

What sorting algorithms did you choose? Why?

Bubble Sort has a time complexity of  $O(n^2)$  and is not considered very efficient for large lists. However, it is easy to understand and implement, making it a good choice for small lists.

Binary Search is a search algorithm used to find the position of a target value within a sorted list. The algorithm compares the target value to the middle element of the list. If the target value is smaller than the middle element, it searches the left half of the list. If the target value is larger than the middle element, it searches the right half of the list. The algorithm then repeats this process on the selected half of the list until the target value is found or the search has exhausted all elements. Binary Search has a time complexity of  $O(\log n)$  and is considered very efficient for large lists.

Both algorithms are appropriate choices for their respective tasks, and their implementations in the lab assignment are straightforward and easy to understand.