Data Structures

Lab Work Assignments

1. Write a program to insert an element at a specific position in a given array.

2. Write a program to delete an element from an array by value and by position.

3. Implement a program to multiply two matrices and display the result.

4. Write a program to implement Binary Search and explain its best-case and worst-case complexity.

5. Write a program to implement Bubble Sort, count the number of swaps, and explain its best-case and worst-case complexity.

6. Write a program to implement Selection Sort and explain its best-case and worst-case complexity.

7. Write a program to implement Insertion Sort and explain its best-case and worst-case complexity.

8. Write a program to implement Quick Sort and display the partitioning process.

9. Write a program to implement Radix Sort.

10. Given two strings P (Pattern) and T (Text), implement first pattern matching algorithm to find the starting index of the first occurrence of P in T. If P is not found in T, return 0.

11. Given a pattern P and a text T of length N, implement a second pattern matching Algorithm to find the first occurrence of P in T. The algorithm should utilize a pattern matching table to efficiently search for the pattern.