

Backtracking★ Rat in a maze

		0	1	2	3
1 → open path	0	1	0	0	0
0 → closed path	1	1	1	0	0
2	↓	1	→	0	0
3	0	1	↓	1	→

Source → (0, 0)

Destination → (3, 3)

 movements possible →
 Up, down, left, Right

D D R D R R

 ∈ possible solution

O R D D R R

 ∈ possible solution
Approach:-

Lexicographical → D L R U

 ↓
 D comes first in
 alphabetical order

$$\text{arr}[\text{new } x][\text{new } y] == 1$$

$$\text{visited}[\text{new } x][\text{new } y] != 1$$

 another
 matrix
 that we
 have taken

$$\text{new } x \geq 0 \ \& \ < n$$

$$\text{new } y \geq 0 \ \& \ < n$$

$$f(0, 0, "") \rightarrow (D, L, R, U)$$

 ↓ $\text{vis}[0][0] = 1$ → D phle hai to

$$f(1, 0, "D") \rightarrow (D, L, R, U)$$
 check karo
 Down ja sakte
 hai ya nahi

$$\downarrow \text{vis}[1][0] = 1$$

$$f(2, 0, "DD") \rightarrow (0, \underset{\alpha}{L}, \underset{\alpha}{R}, \underset{\checkmark}{U})$$

$$\downarrow \text{vis}[2][0] = 1$$

$$f(2, 1, "DDR") \rightarrow (0, \underset{\alpha}{L}, \underset{\alpha}{R}, \underset{\checkmark}{U})$$

$$\downarrow \text{vis}[2][1] = 1$$

$$\text{vis}[3][2] = 0 \rightarrow f(3, 1, "DDR D") \rightarrow (0, \underset{\alpha}{L}, \underset{\alpha}{R}, \underset{\checkmark}{U})$$

$$\downarrow \text{vis}[3][1] = 1$$

$$\text{yaha se return kar gaye}$$

$$\rightarrow f(3, 2, "DDR DR") \rightarrow (0, \underset{\alpha}{L}, \underset{\alpha}{R}, \underset{\checkmark}{U})$$

$$\downarrow \text{vis}[3][2] = 1$$

$$\rightarrow f(3, 3, "DDR DRR")$$

$$\uparrow$$

$$f(1, 1, "DDRU")$$

$$\downarrow$$

$$(0, \underset{\alpha}{L}, \underset{\alpha}{R}, \underset{\checkmark}{U})$$

UV \rightarrow but Destination reached print ans

up jaoge to 0 hai
nahi ja sakte