**Problem Statement :**

For any given input number ,Find the next and previous prime number.

**Requirements:**

**1)**Take a input variable number (number)

**2)** Take a variable forward prime to store the forward prime number of the given number.

3) Take a variable backward prime to store the backward prime number of the given number.

**TestCases:**

Input: 10

Previous Prime: 7

Next Prime: 11

Input: 2

Previous Prime: Undefined (no prime number less than 2)

Next Prime: 3

**Assumptions:**

Finding the Next Prime:

Start from the given number + 1.

Check each subsequent number to see if it is prime (using trial division or another method).

Return the first prime number found.

Finding the Previous Prime:

Start from the given number - 1.

Check each preceding number to see if it is prime.

Return the first prime number found.

import java.util.Scanner;

public class Main {

public static boolean isPrime(int num) {

if (num <= 1) {

return false;

}

for (int i = 2; i <= Math.sqrt(num); i++) {

if (num % i == 0) {

return false;

}

}

return true;

}

public static int nextPrime(int num) {

int next = num + 1;

while (!isPrime(next)) {

next++;

}

return next;

}

public static int previousPrime(int num) {

int prev = num - 1;

while (prev>1 && !isPrime(prev)) {

prev--;

}

return prev>1 ? prev :0;

}

public static void main(String[] args) {

Scanner scanner = new Scanner(System.in);

// System.out.print("Enter a number: ");

int number = scanner.nextInt();

int forwardPrime = nextPrime(number);

System.out.println(forwardPrime);

int backwardPrime = previousPrime(number);

if (backwardPrime != -1) {

System.out.println(backwardPrime);

} else {

System.out.println(number);

}

scanner.close();

}

}