Algorithms Lab

Course Outcome for Algorithms Lab:

1. Remembering:
- Recall the concept of Linear Search and its application in searching for an element in an array.
- Understand the working of Binary Search algorithm and its implementation to search for an element in a sorted array.

2. Understanding:
- Explain the Tower of Hanoi problem and its recursive solution approach.
- Describe the Selection Sort algorithm and its implementation for sorting an array in ascending order.
- Understand the concept of Brute-Force approach to find a specific value in a given dataset.

3. Applying:
- Implement Quick Sort algorithm for sorting an array efficiently.
- Apply Floyd's Algorithm to find the shortest paths in a weighted graph.
- Solve string matching problems using the Knuth-Morris-Pratt (KMP) algorithm.

4. Analyzing:
- Analyze the Minimum Spanning Tree problem and its application in finding the most optimal connection in a graph.
- Evaluate the efficiency of Prim's Algorithm for constructing a Minimum Spanning Tree of a given graph.

5. Creating:
- Develop a program to determine the optimal ordering of vertices in a graph.
- Design and implement algorithms for various problem-solving tasks in computational algorithms.

6. Evaluating:
- Compare and contrast different sorting algorithms based on their time complexity and efficiency.
- Evaluate the performance of the implemented algorithms through plot graphs and experimental analysis.

7. Understanding:
- Understand the importance of algorithm efficiency and its impact on solving real-world problems effectively.