

L60

More Backtracking Problems

Join Discord - <https://bit.ly/ly-discord>

RECAP

A couple of harder backtracking
problems today.

U R D L

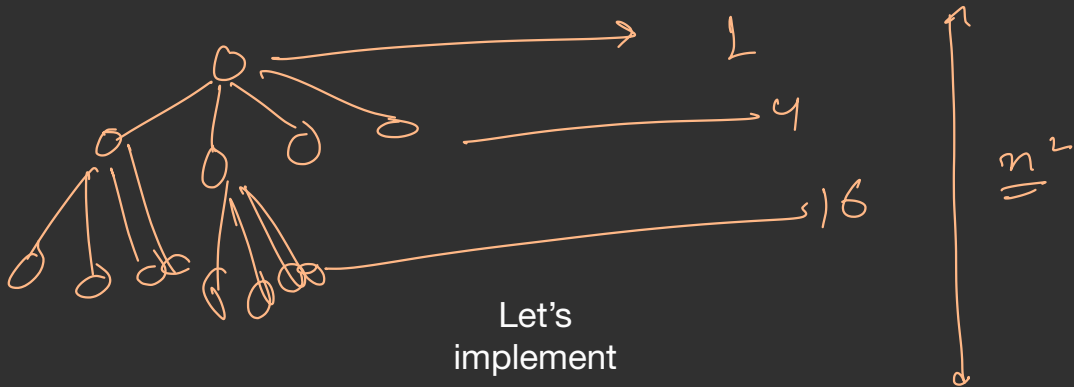


1. Rat in a Maze

1	1	1	0
1	0	1	0
1	1	1	1
1	1	0	1

Intuition

Solution



$$\begin{array}{ccccccc}
 \underline{4^0} & \underline{4^1} & \underline{4^2} & \underline{4^3} & \dots & \dots & \dots \\
 \hline
 4^{n^2} & & & & & &
 \end{array}$$

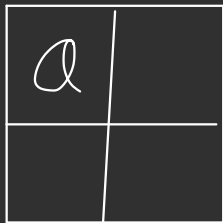
n^2

$$1 - \left[\frac{4^{n^2} - 1}{4 - 1} \right]$$

Time & Space?

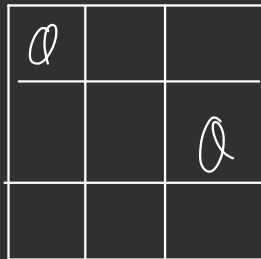
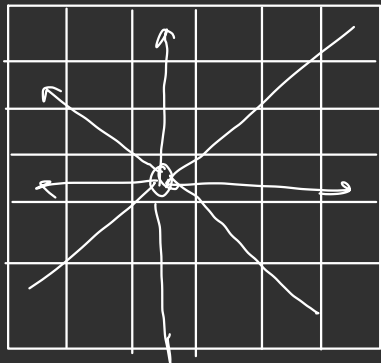


1 x 1
✓



X

2. N-Queen Problem



	Q		
			Q
Q			
		Q	

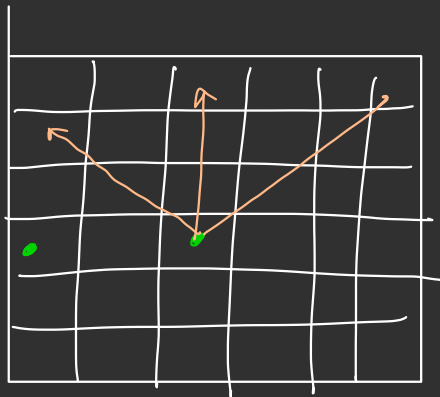
4 >

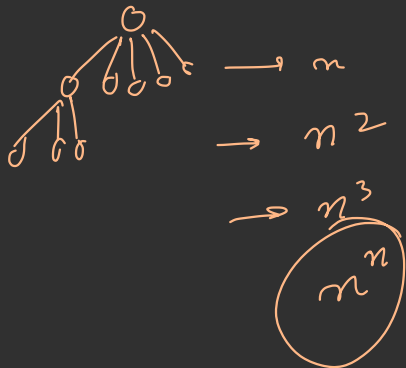
Intuition

		Q	
Q			
			Q
	Q		

		Q	
Q			
			Q
.	Q		

Solution





Let's
implement

An optimisation
for `isSafe()`

L | 1 | | | 1 |

00	01	02	03	04
10	11	12	13	14
20	21	22	23	24
30	31	32	33	34
40	41	42	43	44

0
1
2
3
4
5
6
7
8

5

3
7
2
6

-4 0
-3 1
-2 2
-1 3
0 4

$i-j+n-1$

$i-j+4$

0
1
2
3
4
5
6
7
8

Time & Space?

Thank You!

Reminder: Going to the gym & observing the trainer work out can help you know the right technique, but you'll muscle up only if you lift some weights yourself.

So, PRACTICE, PRACTICE, PRACTICE!