DESIGN AND ANALYSIS OF ALGORITHMS

Unit-1:

Best, average & worst-case behaviour:

https://youtu.be/lj3E24nnPjI

Divide & conquer method:

https://youtu.be/2Rr2tW9zvRg

Binary search:

- Iterative: https://youtu.be/C2apEw9pgtw
- Recursive: https://youtu.be/uEUXGcc2VXM

Quick sort:

- Concept: https://youtu.be/7h1s2SojIRw
- Complexity: https://youtu.be/-qOVVRIZzao

Merge sort:

https://youtu.be/mB5HXBb_HY8

Strassen's matrix multiplication:

https://youtu.be/0oJyNmEbS4w

Recurrence relations:

- Substitution method & Recursive tree method examples:

1) https://youtu.be/4V30R3I1vLI
2) https://youtu.be/MhT7XmxhaCE
3) https://youtu.be/1K9ebQJosvo

- Masters theorem:

1) Basic: https://youtu.be/CyknhZbfMqc
2) Extended: https://youtu.be/OynWkEj0S-s
3) Examples: https://youtu.be/kGcO-nAm9Vc

Unit-2:

Greedy method:

https://youtu.be/ARvQcqJ_-NY

Job sequencing with deadlines:

https://youtu.be/zPtI8q9gvX8

Knapsack problem:

https://youtu.be/oTTzNMHM05I

Minimum cost Spanning Tree:

https://youtu.be/4ZlRH0eK-qQ

Single source shortest path problem:

https://youtu.be/XB4MIexjvY0

Huffman coding:

https://youtu.be/co4_ahEDCho

Unit-3:

Dynamic programming introduction & principle of optimality:

https://youtu.be/5dRGRueKU3M

Multistage graph:

https://youtu.be/9iE9Mj4m8jk

Matrix chain multiplication:

https://youtu.be/_WncuhSJZyA

Optimal binary search tree:

https://youtu.be/wAy6nDMPYAE

0/1 knapsack problem:

https://youtu.be/nLmhmB6NzcM

All pairs shortest path problem:

https://youtu.be/oNI0rf2P9gE

Travelling sales person problem:

https://youtu.be/Q4zHb-Swzro

Reliability Design:

https://youtu.be/uJOmqBwENB8

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Unit-4:

Backtracking:

https://youtu.be/DKCbsiDBN6c

- N-Queens problem: https://youtu.be/xFv_Hl4B83A
- Sum of subsets problem: https://youtu.be/kyLxTdsT8ws
- Graph colouring: https://youtu.be/052VkKhIaQ4
- Hamilton cycles: https://youtu.be/dQr4wZCiJJ4

Branch and Bound:

https://youtu.be/3RBNPc0_Q6g

- Travelling sales person problem: https://youtu.be/1FEP_sNb62k
- 0/1 knapsack problem: https://youtu.be/yV1d-b_NeK8

Unit-5:

BFS & DFS:

https://youtu.be/pcKY4hjDrxk

Connected & Biconnected components:

https://youtu.be/jFZsDDB0-vo

Topological sorting:

https://youtu.be/dis_c84ejhQ

Knuth-Morris-Pratt pattern matching algorithm:

https://youtu.be/V5-7GzOfADQ

Unit-6:

NP hard and NP-complete problem:

https://youtu.be/e2cF8a5aAhE

Cook's theorem:

https://yotu.be/qZs767KQcvE

Hiring Algorithm:

https://youtu.be/BD-NJekPgsY

Randomized Quick sort:

https://youtu.be/v15UqHWbbWk