Climb Stair With Minimum Moves

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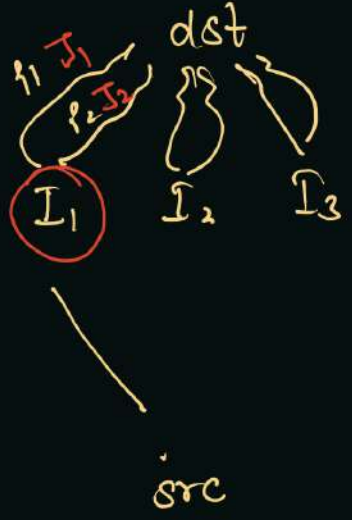
path → jumps = moves



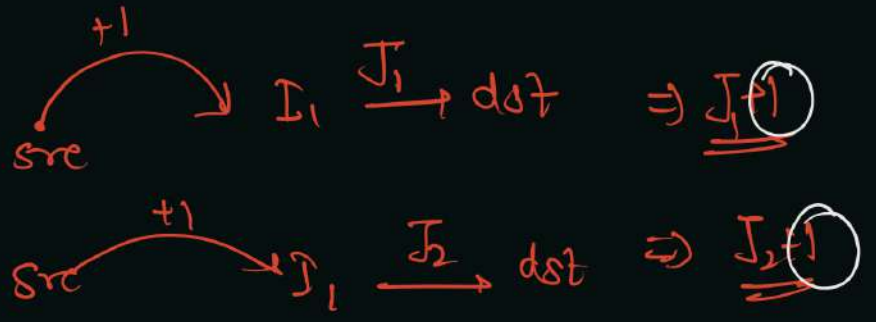
path ① src → I_1 $\xrightarrow{J_1}$ dst

path ② src → I_1 $\xrightarrow{J_2}$ dst

dst → dst

↺ 1 path (don't move)

