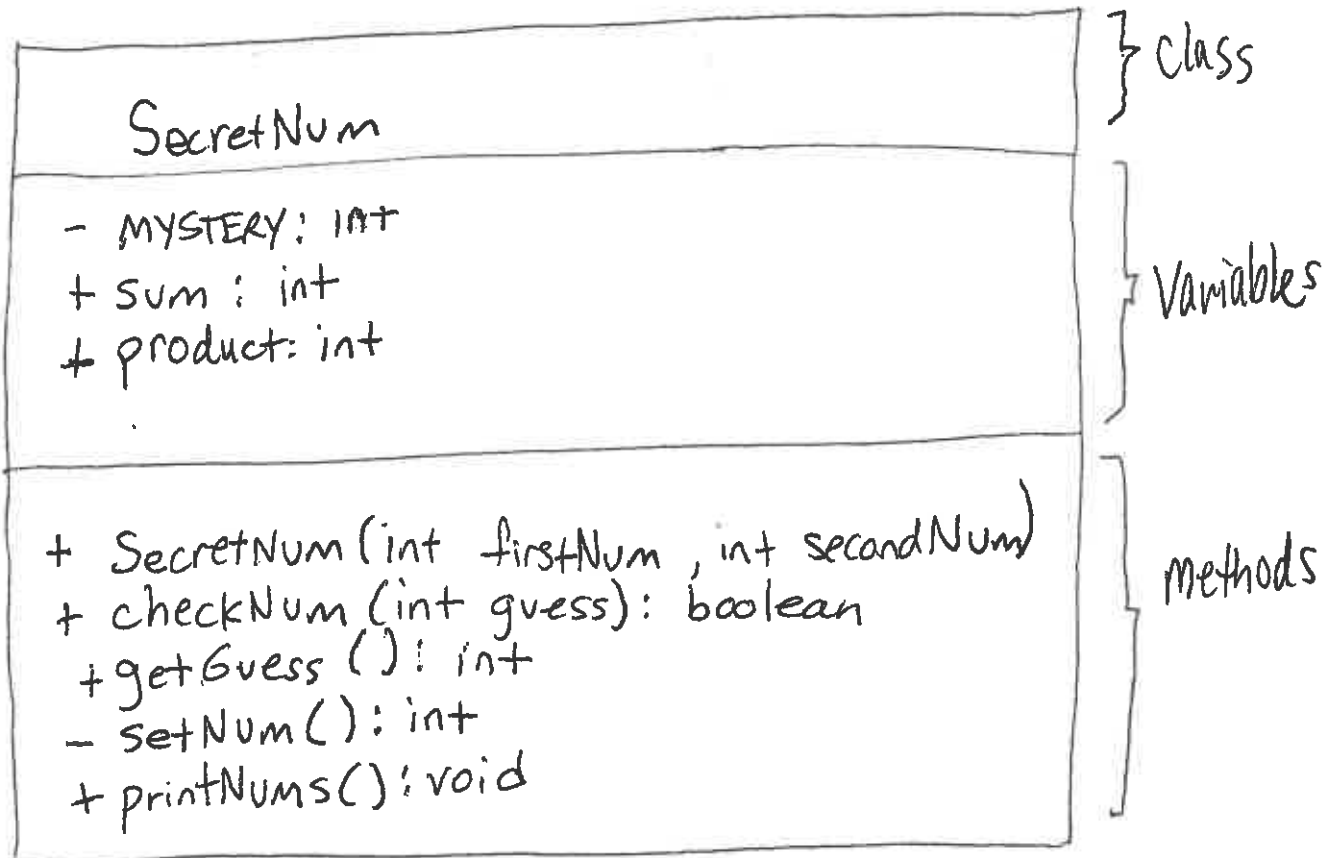


MYSTERY NUMBER PROGRAM

- Main method is in the NumberManipulation Class
- Both classes are in the same project
- Constructor is used to set up initial variables
- Methods have been decomposed with accessors + mutators
- Variables are passed by reference
- Note formal parameters + actual parameters
- New object of the SecretNum class is created
- Return types are given.
- If/else statement checks validity of user guess.



How could the program be improved?

- Encapsulation?
- Abstraction?

```

import java.util.Scanner;
public class NumberManipulation {
    public static void main (String[] args){
        Scanner scan=new Scanner(System.in);
        System.out.println("Enter an Integer");
        int num1=scan.nextInt();
        System.out.println("Enter a second Integer");
        int num2=scan.nextInt();

        SecretNum game1=new SecretNum(num1,num2);
        game1.printNums();
        if (game1.checkNum(game1.getGuess()))
            System.out.println("Correct! You guessed the
number.");
        else
            System.out.println("I'm sorry...That's not correct.");

        scan.close();
    }
}

```

```

import java.util.Scanner;
import java.util.Random;

public class SecretNum{
    private int mystery;
    int sum;
    int product;

    SecretNum(int firstNum, int secondNum){
        mystery=setNum();
        sum =firstNum + secondNum + mystery;
        product= firstNum * secondNum * mystery;
    }

    public boolean checkNum(int guess){
        boolean intMatch=false;
        if (guess==mystery)
            intMatch=true;
        return intMatch;
    }

    public int getGuess(){
        System.out.println("What is the Mystery Number?");
        Scanner scan=new Scanner(System.in);
        int userGuess=scan.nextInt();
        scan.close();
        return userGuess;
    }

    private int setNum(){
        int newNum;
        Random generator = new Random();
        newNum = generator.nextInt(20);
        return newNum;
    }

    public void printNums(){
        System.out.print("The sum of your numbers ");
        System.out.print("plus the mystery number is ");
        System.out.println(sum + ".");
        System.out.print("The product of the three numbers is ");
        System.out.println(product + ".");
    }
}

```

