

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

Planning Stage

- Identify Inputs and Outputs:
 - INPUT: User input a prime number
 - Output: Outputs by verifying if the user's number is a prime number.

Design the Structure:

- Has conditions that allows the program to show if the number is a prime number or not.

(The planning had changed Through)

Design the structure Change:

- Having to verify if the number is a prime number or not the (if statement) wouldn't proceed without processing the number.
- Processing the number inside the same method shows error. (So I created another method (ifPrimeNUMBER) that allows all the calculation , and verification of the user number to continue without disturbing the output.

Please explain?

```
Scanner UserInput = new Scanner(System.in);  
  
System.out.println("Enter any number:");  
  
int NUMBER = UserInput.nextInt();
```

My Code uses a variable called user Input which is a scanner to give the user the ability to input something the program can understand in this code (user input a number). The user input is stored in a variable called (Number).

```

public static boolean IFPrimeNUMBER
(int number)
{

    if (number <= 1) {

        return false;

    }
    for (int P = 2; P <= Math.sqrt(number); P++) {

        if (number % P == 0) {

            return false;

        }
    }

    return true;

}

```

The code takes in the number that the user inputted and checks whether the user has inputted an integer as well as the program checks to see if it's a prime number if not then the program outputs (return false). Then the number would be less than or equal to 1, Then the program processes the number to see if it can iterate from 2 up to the square root of the number, then return false. Then to allow a prime number the (number) must be able to complete all these requirements after all these conditions and their no divisors are found it then returns true to show it's a prime number.

```
Scanner UserINput = new Scanner(System.in);

System.out.println("Enter any number:");

int NUMBER = UserINput.nextInt();

if (IFPrimeNUMBER(NUMBER)) {
    System.out.println(NUMBER + " is a Prime Number");

} else {
    System.out.println(NUMBER + " is not a Prime Number");

}

}
```

After finishing the requirements of the methods (IFPrimeNUMBER) then put the if statements to output if the number is a prime number or not.