

Python Programming

List of lists - Indexing

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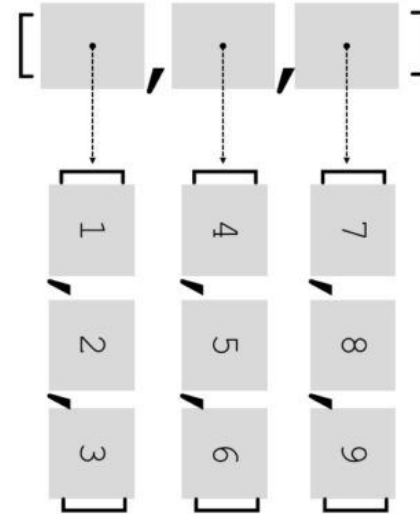


List of lists

- In this section, we won't learn new Python Syntax
- We will stress how nesting lists can create strong representation!
- A list of list of integer can create what we call a matrix
 - In C++ and Java it is called array. It has a fixed view
 - In python, we also have the numpy arrays
 - But we will focus here on using list of list to emulate a 2D array

Nesting lists

```
3 lst0 = [1, 2, 3]
4 lst1 = [4, 5, 6]
5 lst2 = [7, 8, 9]
6
7 print(lst2[1]) # 8
8
9 list_of_lists = [lst0, lst1, lst2]
10
11 print(list_of_lists)
12 # [[1, 2, 3], [4, 5, 6], [7, 8, 9]]
13
14 print(list_of_lists[2]) # [7, 8, 9]
15 print(list_of_lists[2][1]) # 8
```



Indexing (think 2D array)

	Col. 0	Col. 1	Col. 2	Col. 3
Row 0	8	16	9	52
Row 1	3	15	27	6
Row 2	14	25	2	10

Diagram illustrating 2D array indexing. The array is represented as a table with rows and columns. The value 6 is highlighted at Row 1, Column 3, with an arrow pointing to it from the label `val[1][3]`. Below this label, two arrows point to the `1` and `3` respectively, labeled "Row position" and "Column position".

```
3 lst = [  
4     [8, 16, 9, 52],  
5     [3, 15, 27, 6],  
6     [14, 25, 2, 10]  
7 ]
```

“Acquire knowledge and impart it to the people.”

“Seek knowledge from the Cradle to the Grave.”