Programming Exam 4 (補考)

Date/Time: 50 分鐘
(程式檔命名學號_quiz4.py，上傳至 Moodle PE4 上傳區)

Problem: Longest Non-Increasing Subsequence

Your task is to find *all same-length longest non-increasing subsequences* of a given sequence of numbers. Given an input sequence, your program should find all subsequences of that sequence that are *non-increasing, meaning that each number in the subsequence is less than or equal to the previous number*. The subsequences should be as long as possible, meaning that there is no longer non-increasing subsequence possible. The program should take user input of a sequence of numbers and output all longest non-increasing subsequences.

Sample Input/Output   (以下是你程式執行後須印出的結果)

```
c:\workspace>python pe4_extra2.py
Enter a sequence of numbers separated by spaces: 9 7 9 7 4 4 7 2 1
Longest non-increasing subsequences:
[[9, 7, 7, 4, 4, 2, 1], [9, 9, 7, 4, 4, 2, 1]]

c:\workspace>python pe4_extra2.py
Enter a sequence of numbers separated by spaces: 1 1 1 1 0
Longest non-increasing subsequences:
[[1, 1, 1, 1, 0]]

c:\workspace>python pe4_extra2.py
Enter a sequence of numbers separated by spaces: 0 1 1 1 1
Longest non-increasing subsequences:
[[0]]

c:\workspace>python pe4_extra2.py
Enter a sequence of numbers separated by spaces: 1 2 3 4 5
Longest non-increasing subsequences:
[[1], [2], [3], [4], [5]]

c:\workspace>python pe4_extra2.py
Enter a sequence of numbers separated by spaces: 9
Longest non-increasing subsequences:
[[9]]

c:\workspace>python pe4_extra2.py
Enter a sequence of numbers separated by spaces: 9 4 6 3 8 8 0 8 2 3 1 1 8 1 5 0 1
Longest non-increasing subsequences:
[[9, 4, 3, 2, 1, 1, 1, 0], [9, 4, 3, 2, 1, 1, 1, 1], [9, 4, 3, 3, 1, 1, 1, 0], [9, 4, 3, 3,
 1, 1, 1, 1], [9, 6, 3, 2, 1, 1, 1, 0], [9, 6, 3, 2, 1, 1, 1, 1], [9, 6, 3, 3, 1, 1, 1, 0],
 [9, 6, 3, 3, 1, 1, 1, 1]]

c:\workspace>
```

(繳交是交 pe4.py 檔，不是交截圖)

Note: You need to write comments (註解) for each part in your code.