

# Programming Exam 5

**Date/Time: 2023.04.25 08:10 – 09:00**

(程式檔命名學號\_quiz5.py，上傳至 Moodle PE5 上傳區)

## Problem: Seating Arrangement in a Theater

Your task is to simulate a simple seating arrangement in a theater. The theater will have multiple rows and columns, and each seat will be either available (represented by 'A') or reserved (represented by 'R'). You need to write a Python program that takes the dimensions of the theater and a list of reserved seats, and then displays the seating arrangement as strings, with each row separated by a newline and seats separated by a whitespace.

- Take the dimensions of the theater as input (number of rows and columns).
- Take the list of reserved seats as input in the format 'row,col|row,col|...'. [hint: use **split** function]
- Validate the reserved seats to ensure they are within the theater's dimensions.
- Create the seating arrangement with available and reserved seats. [hint: store seats in a **nested list**]
- Display the seating arrangement as strings. [hint: use **join** function]

### Sample Input/Output

(以下是你程式執行後須印出的結果)

```
c:\workspace>python pe5.py
Enter the number of rows: 5
Enter the number of columns: 6
Enter the reserved seats: 2,2|2,3|3,1|3,6|4,4
Seating Arrangement:
A A A A A A
A R R A A A
R A A A A R
A A A R A A
A A A A A A

c:\workspace>python pe5.py
Enter the number of rows: 3
Enter the number of columns: 5
Enter the reserved seats: 1,2|2,6|0,0|3,3|4,4|1,5|3,5
Out-of-range reserved seats: 2,6|0,0|4,4
Seating Arrangement:
A R A A R
A A A A A
A A R A R

c:\workspace>
```

(繳交是交 pe5.py 檔，不是交截圖)

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