Nested Lists

ASPC-A, Day 4

aspc
ateneo programming
summer camp

Iteration III: Part 3

NESTED LISTS

Nested Lists

You can have **lists inside of lists**.

```
cookie = [ [1, 2, 3], [5, 4], [7, 8, 9] ]
```

Nested Lists

```
cookie = [ [1, 2, 3], [5, 4], [7, 8, 9] ]


print( cookie[0] )
print( cookie[1] )
print( cookie[2] )
print( len(cookie) )
print( len(cookie[0]) )
print( len(cookie[1]) )
print( len(cookie[2]) )
```

Nested Lists

```
cookie = [ [1, 2, 3], [5, 4], [7, 8, 9] ]


print( cookie[0][1] )
print( cookie[1][0] )
print( cookie[0][2] )
print( cookie[1][1] + cookie[2][1] )
```

Viewing nested loops as grids

```
grid = [ ['a', 'b'], ['c','d'], ['e', 'f'] ]
```

`grid[0][0]` `'a'`	`grid[0][1]` `'b'`
`grid[1][0]` `'c'`	`grid[1][1]` `'d'`
`grid[2][0]` `'e'`	`grid[2][1]` `'f'`

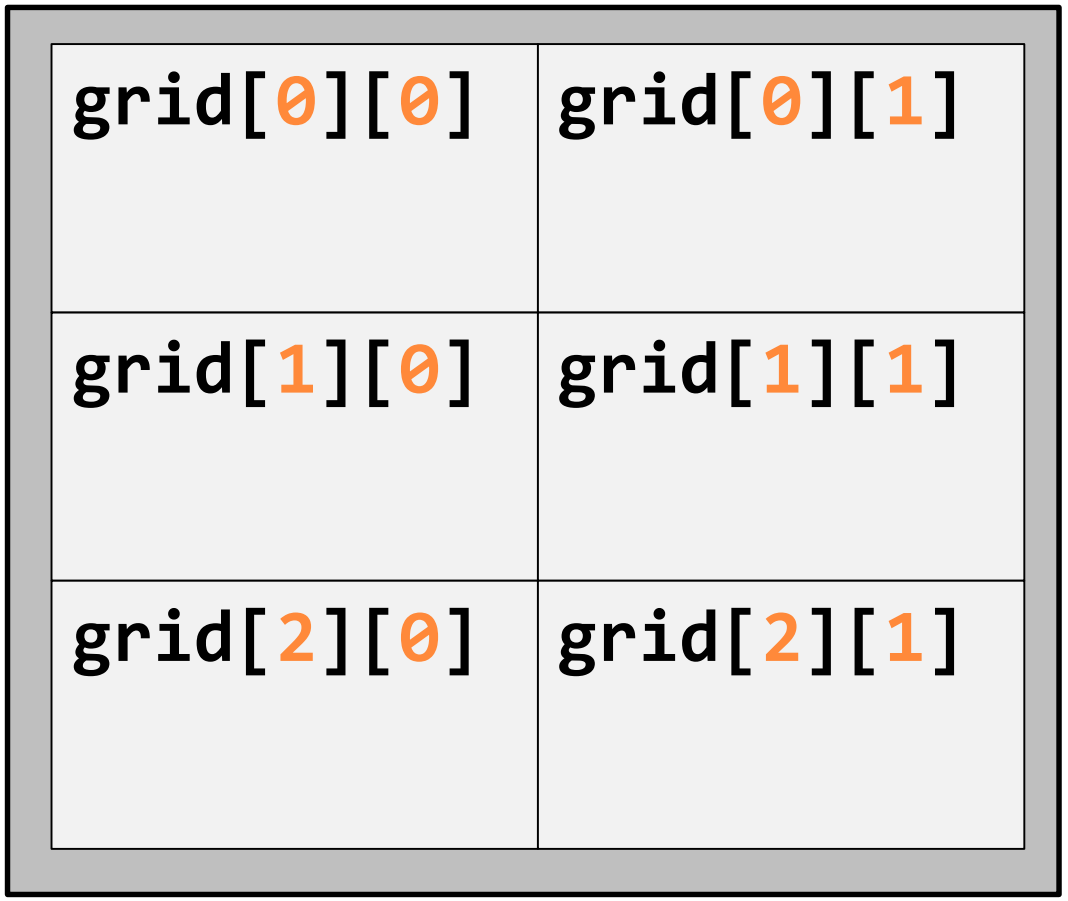
Viewing nested loops as grids

```
grid = [ ['a', 'b'], ['c','d'], ['e', 'f'] ]


for R in range(3):
    for C in range(2):
        print( grid[R][C] )
```

grid[0][0] 'a'	grid[0][1] 'b'
grid[1][0] 'c'	grid[1][1] 'd'
grid[2][0] 'e'	grid[2][1] 'f'

Getting a grid as input

```
grid = []

for R in range(3):
    for C in range(2):
        row = input().split()
        grid.append( row )
```



Exercise: Focus Frequency

- We're under attack by flying toasters! We have map of enemy frequencies in a grid. Help us determine how many enemies there are at a certain position!

		column				
row		**0**	**1**	**2**	**3**	**4**
	0	12	31	41	21	12
	1	31	41	13	5	3
	2	231	52	342	11	4
	3	232	4	3	2	65
	4	453	75	32	42	33

Exercise: Focus Frequency

Input

- The first line of input contains an integer N $(1 \leq N \leq 100)$, the size of the grid. The grid is an $N \times N$ square
- The next N lines contain N integers each, ranging from -10^6 to 10^6. This grid represents the number of enemies at each row/column of the map
- The last line of input contains two integers, R and C $(0 \leq R, C < N)$, the row and column which you need to check.

Exercise: Focus Frequency

Output

Output the number of enemies at row R and column C.

Exercise: Focus Frequency

Sample Input 1

```
5
12  31  41  21  12
31  41  13  5  3
231  52  342  11  4
232  4  3  2  65
453  75  32  42  33
1  3
```

Sample Output 1

```
5
```

Sample Input 2

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

Sample Output 2

```
1
```