B.M.S. College of Engineering, Bangalore-560019

Department of Information Science & Engineering

Academic Year: 2024-2025(EVEN)

COURSE: ANALYSIS & DESIGN OF ALGORITHMS CODE:23IS4PCADA

LAB CYCLE

1. Sort a given set of elements using Selection sort and determine the time required to sort the elements. Repeat the experiment for different values of n, the number of elements in the list to be sorted and plot a graph of the time taken versus n.
2. Sort a given set of elements using Quick sort and determine time required to sort the elements. Repeat the experiment for different values of n, the number of elements in the list to be sorted and plot a graph of the time taken versus n.
3. Sort a given set of elements using Merge sort and determine the time required to sort the elements. Repeat the experiment for different values of n, the number of elements in the list to be sorted and plot a graph of the time taken versus n.
4. Print all the nodes reachable from a given starting node in a digraph using BFS method.
5. Find minimum cost spanning tree of a given undirected graph using Prims algorithm.
6. Sort a given set of elements using the Heap sort method and determine the time taken to sort the elements. Repeat the experiment for different values of n, the number of elements in the list to be sorted and plot a graph of the time taken versus n.
7. Implement All Pair Shortest paths problem using Floyd's algorithm.
8. Implement N-Queen's problem using Back Tracking.
9. Program to implement 0/1 knapsack using Branch and Bound
10. **Space and time trade-offs-Virtual Learning Environment- VLE)**
    Explore the virtual lab, take a pretest, learn and practice the exercise, analyze the algorithm, code it and take a posttest.
    Understanding and Implementing **Hash table**:
    i. Collision resolution - open and closed addressing
    ii. Linear Probing
    Tutorial Link: https://ds1-iiith.vlabs.ac.in/exp/hash-tables/index.html

FIC:

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2. Dr. V Shubha Rao
3. Dr. Shobha T
4. Prof. Sreevidya B S