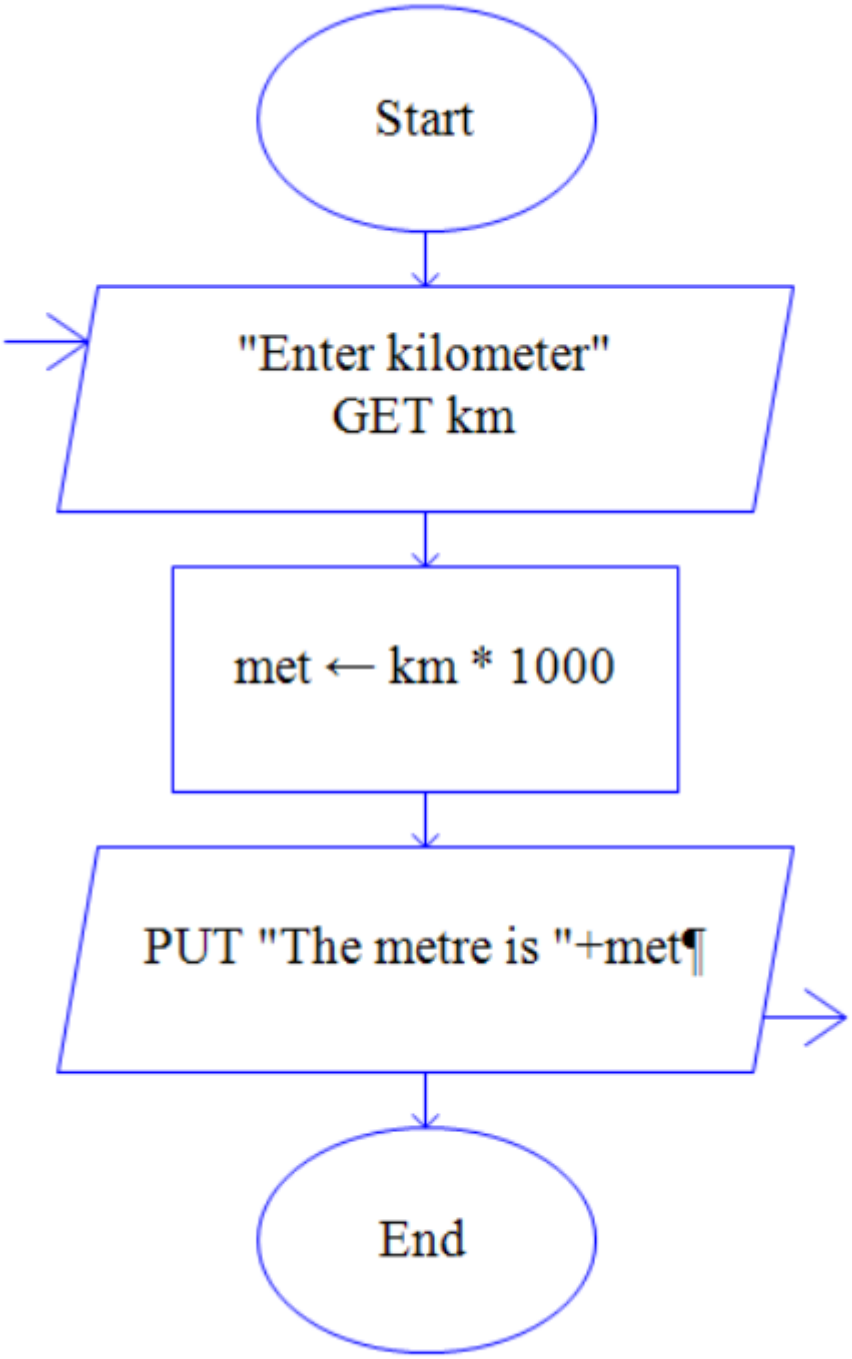
4. To convert hours to seconds



5. To find the volume of a cube



6. To convert kilometre to meter



7. To check if a person is eligible to vote