Homework Assignment #3 – Sorting Algorithms
by Evan Olds
Cpt S 223 – Advanced Data Structures

Submission Instructions:

Submit source code (zipped) to Angel BEFORE the due date/time. If the Angel submission is not working, then submit to TA via email BEFORE the due date/time.

Optional: Include a readme.txt file in the zip with any relevant information that you want the grader to be aware of.

Assignment Instructions:

Read all the instructions *carefully* before you write any code.

Open the Visual Studio 2012 project included with the zip from Angel that contains these instructions. Complete the implementation of the ArraySorter class functions. You must implement 3 functions in this C++ class to cover 3 different sorting algorithms:

- insertion sort
    - Your implementation MUST have the capability of taking a gap value so that shell sort can use it
- merge sort
    - You may implement the one discussed in class and in the lecture notes or if you want you can try the "natural variant" discussed by various web sources
- quick sort

The existing code is set up to generate a random number array and call the class member functions to sort it based on chosen menu options. There's a verification function written for you to check whether or not your sorting implementations work correctly. It is called automatically in main.cpp after one of your sorting functions is called. It should be fairly self-explanatory when you run it.

You need only to complete the ArraySorter class. The functions in the main.cpp and main.h files do not need to be modified to correctly complete this assignment. If you make changes to either of these files for testing purposes then revert those changes before submitting or you may lose points. You do NOT need to modify main.cpp or main.h to complete this assignment.