Indian Institute of Information Technology, Nagpur

Department of Computer Science & Engineering

Experiment List

Design and Analysis of Algorithms

Sr. No.	Name of Experiment
0	Random number generation for input file creation using command line program. File handling: input and output management.
1	Implementation of basic sorting techniques such as Bubble Sort, Insertion Sort, Selection Sort. Discuss the behaviour of each sorting technique when elements are already in sorting order.
2	Implementation of Heap sort and determine the time required to sort the elements. Perform the experiment for different values of *n*.
3	Implementation of Quick Sort algorithm using divide and conquer methodology. Also implement the Iterative and Recursive algorithm for Quick Sort. Show your comparative study when executed on already sorted list.
4	Implementation of Merge Sort algorithm using divide and conquer methodology. Also implement the Iterative and Recursive algorithm for Merge Sort. Show your comparative study when executed on already sorted list.
5	Find Minimum Cost Spanning Tree of a given undirected graph using Prim's algorithm.
6	Find Minimum Cost Spanning Tree of a given undirected graph using Kruskal's algorithm.
7	Implement of Dynamic Programming problems. a. Longest Common Subsequent b. All Pair Shortest Path c. Matrix Chain Multiplication
8	From a given vertex in a weighted connected graph, find shortest paths to other vertices using Dijikstra's algorithm.
9	Implementation of Traversing techniques a. Print all the nodes reachable from a given starting node in a digraph using BFS method. b. Check whether a given graph is connected or not using DFS method.
10	Graphical (GUI) Implementation of 8 Queen's Problem / Graph Colouring/ Travelling Salesman Problem using C/ C ++/ Java programming languages.

Dr. Jitendra V. Tembhurne

Dept. of CSE, IIIT Nagpur