

COSC 3100 – Data Structures II

Assignment 5

Deadline October 2, 2023

This requires an update of Assignment 3, implementing an ArrayList to store Stock objects. Any recommendations provided for this assignment should be followed and your code updated accordingly.

In this application, read 8 Stock objects from the text file “Stock.txt” (on the course webpage) and insert them into the ArrayList in **ascending order**.

The ‘binarySearch’ function will need to be updated because the data is now in **ascending order**.

The ‘print’ function should be updated:

If the ArrayList ‘print’ function is called with no argument, then it will write the information to the standard output stream. However, a variable of type ‘ofstream’ can be passed in which case it will write the information to a file.

Add the following functions to the ArrayList class:

In each of these ‘remove’ functions, if an element is actually removed from the ArrayList then the following elements should be moved down to clarify that all current elements are in order from the beginning of the list.

bool remove(const T& s);

A function to remove an item at from the ArrayList. It should return ‘true’ or ‘false’ depending on whether it found the item.

bool removeRange(int a, int b);

A function that can be called with two integer arguments, and the items within this range should be removed. For example, if ‘1’ and ‘3’ are passed then elements 1, 2, and 3 should be removed. Again, it will return ‘true’ or ‘false’ depending on whether this full removal is possible.

Develop code within ‘main’ that calls all of the ArrayList member functions and clarifies that they work correctly.

THE DEPARTMENT STANDARDS FOR “STYLE GUIDELINES” SHOULD BE FOLLOWED IN ALL CODE.