Credit Name: CSE 2140 2nd Language Programming

Assignment Name: Digits mastery

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

At first I tried the boolean statement inside the main method, instead of create an own method for the boolean statement

```
//check if the number is prime or not.
boolean Prime(int n) {
   for(int i=2;i<n;i++) {
      if(n%i==0)
         return false;
   }
   return true;
}
```

After creating its own method, i realized there is another way to do it more efficiently

My first correction:

```
    for (int number = Math.min(start, end); number <= Math.max(start, end); number++) {
        if (isPrime(number)) {
            System.out.print(number + " ");
        }
    }

    scanner.close();
  }
  public static boolean isPrime(int number) {
    if (number <= 1) {
        return false; // Numbers less than 2 are not prime
    }
    for (int i = 2; i <= Math.sqrt(number); i++) {
        if (number % i == 0) {
            return false; // Found a divisor, not prime
        }
    }
    return true; // No divisors found, it's prime
  }
}
```

And my final version:

```
    // Find and display prime numbers in the range
    for (int i = firstNum; i <= secondNum; i++) {
        if (isPrime(i)) {
            System.out.print(i + " ");
        }
```

```
        }

        input.close(); // Close the scanner
    }
    // Method to check if a number is prime
    static boolean isPrime(int n) {
        // Check if the number is less than 2
        if (n < 2) return false;
        // Check if it is even (except for 2)
        if (n > 2 && n % 2 == 0) return false;
        // Check odd numbers only
        for (int i = 3; i * i <= n; i += 2) {
            if (n % i == 0)
                return false;
        }
        return true;
    }
}
```

The second version check first if it's divisible by 2, but now if it is not, it doesn’t check for any other even number, reducing a lot the total iterations.