

# CS5403 Data Structures and Algorithms

## Assignment 7

Assigned date: 12/03/2015

Due date: 12/11/2015

Please include your name in your source file

Do not use a separate header file, application file and implementation file. Instead, put all your code in a single file called hw7.cpp and submit it via the Blackboard website.

### Problem:

MergeSort is a very fundamental algorithm, therefore it is important to deeply understand it. For this purpose in this homework you will be modifying the MergeSort code that was presented in the Lecture slides. Basically modify the code to complete the following task:

- Your program should take a list of integers and sort them. Your program should also takes a flag (A or D) as an input which specifies the sorting mode (ascending or descending). For instance if the input is:

A 5 2 34 123 23 35

Your program should output:

2 5 23 34 35 123

And similarly if the input is:

D 5 2 34 123 23 35

Your program should output:

123 35 34 23 5 2.

- Your program should keep track of how many times an item is copied from data array to temp array and print this number to the screen. (Hint. What do you think this number will be when the length of your input array is n? )