# Week 14- Day 2 : Coding Challenge

(Maximum marks -15)

**Q-1 ) N-Queens**

**https://leetcode.com/problems/n-queens-ii/**

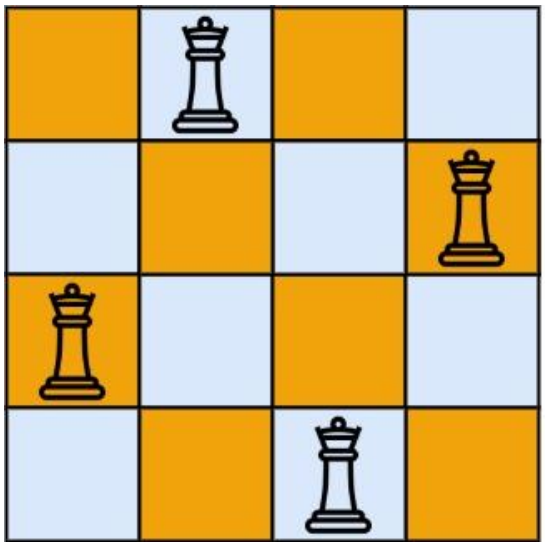
**(5 marks)**

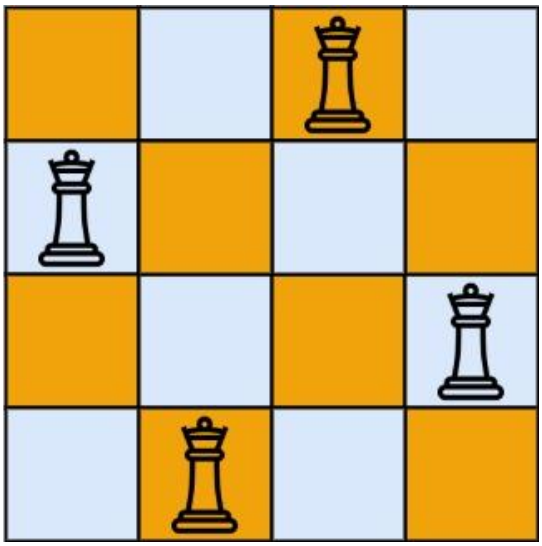
(Medium)

The n-queens puzzle is the problem of placing `n` queens on an `n x n` chessboard such that no two queens attack each other.

Given an integer `n`, return *the number of distinct solutions to the n-queens puzzle*.

Example 1:





Input: n = 4
Output: 2
Explanation: There are two distinct solutions to the 4-queens puzzle as shown.

Example 2:

Input: n = 1
Output: 1

**Q-2)Sum of All Subset XOR Totals** **(5 marks)**

https://leetcode.com/problems/sum-of-all-subset-xor-totals/

(Easy)

The XOR total of an array is defined as the bitwise XOR of all its elements, or 0 if the array is empty.

- For example, the XOR total of the array [2,5,6] is 2 XOR 5 XOR 6 = 1.

Given an array nums, return *the sum of all XOR totals for every subset of* nums.

Note: Subsets with the same elements should be counted multiple times.

An array a is a subset of an array b if a can be obtained from b by deleting some (possibly zero) elements of b.

Example 1:

Input: nums = [1,3]

Output: 6

Explanation: The 4 subsets of [1,3] are:

- The empty subset has an XOR total of 0.

- [1] has an XOR total of 1.

- [3] has an XOR total of 3.

- [1,3] has an XOR total of 1 XOR 3 = 2.

0 + 1 + 3 + 2 = 6

**Q-3)All Paths From Source to Target (5 marks)**

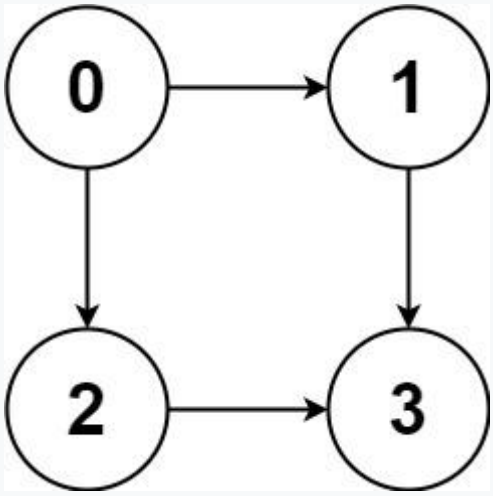
https://leetcode.com/problems/all-paths-from-source-to-target/

(Easy)

Given a directed acyclic graph (DAG) of n nodes labeled from 0 to n - 1, find all possible paths from node 0 to node n - 1, and return them in any order.

The graph is given as follows: graph[i] is a list of all nodes you can visit from node i (i.e., there is a directed edge from node i to node graph[i][j]).

Example 1:




Input: graph = [[1,2],[3],[3],[]]

Output: [[0,1,3],[0,2,3]]

Explanation: There are two paths: 0 -> 1 -> 3 and 0 -> 2 -> 3.

**Marks distribution:**
Question 1,2 and 3 carry 5 marks each.