

Credit Name: CSE 2nd Language Programming Credit  
Assignment Name: PrimeNumber

How has your program changed from planning to coding to now? Please explain?:

Planning to code this assignment, I was wondering that if I put "isPrimeNumber(number)" I would be finished. But coding now, I've realized that I must also make a function to check if a number is prime or not with a bunch of "if" statements.

```
1 public static void main(String[] args)
2 {
3     Scanner scanner = new Scanner(System.in);
4
5     // Prompt the user for a number
6     System.out.print("Enter a number: ");
7     int number = scanner.nextInt();
8
9     // Check if the number is prime
10    boolean isPrime = isPrimeNumber(number);
11
12    // Display the result
13    if (isPrime) {
14        System.out.println(number + " is a prime number.");
15    } else {
16        System.out.println(number + " is not a prime number.");
17    }
18
19    scanner.close();
20 }
```

I must prompt the question for a number for the user to type a number then make a "isPrimeNumber(number);" so that the program knows the meaning of a prime number. Then after the program it would tell me if the inputted number is a prime number or not.

```

// Function to check if a number is prime
public static boolean isPrimeNumber(int n) {
    if (n <= 1) {
        return false; // Numbers less than or equal to 1 are not prime
    }
    if (n <= 3) {
        return true; // 2 and 3 are prime numbers
    }
    if (n % 2 == 0 || n % 3 == 0) {
        return false; // Numbers divisible by 2 or 3 are not prime
    }

    // Check for prime using 6k +/- 1 rule
    for (int i = 5; i * i <= n; i += 6) {
        if (n % i == 0 || n % (i + 2) == 0) {
            return false;
        }
    }
    return true;
}

```

I made a function that brings the value of the “isPrimeNumber” and then make a couple of “if” and “return true/false” to check if the number is prime.