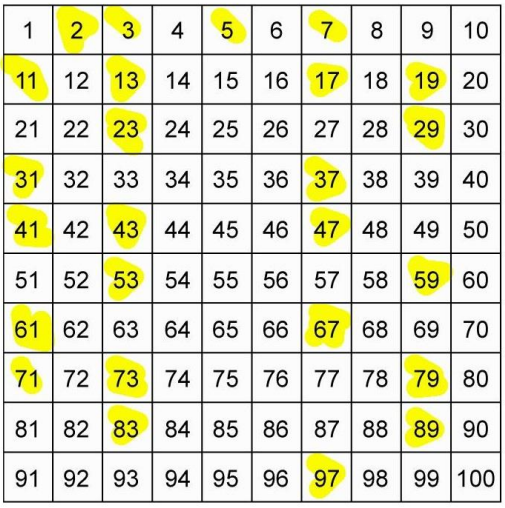
C++ Programming Assignment (#07)

Date: Apr. 28, 2016
Instructor: Yoo, Younghwan
Due date: May 4, 2016

Programming Projects



1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

1. Define a class named `PrimeNumber` that stores a prime number. The **default constructor** should set the prime number to 1. Add **another constructor** that allows the caller to set the prime number. Also, add a function to get the prime number. Finally, **overload the prefix and postfix ++ and -- operators** so they return a `PrimeNumber` object that is the next larger prime number (for ++) and the next smaller prime number (for --). For example, if the object's prime number is set to 13, then invoking ++ should return a `PrimeNumber` object whose prime number is set to 17. Create an appropriate test program for the class.

Sample dialogues:

< 1st trial >

```
Input a Prime Number: 17
Menu:
1. The next larger prime number
2. The next smaller prime number
Choice) 1
The next larger prime number of 17 is 19
```

< 2nd trial >

```
Input a Prime Number: 17
```

```
Menu:
1. The next larger prime number
2. The next smaller prime number
Choice) 2
The next smaller prime number of 17 is 13
```

< 3rd trial >

```
Input a Prime Number: 97
Menu:
1. The next larger prime number
2. The next smaller prime number
Choice) 1
The next larger prime number of 97 is 101
```

< 4th trial >

```
Input a Prime Number: 3
Menu:
1. The next larger prime number
2. The next smaller prime number
Choice) 2
The next smaller prime number of 3 is 2
```

< 5th trial >

```
Input a Prime Number: 2
Menu:
1. The next larger prime number
2. The next smaller prime number
Choice) 2
2 is the smallest prime number
```