

Name of the laboratory: DESIGN AND ANALYSIS OF ALGORITHMS LAB

Course objectives

1. To write programs in java to solve problems using divide and conquer strategy.
2. To write programs in java to solve problems using backtracking strategy.
3. To write programs in java to solve problems using greedy and dynamic programming techniques.

Course Outcomes:

Ability to write programs in java to solve problems using algorithm design techniques such as Divide and Conquer, Greedy, Dynamic programming, and Backtracking.

List of experiments:

Week 1

Write a java program to implement Quick sort algorithm for sorting a list of integers in ascending order

Week 2

Write a java program to implement Merge sort algorithm for sorting a list of integers in ascending order.

Week 3

Write a java program to implement the dfs algorithm for a graph.

Week 4

Write a java program to implement the bfs algorithm for a graph.

Week 5

Write a java programs to implement backtracking algorithm for the N-queens problem.

Week 6

Write a java program to implement the backtracking algorithm for the sum of subsets problem.

Week 7

Write a java program to implement the backtracking algorithm for the Hamiltonian Circuits problem.

Week 8

Write a java program to implement greedy algorithm for job sequencing with deadlines.

Week 9

Write a java program to implement Dijkstra's algorithm for the Single source shortest path problem.

Week 10

Write a java program that implements Prim's algorithm to generate minimum cost spanning tree.

Week 11

Write a java program that implements Kruskal's algorithm to generate minimum cost spanning tree

Week 12

Write a java program to implement Floyd's algorithm for the all pairs shortest path problem.

Week 13

Write a java program to implement Dynamic Programming algorithm for the 0/1 Knapsack problem.

Week 14

Write a java program to implement Dynamic Programming algorithm for the Optimal Binary Search Tree Problem.