jump from path ① →



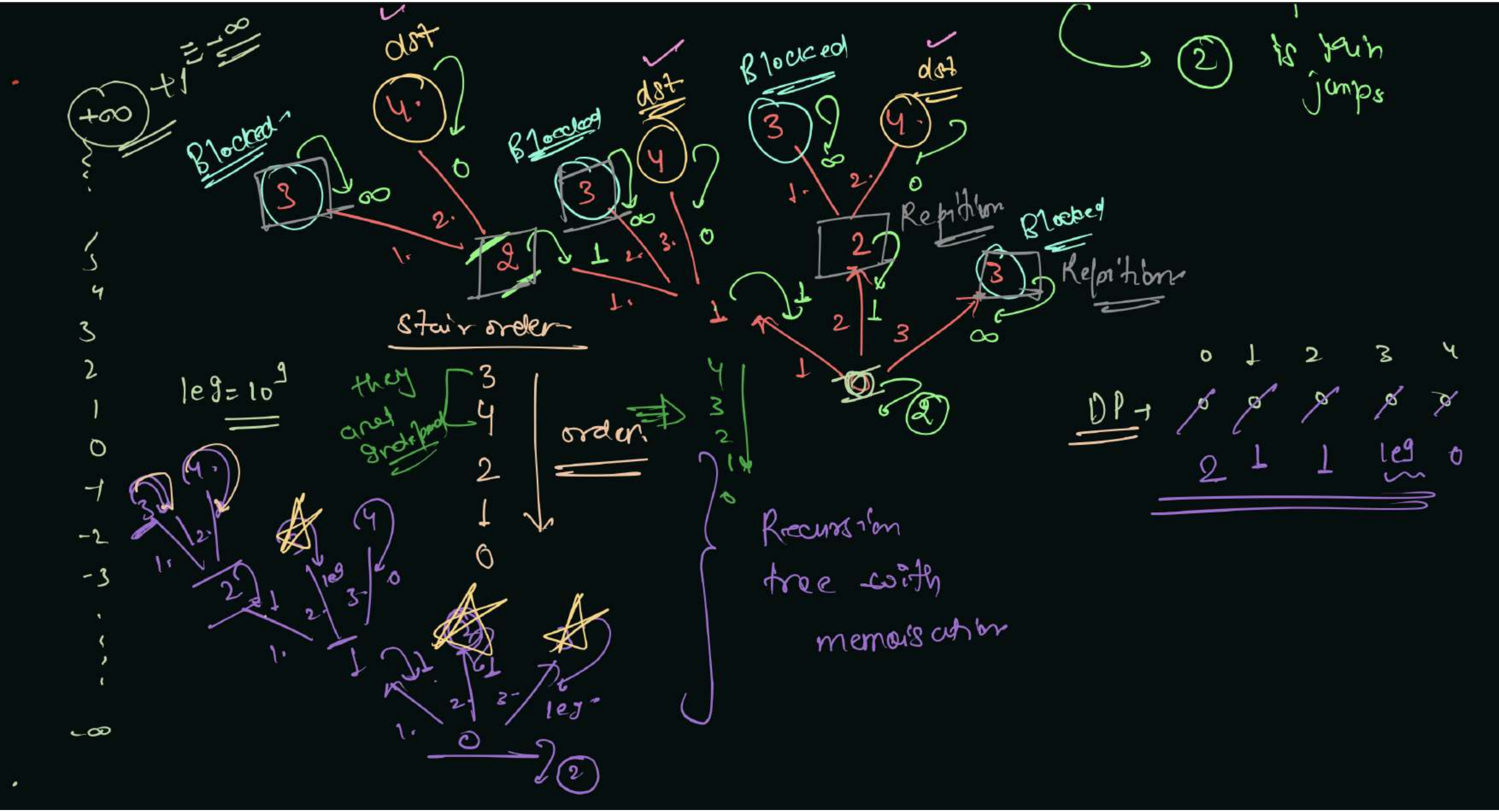
dst → dst

↺ 0 jump

stair	0	1	2	3	4
jumps →	3	3	2	0	1

variable of Repition → Stairs

path from src to dst →



Blocked
dst
Blocked
dst
Blocked
dst
Repetition
Blocked
Repetition
Stair order
leg = 10^9
order
Recursion
tree with
memoisation
DP
0 1 2 3 4
2 1 1 leg 0
jumps

Stair	0	1	2	3	4
Jumps →	3	3	2	0	1

Tabulation

↳ Storage. → dp →

↳ Meaning dp[i]

Min jumps required to reach at dest from 'i'.

	0	1	2	3	4.
(3)	0	0	0	0	0
2	1	1	1	leg	0

↳ dp[4] = 0

↳ direction → 4 → 0 (fill.)

Min Cost In Maze Traversal

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jumps allowed → right, down

$(x,y) \rightarrow (x, y+1)$

$(x+1, y)$

dst

intermediate

src

min + cost

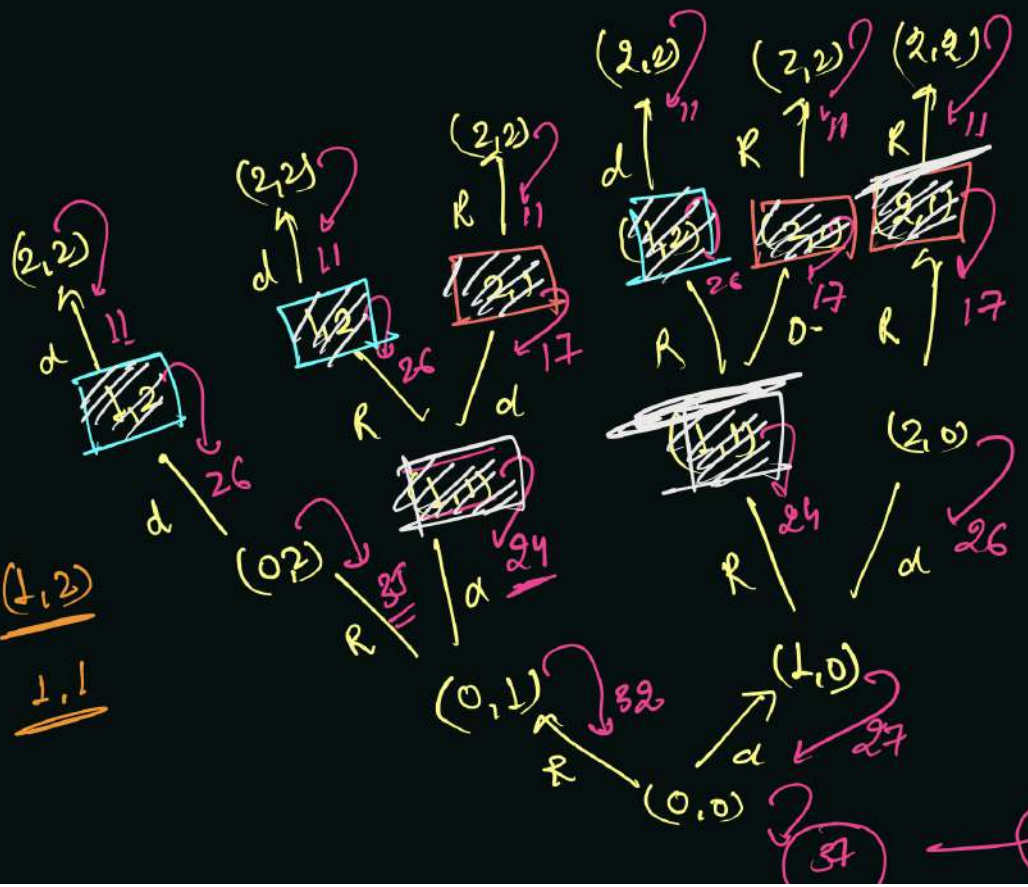
Maze with cost →

src ⇒ (0,0)

dst ⇒ (3,3)

