DP Concepts & Questions

Video 30

भाषण
(Motivation)

"Success isn't about never failing;
it's about rising stronger every time.
Keep going - You are unstoppable"

MIK...

[cswithMIK → Twitter
Facebook, Instagram → codestorywithMIK
whatsapp → codestorywithMIK]

Done
- 1-D based DP
- Grid based DP

Done
- String based DP
- Digit DP
- Game Strategy

We'll do :-

(·) RECURSION + MEMOIZATION (Top Down)

(·) Bottom UP

(·) Time & Space

DP on Grids

PART-II of Introduction

Types of Problems

in Grid DP

Unique Paths

(•) Finding count/no of unique Paths from a Source to Destination.

Example:- Counting Paths with no obstacles.

Counting Paths with restrictions (eg. blocked cells, walls) etc.

Minimum Path Sum / Minimum Cost Path.

(•) Finding paths with minimum sum of weights or costs

Example:- Find minimum path sum in

grid having +ve values.

↙ Find minimum path Sum in grid having -ve values

⇒ It can be "maximum" as well.

Shortest Path in a Grid

(•) Finding shortest Path (in terms of steps or weight) from Source to Destination.

↳ Grid with uniform weights → BFS ✗ DP

↳ Grid with non-uniform weights → D.P or Dijkstra's

Game Board

(•) Chess Board related problems

Example:- Minimum Knight Moves

↙ Shortest path for King to reach

a destination. ✓✓

✓ Queen related problems. ✓✓

(o) Snake & Ladder board based problems.

Matrix / Grid traversal/walk

Example :- ✓ Cherry pickup I/II

✓ Dungeon Game

✓ Robot walk related Problems

etc. etc...