University of Utah School of Computing

CS 3500/5010

Handout 3

September 9, 2010

Problem Set Two

In this problem set, you will be creating a Visual Studio solution that solves the problem described below. Your solution must be called ps2 and it must consist of two projects called StringList and StringListTests. Use C# as your implementation language.

We will retrieve your solution for grading by running the Linux command

(put it all on one line) where **#########** is your grading password and **XXXXXXXX** is your CADE login name. We will run the command (which will give us the most recently committed version of your solution) sometime on the morning of September 15. (If you're still working on the morning of September 15, be sure that you don't commit a broken solution.)

You would be wise to verify that the command above works with your repository. If it doesn't work for you, it won't work for us!

Problem

Begin by opening the solution ps2-skeleton from the course repository, which is

svn://lenny.eng.utah.edu/home/cs3500/examples/

This will be your starting point.

The solution contains a project StringList that contains the skeleton of a carefully specified class called StringList. Your job is to complete the implementation of StringList. Adhere strictly to the specification; it is precise but not tricky. Do not change the public interface of the class at all.

The solution you just opened is stored in my repository. You will need to create (and add to your repository) your own solution called ps2 with project StringList. Copy StringList.cs into your project.

Be sure that you work on your project, and not mine, because you won't be able to commit any changes that you make to my project.

In your implementation, you may not make use of arrays or any of the built-in data structures of C#. You should represent your StringList objects with doubly-linked lists of Element objects. An Element object should contain a string along with references to two other Element objects. You will need to define your own Element class.

Pay particular attention to designing and documenting your StringList representation.

You should use the Unit Test Wizard to add a project called StringListTests to your solution. As the name suggests, this project should contain unit tests for the StringList class. Be sure that your unit tests achieve 100% code coverage.

Grading

Your grade will be based on the quality and the correctness of your implementation of StringList, and on the quality, correctness, and completeness of your unit tests.