Condition is → minimize the cost

	0	1	2	3
0	10 (src)	8	9	8
1	3	7	15	5
2	9	6	11 (dst)	10
3	7	12	6	1

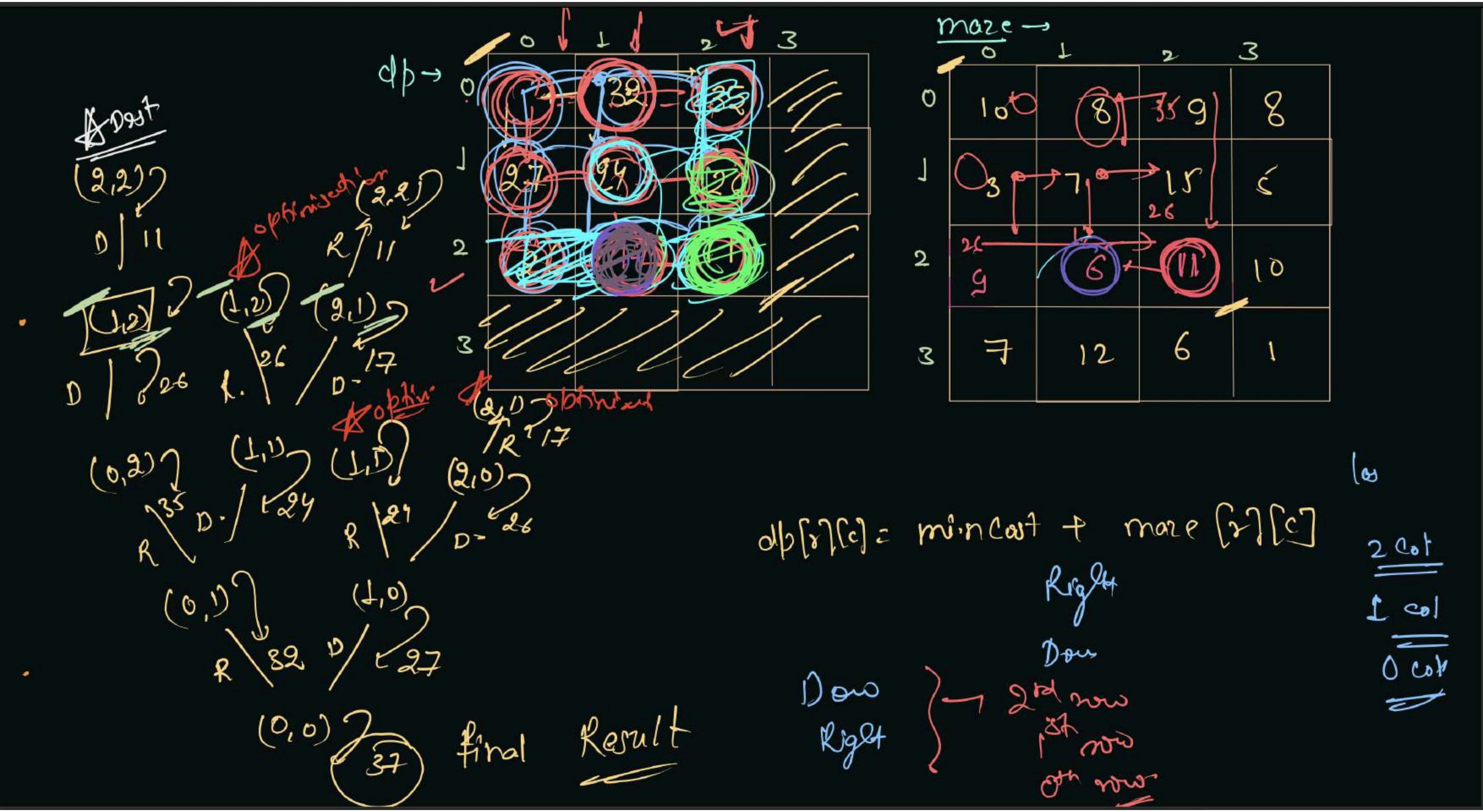


Repitition is in (x, y)

path →

Path	Cost
R R D D	53
R D R D	51
R D D R	42
D R R D	46
D R D R	37
D D R R	39

min cost path



dp →
maze →
optimization
dp[r][c] = mincost + maze[r][c]
Right
Down
Down
Right
2nd row
1st row
0th row
2 col
1 col
0 col
final Result

Moves allowed → Right
down.

