

LIS

(Longest Increasing Subsequence)



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LIS

- 最長遞增子序列
- 子序列
 - 'aabbcc' => 'abc'
- 遞增子序列
 - '311324', '311324' => '124'

LIS

- DP
- $DP[n] = ?$

LIS

- 化簡問題，增加條件。
- 若字串 s 的結尾字元為 c 則以 c 為結尾的 LIS 怎麼求？
 - ex. 3151324

Example

- 3151324
- 可能可以與 4 組成 LCS 的字元
 - 3151324
- 枚舉前面可以與其組成 LCS 的字元，挑選最長者
- $DP[n] = \max(DP[i]) + 1, i=1 \sim n-1 \ \& \ str[i] < str[n]$

Example

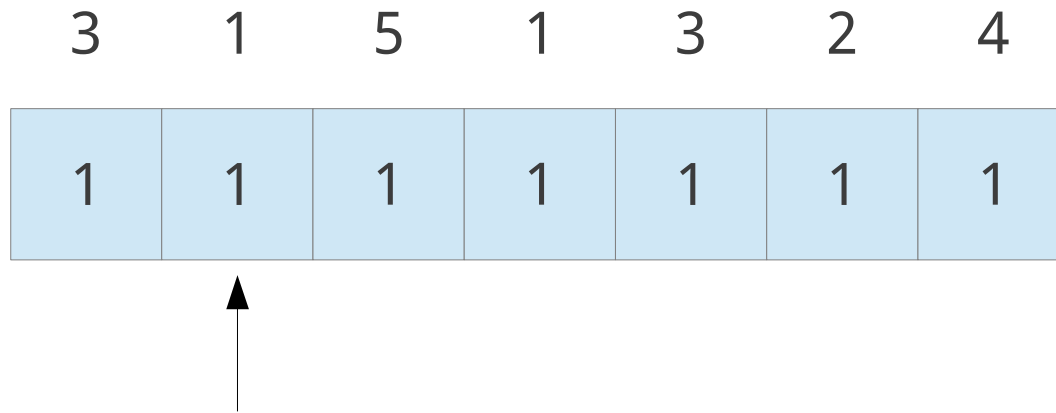
3 1 5 1 3 2 4



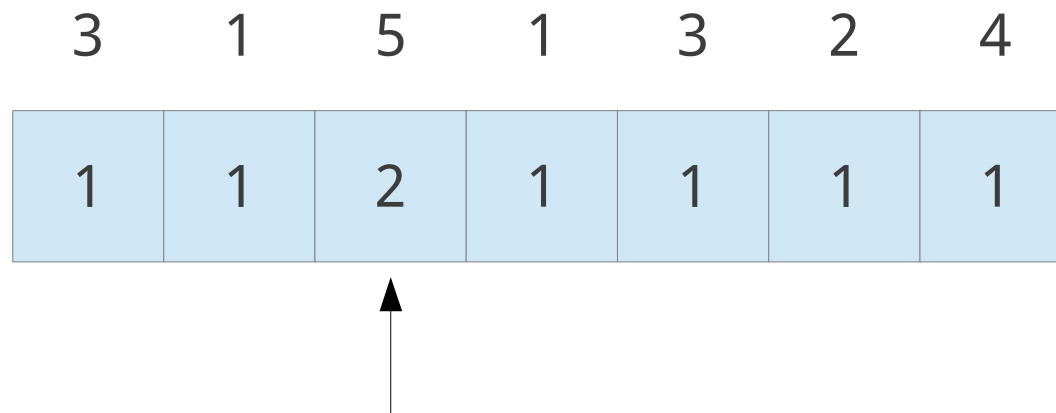
Example

3	1	5	1	3	2	4
1	1	1	1	1	1	1

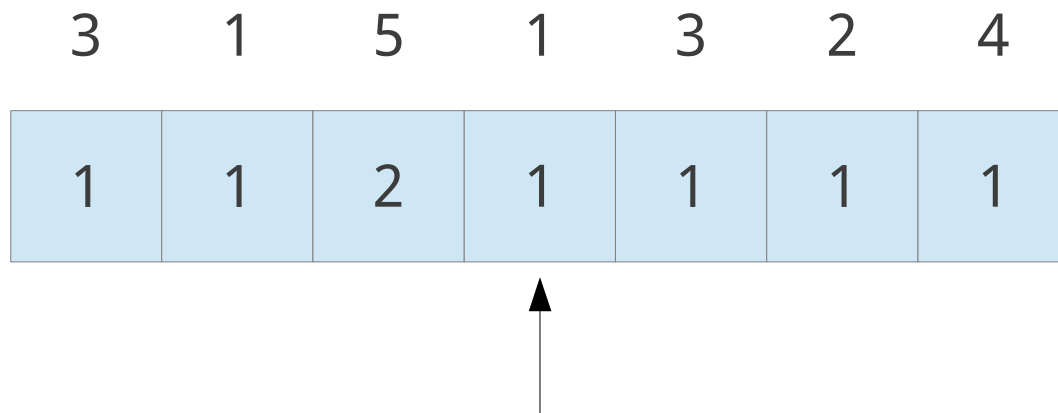
Example



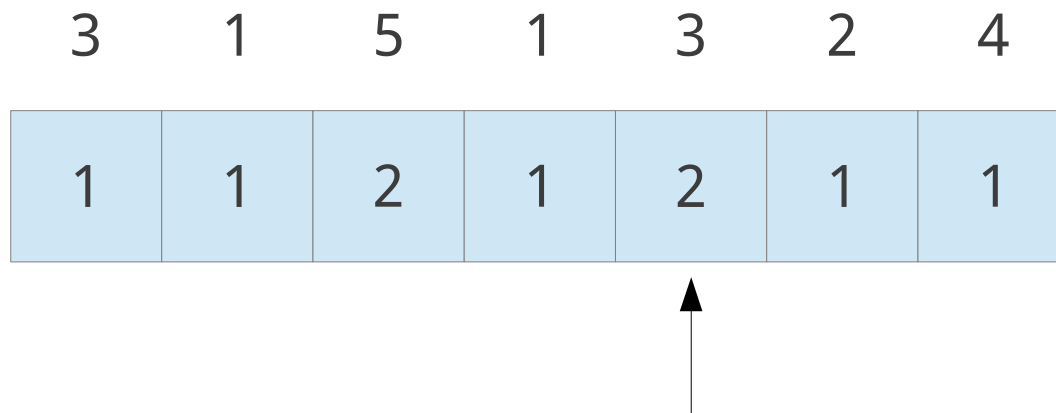
Example



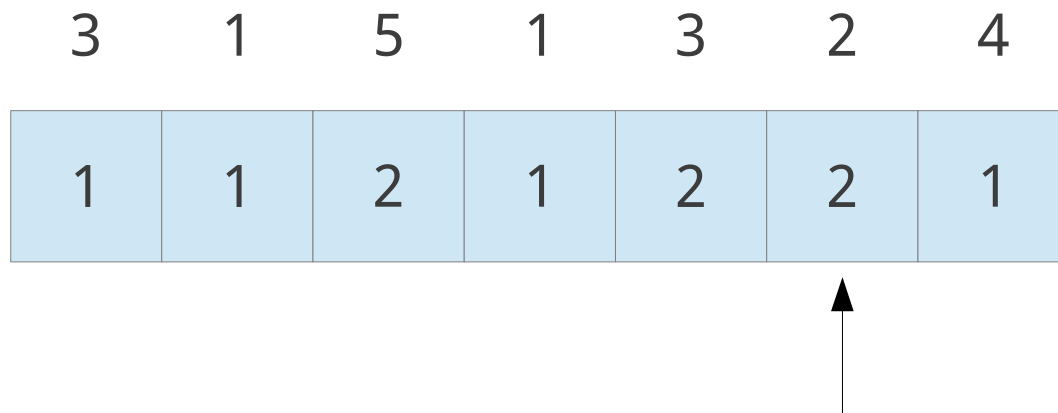
Example



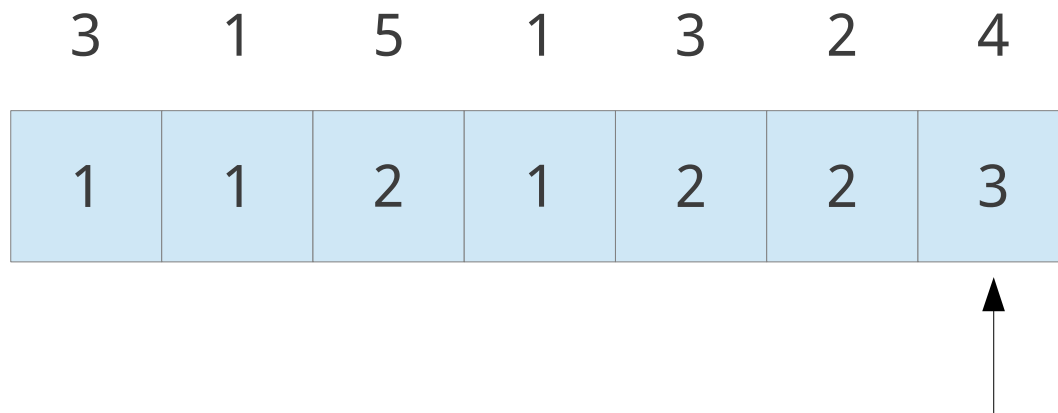
Example



Example



Example



Practice

UVa – 231

UVa – 10534

Thank You for Your Listening.

