Generating Prime Numbers

You have been given a program prime.cpp which was written by another programmer and contains some bugs. The instructions the other programmer was following can be seen below. Your task is to find and fix any / all bugs until the program follows the instructions perfectly.

For each bug you find, write down the following details.

1) How you found out about the bug.

2) Where the source of the bug is.

3) How you figured out where the source of the bug.

4) How you fixed the bug.

5) How you figured out how to fix the bug.

6) Any and all relevant details about the strategies and techniques you used to find and fix the bug.

– Original Instructions –

Write a program that generates prime numbers. The user should enter a value `n` and the program should print a prime number greater than `n` by testing all numbers (n+1, n+2, n+3, …) until a prime number is found.

The program should not allow the user to enter a number less than 2 or greater than 50000.

The program should record all the numbers it checks for primality and print them out to the user before printing the actual prime number found. I recommend you use a vector for this part! The program should also print the value of `n` which the user enters immediately after they enter it. See the example output below where the input the user types has been marked in bold.


```
./prime
This program will generate a prime number greater than n.
Please enter a value n [2, 50000]: 1000
n: 1000
attempt 0: 1001
attempt 1: 1002
attempt 2: 1003
attempt 3: 1004
attempt 4: 1005
attempt 5: 1006
attempt 6: 1007
attempt 7: 1008
Prime Number: 1009
```