**Scoring Rubric for Project 9: Templates and Asymptotic Analysis**

*Due 12/6/2019 @ 12 pm*

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| Student Name: Tao Long |

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|  | **Score** | **Maximum** |
| **Execution (50 pts):** | | |
| Program compiles without errors (warnings are okay) | 50 | **50** |
| **Implementation (45 pts):** | | |
| Implements the Data class with at least 4 data members, overloads the output stream operator, and overloads the comparison operators (< or >), and reads a data set of at least 100,000 entries from a csv file. | 3 | **5** |
| Sorts Data and integer vectors using templated BubbleSort function. | 5 | **5** |
| Sorts Data and integer vectors using templated SelectionSort function. | 5 | **5** |
| Sorts Data and integer vectors using templated MergeSort function. | 5 | **5** |
| Sorts Data and integer vectors using templated QuickSort function. | 5 | **5** |
| Benchmark and plot of execution time vs. N for all algorithms and data types for unsorted lists. | 10 | **10** |
| Benchmark and plot lot of execution time vs. N for all algorithms and data types for sorted lists. | 5 | **5** |
| Detailed analysis of the complexity of BubbleSort and SelectionSort for best and worst case. | 5 | **5** |
| **Style (5 pts):** | | |
| The driver and functions are easy to follow based on the use of comments | 3 | **3** |
| Easily identifiable variable names | 2 | **2** |
| **Total (100 pts):** | 98 | **100** |

Notes:

Only 2 data members in Data class. File has less than 100,000 entries.