

Week 9

Topic: Dynamic Programming

435. Non-overlapping Intervals

- Difficulty: Medium
- Problem URL: <https://leetcode.com/problems/non-overlapping-intervals/description/>
- Description:
給定一個區間的陣列 `intervals`，其中 `intervals[i] = [starti, endi]`，表示區間的開始和結束時間。請回傳為了使剩餘的區間不重疊，最少需要刪除多少個區間。

Example1:

Input: `intervals = [[1,2],[2,3],[3,4],[1,3]]`

Output: 1

Explanation: `[1,3]` can be removed and the rest of the intervals are non-overlapping.

Example2:

Input: `intervals = [[1,2],[1,2],[1,2]]`

Output: 2

Explanation: You need to remove two `[1,2]` to make the rest of the intervals non-overlapping.

Example3:

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

Output: 0

Explanation: You don't need to remove any of the intervals since they're already non-overlapping.

詳細說明與約束條件請參考 *Leetcode* 網站。

44. Wildcard Matching

- Difficulty: Hard
- Problem URL: <https://leetcode.com/problems/wildcard-matching/description/>
- Description:
給定一個 input 字串 `s` 和一個 pattern 字串 `p`，實現一個 wildcard pattern 匹配的功能，支持字元 '?' 和 '*'。

而其中，'?'可以匹配任意單個字符，'*'可以匹配任意數量的字元(包括空字元 Null)。

Example1:

Input: `s = "aa", p = "a"`

Output: false

Explanation: "a" does not match the entire string "aa".

Example2:

Input: `s = "aa", p = "*"`

Output: true

Explanation: '*' matches any sequence.

Example3:

Input: `s = "cb", p = "?a"`

Output: false

Explanation: '?' matches 'c', but the second letter is 'a', which does not match 'b'.

詳細說明與約束條件請參考 *Leetcode* 網站。

2742. Painting the Walls

- Difficulty: Hard
- Problem URL: <https://leetcode.com/problems/painting-the-walls/description/>
- Description:

給定兩個長度為 n 的整數陣列 cost 和 time ，它們分別表示油漆 n 面牆的成本和時間。現在有兩位油漆工人：

1. 一位有薪的油漆工人，塗第 i 面牆需要 $\text{time}[i]$ 單位時間，並且需要花費 $\text{cost}[i]$ 單位的金錢。
2. 一位免費的油漆工人，塗任何牆只需要 1 單位時間，且不需要花費金錢。但免費的油漆工人只能在有薪工人已經在工作時使用。

請回傳油漆完所有 n 面牆所需的最小金錢。

Example1:

Input: $\text{cost} = [1,2,3,2]$, $\text{time} = [1,2,3,2]$

Output: 3

Explanation: The walls at index 0 and 1 will be painted by the paid painter, and it will take 3 units of time; meanwhile, the free painter will paint the walls at index 2 and 3, free of cost in 2 units of time. Thus, the total cost is $1 + 2 = 3$.

Example2:

Input: $\text{cost} = [2,3,4,2]$, $\text{time} = [1,1,1,1]$

Output: 4

Explanation: The walls at index 0 and 3 will be painted by the paid painter, and it will take 2 units of time; meanwhile, the free painter will paint the walls at index 1 and 2, free of cost in 2 units of time. Thus, the total cost is $2 + 2 = 4$.

詳細說明與約束條件請參考 *Leetcode* 網站。