**CS41 Programming Assignment #1**

**Total Point:** 100 **Due Date:** 02/21/2016, Tuesday

**Assignment Description:**

Program assignment #1 will focus on ADT specification and implementation.

Your job is to implement a **sequence** class (ADT). Then write an application program that will test your ADT implementation.

**Tasks:**

1. Implement the sequence class from Section 3.2 of the textbook. The documentation and definition portion of this **sequence** ADT is provided in textbook (pp.124-133), and is posted in BlackBoard of this class too.

Also implement two operators **+** and **+=** for the ADT. For the **+** operator, x**+**y (a new sequence) contains all the items of x, followed by all the items of Y.

The statement x **+=** y appends all of the items of y to the end of what’s already in X.

For simplicity, let’s assume the **sequence** contains items of (key, value) struct type and the capacity of the container is 30.

1. Write a simple application to manage a playlist of your favorite music, where the **sequence** class is used to insert, delete, search and print the title of music.

Your application should read in struct data (ID, title) of each piece of music and insert them onto a **sequence**. It should be able to insert an item at a specified location, find and display the music currently at play, delete a specified item from the sequence as well as display the entire list of music in the sequence. Also create two playlists to test the overloaded + and += operators.

**Program Requirements:**

1. The program should include the following information as comment on top of application program source code:

* Programming assignment number
* Name(s) of your programming team
* Brief description on what the program will do

1. Use iostream for I/O; create your own namespace (if C++ is used)

**Grading:**

Create and run your program using IDE of your choice (CodeBlock, Visual C++, Netbean, Eclipse). Print the **source code, program input/output text, and a copy of the executable (.exe or jar file in USB or CD)** for grading. ***The turn in documents must be legible. Extremely tiny font or light/blur inks used in printing make it impossible to read and grade your assignments.***