

# Assignment

## Design & Analysis of Algorithm Lab

Paper Code: CS591

B.Tech CSE 3<sup>rd</sup> Yr

Semester-V

**2015**

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### Programming Language: C

#### Lab 1: Divide and Conquer:

- Implement Binary Search using Divide and Conquer approach
- Implement Merge Sort using Divide and Conquer approach

#### Lab 2: Divide and Conquer:

- Implement Quick Sort using Divide and Conquer approach
- Find Maximum and Minimum element from an array of integer using Divide and Conquer approach

#### Lab 3: Greedy method (implement any one of the following problem):

- Minimum Cost Spanning Tree by Prim's Algorithm
- Minimum Cost Spanning Tree by Kruskal's Algorithm

#### Lab 4: Greedy method (implement any one of the following problem):

- Knapsack problem
- Job sequencing with deadlines

#### Lab 5: Dynamic Programming:

- Implement Single Source shortest Path for a graph ( Dijkstra , Bellman Ford Algorithm )

#### Lab 6: Dynamic Programming:

- Implement all pair of Shortest path for a graph ( Floyd-Warshall Algorithm )
- Implement Traveling Salesman Problem

#### Lab 7: Dynamic Programming:

- Find the minimum number of scalar multiplication needed for chain of matrix

#### Lab 8: Backtracking :

- Implement 8 Queen Problem

#### Lab 9: Backtracking (implement any one of the following problem):

- Graph Coloring Problem
- Hamiltonian Problem

#### Lab 10: Brunch and Bound:

- Implement 15 Puzzle Problem

#### Lab 11: Graph Traversal Algorithm:

- Implement Breadth First Search (BFS)
- Implement Depth First Search (DFS)