CS120 - Computer Science I
Assignment #6
Spring 2014

The purpose of this assignment is to design a class that will simulate a combination lock. This is the type of lock that you might see on a sports locker, where you must execute a series of turns in order to open the lock. In addition, this lock has the additional feature that if the user attempts to open the lock three times without inputting the correct combination, it will permanently lock out the user, until they start again.

For this assignment, some of the class interface (declaration) has been provided below. You will need to write the class members necessary to implement the entire class.

A typical combination lock requires the input of three values. After turning the lock several turns in one direction (either to the left or right), we move the dial to the first number. Then we turn the dial one full turn in the other direction to the second number. Finally, we turn the dial in the first direction to the final number, after which we can open the lock.

For the simulated combination lock we do the same thing. The value of the combination is specified with the constructor, which requires four arguments. The first argument is a `char` that specifies the initial direction we should spin the dial - the legal values are 'L' for left, or 'R' for right. The remaining three values are the three numbers that make up the combination for the lock.

A main program should be written to test your class. It should first use the constructor to create an instance of the lock, along with its combination. Then it should ask the user for input - one of:

- `R xx` - (where xx is a number) - move the lock to the right to the number specified

- `L xx` - move the lock to the left to the number specified

- `U` ("unlock") - try to open the lock

If the sequence of moves is correct, the program should so state, and the program should terminate. If the combination is not correct then it should allow the user to try again. After three unsuccessful tries, the program should terminate after telling the user that the combination was incorrect.

Once you have tested your class and main program, submit your files via `cscheckin`, and turn in a hard copy of your code.

A partial class interface follows:

```
class CombLockClass
 {
  public:
    void turnleft(int); // move the dial left until we reach the number specified
    void turnright(int}; // move the dial right until we reach the number specified
    int unlock(); // check to see if the correct combination was input. Return values are
         0 - inputs are not correct
         1 - inputs are correct, so open the lock
        -1 - three or more unsuccessful tries, so lock out user forever
    CombLockClass(char, int, int, int); // constructor, as described above
  private:
      // the private values should be specified here.
};
```