Homework 05

Due Date: Monday 24 February 2014 11:59 PM MST
Note: If you submit after the due date (but before the hard deadline), your submission score will be penalized by 20%.

Hard Deadline: Wednesday 26 February 2014 11:59 PM MST
Note: If you submit any time after the hard deadline, you will not receive credit.

Problem 01 (15 points)

Another weakness of C++ is that it does not automatically check array indexes to see whether they are in bounds. (This makes array operations faster but less safe.) We can use a class to create a safe array that checks the index of all array accesses. Write a class called safearay that uses an int array of fixed size (call it LIMIT) as its only data member. There will be two member functions. The first, putel(), takes an index number and an int value as arguments and inserts the int value into the array at the index. The second, getel(), takes an index number as an argument and returns the int value of the element with that index.

```
safearay sa1; // define a safearay object
int temp = 12345; // define an int value
sa1.putel(7, temp); // insert value of temp into array at index 7
temp = sa1.getel(7); // obtain value from array at index 7
```

Both functions should check the index argument to make sure it is not less than 0 or greater than LIMIT-1. You can use this array without fear of writing over other parts of memory. Using functions to access array elements doesn't look as eloquent as using the [] operator. In Chapter 8 we'll see how to overload this operator to make our safearay class work more like built-in arrays.

Problem 02 (15 points)

Write a function called eraseSubstring that erases the sequences "by" and "BY" from a string. The function prototype is as follows:

```
void eraseSubstring(string& input, string substr);
```

Where "input" is the input string and "substr" is the substring that should be erased from the input string. In this problem, substr should be "by" and "BY".

Write a main program to ask the user to input a string. Then call the above function to erase the substrings from the input string, and display the result.