

Week 5

Topic: Backtracking

46. Permutations

- Difficulty: Medium
- Problem URL: <https://leetcode.com/problems/permutations/description/>
- Description:
給定一個由不重複整數組成的陣列 `nums`，返回該陣列的所有可能排列。排列的順序可以任意，且每個排列必須包含所有元素。

Example1:

Input: `nums = [1,2,3]`

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

Example2:

Input: `nums = [0,1]`

Output: `[[0,1], [1,0]]`

Example3:

Input: `nums = [1]`

Output: `[[1]]`

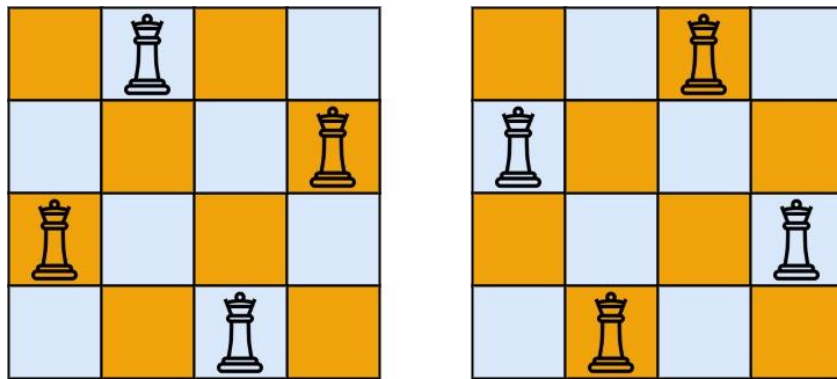
詳細說明與約束條件請參考 *Leetcode* 網站。

51. N-Queens

- Difficulty: Hard
- Problem URL: <https://leetcode.com/problems/n-queens/description/>
- Description:

給定一個 $n \times n$ 的棋盤，請擺放 n 個皇后，使得任意兩個皇后不會相互攻擊（即不能在同一列、同一行或同一對角線上）。請返回可能的擺放方式，解法以 字串陣列 表示，其中：'Q' 代表皇后, '.' 代表空格。

Example1:



Input: $n = 4$

Output: [[".Q..", "...Q", "Q...", "..Q."], ["..Q.", "Q...", "...Q", ".Q.."]]

Explanation:

There exist two distinct solutions to the 4-queens puzzle as shown above

Example2:

Input: $n = 1$

Output: [["Q"]]

詳細說明與約束條件請參考 *Leetcode* 網站。

140. Word Break II

- Difficulty: Hard
- Problem URL: <https://leetcode.com/problems/word-break-ii/description/>
- Description:
給定一個字串 `s` 和一個字典 `wordDict`，我們需要將字串 `s` 拆分成一個或多個字典中的單詞，並且每個字典中的單詞之間用空格隔開。最終返回所有可能的有效句子。

Example1:

Input: `s = "catsanddog"`, `wordDict = ["cat","cats","and","sand","dog"]`

Output: `["cats and dog","cat sand dog"]`

Example2:

Input: `s = "pineapplepenapple"`,

`wordDict = ["apple","pen","applepen","pine","pineapple"]`

Output: `["pine apple pen apple","pineapple pen apple","pine applepen apple"]`

Explanation: Note that you are allowed to reuse a dictionary word.

Example3:

Input: `s = "catsandog"`, `wordDict = ["cats","dog","sand","and","cat"]`

Output: `[]`

詳細說明與約束條件請參考 *Leetcode* 網站。