**CSE212 – Programming with Data Structures**

**02 Prove – Response Document**

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| **Name:** |  |
| **Date:** |  |
| **Teacher:** |  |
| **Section:** |  |

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**Question 1: From Part 1, what is the big O notation for the sort\_list function? (2 points)**

**Question 2: From Part 1, what is the big O notation for the standard\_deviation\_1 function? (2 points)**

**Question 3: From Part 1, what is the big O notation for the standard\_deviation\_2 function? (2 points)**

**Question 4: From Part 1, what is the big O notation for the standard\_deviation\_3 function? (2 points)**

**Question 5: From Part 1, put the following big O notations in order from best performance to worst performance: O(n^2), O(1), O(2^n), O(n log n), O(log n), O(n). (20 points)**

**Question 6: From Part 2, what is the performance (using big O notation) for the search\_sorted\_1 function? (5 points)**

**Question 7: From Part 2, what is the performance (using big O notation) for the search\_sorted\_2 function? (5 points)**

**Question 8: From Part 2, which function (search\_sorted\_1 or search\_sorted\_2) has the better performance? (2 points)**

**Question 9: From Part 2, for both functions (search\_sorted\_1 and search\_sorted\_2), explain in detail how you determined the big O notation by just looking at the code without the benefit of observing actual execution results? (30 points)**

**Question 10: From Part 2, it is possible in the best case for each of these functions (search\_sorted\_1 and search\_sorted\_2) to complete in O(1) time. What input scenarios would give this result for both functions? (20 points)**

**Question 11: From Part 3, write a paragraph about the negative implications of forgetting to do performance analysis as a software engineer in the field. (10 points)**