DRDR

main path

Rev. Engineer

Goldmine

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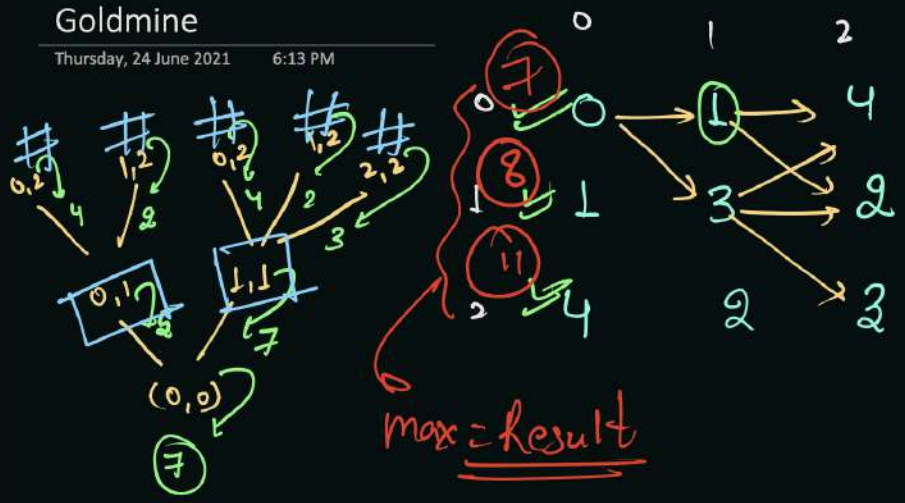
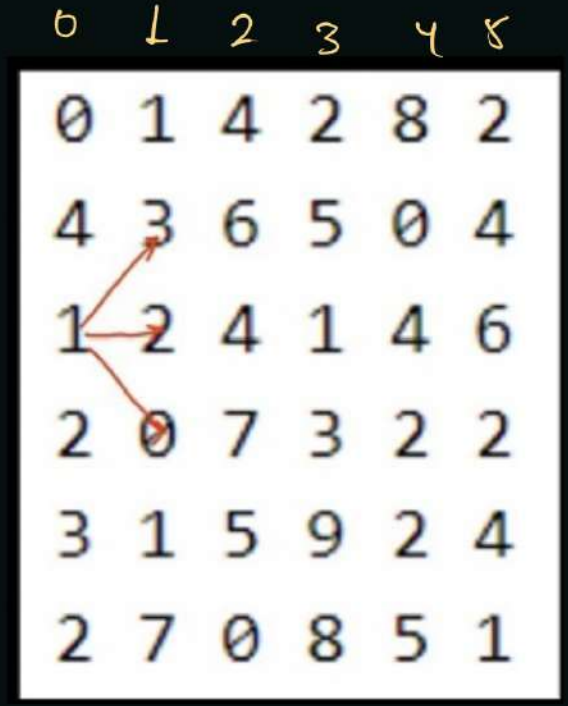
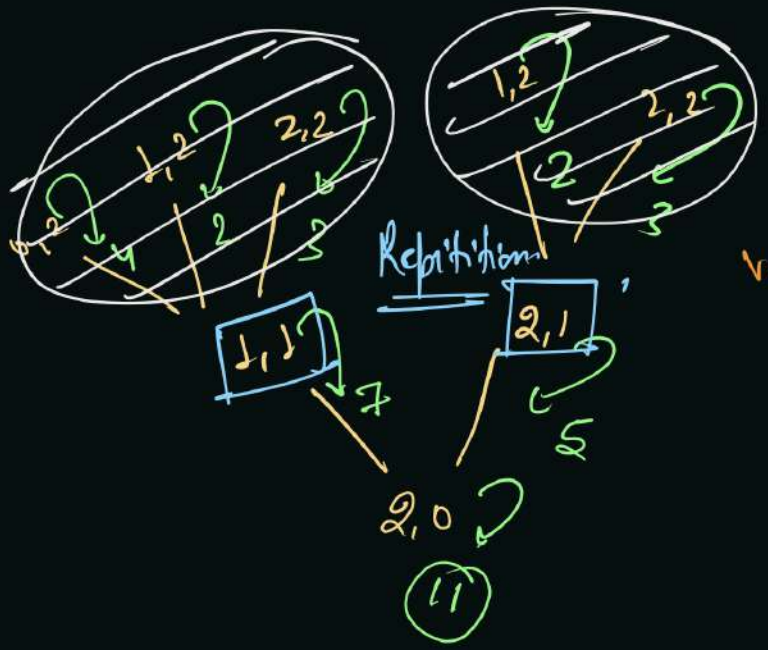




→ Base case

□ → Repitition



variables of Repitition → (x, y)

↳ 2D - DP