

Reflection Log

```
1 package Mastery;
2
3 import java.util.Scanner;
4
5 public class PrimeNumber {
6
```

Here I imported the scanner for the code.

```
    public static void main(String[] args) {
        // Create a Scanner object for user input
        Scanner userInput = new Scanner(System.in);
```

Here I created a new Scanner for the program.

```
        // Prompt the user for two numbers (range)
        System.out.print("Enter the starting number: ");
        int start = userInput.nextInt();
```

The program prompts the user to input two numbers, the first a starting number.

```
15         System.out.print("Enter the ending number: ");
16         int end = userInput.nextInt();
```

The user is prompted to enter the ending number.

```
18         // Display the prime numbers between start and end
19         System.out.println("Prime numbers between " + start + " and " + end + ":");
20         for (int i = start; i <= end; i++) {
21             if (isPrime(i)) {
22                 System.out.println(i);
23             }
24         }
25
```

The program displays the prime numbers between the starting and end numbers.

```
26         // Close the scanner to prevent resource leaks
27         userInput.close();
28     }
29 }
```

The program Closes the main scanner.

```
30 // Method to check if a number is prime
31 public static boolean isPrime(int num) {
32     if (num <= 1) {
33         return false; // Numbers less than or equal to 1 are not prime
34     }
35     for (int i = 2; i <= Math.sqrt(num); i++) {
36         if (num % i == 0) {
37             return false; // If divisible by any number other than 1 and itself, not prime
38         }
39     }
40     return true; // If no divisors, the number is prime
41 }
42 }
```

Now this is the method to check if the number is a prime number or not, first it checks if the number is less than or equal to 1 which makes it not a prime number. Then it checks if the number if it can be divided by more than just 1 and itself, if so it's not a prime number. If no divisors and everything else is true its a prime number.