

DATA STRUCTURE

Assignment 8 – Searching and Sorting

Problem 1. Show the steps that Linear search finds a given value $x = 4$ in an array $A = \{10, 8, 2, 7, 3, 4, 9, 1, 6, 5\}$.

Problem 2. Show the steps that Binary search finds a given value $x = 4$ in a sorted array $A = \{1, 2, 3, 4, 5, 6, 7, 8, 9, 10\}$.

Problem 3. Given an array $A = \{10, 8, 2, 7, 3, 4, 9, 1, 6, 5\}$. Visualize how the array is sorted step by step in case of:

- a) Insertion sort
- b) Selection sort.
- c) Bubble sort.

Problem 4. Estimate the computational complexity of above algorithms.