

**Symbiosis Institute of Technology**

**Faculty of Engineering**

**CSE- Academic Year 2023-24**

**Data Structures – Lab Batch 2022-26**

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| **Lab Assignment No:- 1,2,3** | |
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| **Name of Student** | Janmejay Pandya |
| **PRN No.** | 22070122086 |
| **Batch** | 22-26 |
| **Class** | CS-B |
| **Academic Year & Semester** | 2023 semester 3 |
| **Date of Submission** | 29-8-23 |
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| **Title of Assignment:** | A. Implement following searching algorithm: Linear search with multiple occurrences  B. Implement following searching algorithms in menu:  1. Binary search with iteration  2. Binary search with recursion |
| **Theory:** | 1. Prepare table for following searching and sorting algorithms for their best case, average case and worst case time complexities.   Linear search, binary search, bubble sort, Insertion sort, selection sort, merge sort, quick sort.   1. Discuss on Best case and Worst case time complexities of   Linear search, binary search, bubble sort, Insertion sort, selection sort, merge sort, quick sort. |
| **Source Code/Algorithm/Flow Chart:** | A.      B. |
| **Output Screenshots (if applicable)** |  |
| **Conclusion** | Thus we have studied different sorting algorithms and their time complexities. |