

# ARRAY2D – REVIEW

## Exercise 1:

Sum value in column of array 2D.

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Sum value in column of array 2D.

Input

- An Array 2D

Output

- An Array

Example

INPUT	OUTPUT
[ [1, 2, 3], [4, 5, 6], [7, 8, 9], ]	[12, 15, 18]
[ [1, 2, 3], [4, 5, 6], ]	[5, 7, 9]



1. Why do we need two loops in this exercise?  
Because we need sum of column so we need to loop to access column.
2. Why the first loop range is Array2D [0]?  
Because we need to loop column.
3. Why do we need to append the result to a new array?  
Because we need to append to mutable array.
4. Why don't we use str(input()) or int(input()) to get list of arrays from terminal?  
Because it is array2D.

## Exercise 2:

### Add people to the free room

We represent people in a room with an array 2D (3 rows, 3 columns)

- A free cell is represented by a 0
- A cell with a person is represented by a 1

```
[[0, 0, 1],  
 [0, 0, 0],  
 [0, 0, 1]]
```

A new person can be added to the room at the position [row, column] if:

- This position is FREE
- And if only **2 people max** are already in the room

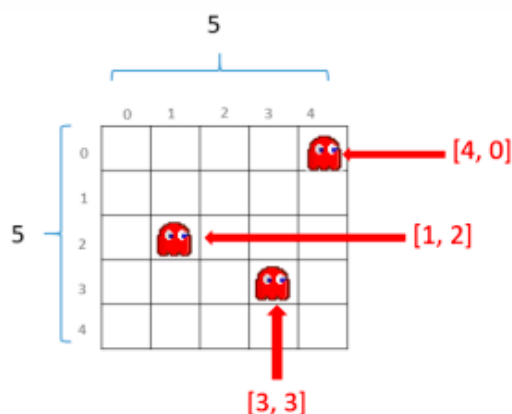
Example:

Input	Output
[[0, 0, 1], [0, 0, 0], [0, 0, 1]] 0 0	CAN ADD  (only 2 persons in room And the position (0,0) is free)
[[1, 0, 0], [0, 0, 0], [0, 0, 0]] 0 0	CANNOT ADD  (only 1 person in room but the position (0,0) is not free)
[[0, 0, 1], [0, 0, 1], [0, 0, 1]] 0 0	CANNOT ADD  (3 persons in room So cannot add)

1. Why does this exercise need to create a function?  
Because we need to call function and reduce code.
2. what is the purpose of that function?  
can pass data, known as parameters, into a function. A function can return data as a result.
3. why do we need to use a loop in loop in an array?  
Because we need to access to row and column .
4. what is the value of the variable peopleInRoom?  
Value of append row and column .
5. why we need to use if len(peopleInRoom) >=3: ?  
because we need to count number in peopleInRoom.
6. On else condition, why do we need to loop again?  
Because we need to loop value in peopleInRom to compare input newPersonRow and newPersonColumn.
7. why do we need the variable isCanAdd?  
Because if when we compare we nee True and False so We need to create It.

### Exercise 3:

#### [ARRAY 2D] DISPLAY MONSTERS!



We want to display monsters within a grid of 5 X 5 cells:

- a monster has a position on X : from 0 to 4
- a monster has a position on Y : from 0 to 4

We represent a monster position using an array of 2 elements :

`[position_X, position_Y ]`

- Enter a list of monsters position (array of array!)

For instance, this list represent the monsters on above image :

`[ [3, 3], [1, 2], [4, 0] ]`

- Print the grid of 5 X5 cells

- Cell with no monster : 0
- Cell with monster: \*

Result:

```
0 0 0 0 *  
0 0 0 0 0  
0 * 0 0 0  
0 0 0 * 0  
0 0 0 0 0
```

1. Why does this exercise need to create a function?  
Easy to call function and reduce code
2. what is the purpose of that function?  
Find row and column we should add 0 or \*.
3. What are the parameters in that function?  
The parameters in this function are monsterPosition, cellX, cellY.
4. Why do we need a loop of loop outside the function?  
Because we need to create grid that has 5row and 5column and insert.
5. Why do we need to call function while we are looping?  
Because we need to insert position of values that input.
6. Why the result variable needs to sum by “\n”?  
Because we have to enter the line when we add.