

**Symbiosis Institute of Technology**

**Faculty of Engineering**

**CSE- Academic Year 2023-24**

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

|  |  |
| --- | --- |
|  | **Lab Assignment No:- 1,2,3** |
|  |  |
| **Name of Student** | Kshitij Gurbuxani |
| **PRN No.** | 22070122097 |
| **Batch** | 22-26 |
| **Class** | CS B |
| **Academic Year &**  **Semester** | 23-24 Semester 1 |
| **Date of Submission** | 28-08-2023 |
|  |  |
| **Title of Assignment:** | 1. Implement following searching algorithm: Linear search with multiple occurrences 2. 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. 2. 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:** | Code for program A: |

|  |  |
| --- | --- |
|  | Code for Program B: |
| **Output Screenshots (if applicable)** | Output for Program A:  Output for Program B: |
| **Conclusion** | Thus we have studied different sorting algorithms and their time complexities. |