**Scoring Rubric for Project 3 : BubbleSort**

*Due 10/03/2019 @ 3:30 pm*

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|  | **Score** | **Maximum** |
| **Execution (50 pts):** | | |
| Program compiles without errors (warnings are okay) | 50 | **50** |
| **Implementation (40 pts):** | | |
| Uses function declarations as provided | 5 | **5** |
| Main function includes at least one unit test for Swap (can use assert or printed output) | 5 | **5** |
| BubbleSort works for input size of 42 and 47 (all or nothing) | 5 | **5** |
| Use a dynamically allocated array for BubbleSort | 0 | **5** |
| Free the allocated array at the end of Main function | 0 | **5** |
| Complete the BubbleSort unit test | 0 | **5** |
| Use command line arguments to read the array size and the seed | 5 | **5** |
| Measure the execution times of MergeSort and BubbleSort and plot them on a graph | 0 | **5** |
| **Style (10 pts):** | | |
| The driver and functions are easy to follow based on the use of comments | 0 | **6** |
| Easily identifiable variable names | 4 | **4** |
| **Total (100 pts):** | 74 | **100** |

Notes:

In the future, it is good practice to check that the number of command line arguments that are inputted by the user are the same as the number the program is expecting. For example, if a user didn’t type in the length, you wouldn’t want the program to run. You can check for this with some code like follows:

if (argc != 3) {

cout << “Usage: ./BubbleSort <seed> <length>” << endl;

exit(1);

}

You didn’t write any of your own comments.

You are declaring your array statically. To declare it dynamically, you should have int \* array = new int[length]; Then, you need to free the memory at the end of the program like delete [] array; array = nullptr; The first statement frees the memory that stores all the array values, and the second statement ensures that array will not be a dangling pointer.

You should have a test to make sure the output of bubblesort is correct, the same way there is one for mergesort.