Design and Analysis of Algorithms

This repository contains the code for the assignments of the course Design and Analysis of Algorithms (19Z402) from PSG College of Technology, Coimbatore.

Syllabus

DIVIDE AND CONQUER :

- Introduction to Algorithm Design techniques
- Divide and Conquer Methodology
- Solving recurrence relations
- Masters Theorem
- Finding Maximum and Minimum Element
- Quick sort
- Merge sort
- Convex Hull

GREEDY METHOD:

- Greedy Strategy
- Knapsack Problem
- Minimum Spanning Trees
- Single Source Shortest Path Method
- Huffman Trees

DYNAMIC PROGRAMMING :

- Principle of Optimality
- Knapsack Problem
- All Pairs Shortest Path
- Optimal Binary Search Tree
- Multistage Graphs

BACKTRACKING:

- State Space Tree
- Knapsack Problem
- The Eight Queens Problem
- Sum of subsets
- Graph Coloring

BRANCH AND BOUND :

- Bounding Functions
- 0/1 Knapsack Problem

- Traveling SalesPerson Problem
- Assignment Problem