

★. Nested Lists

details will be shared ←
by mid next week.

Announcement

Problem Solving Session

: Sunday, 12th June (9 pm)

optional

Test (Before 22nd June)

→ Beg → Intermediate.

From 22nd June

Tuples

strings

[OOPS-1] Beg

Dict??

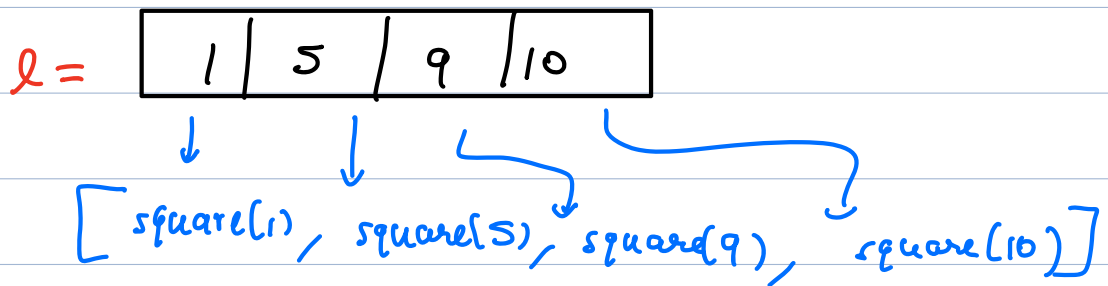
List
Comprehension

Int
2-3

Q1. Given a list, create another list containing squares of these numbers.

$l = [1, 5, 9, 10]$

$rs = [1, 25, 81, 100]$



$list(map(square, l))$

↑ ↑

function list

The diagram shows the `map` function being applied to the `square` function and the list l . Arrows point from the labels 'function' and 'list' to the `square` and l arguments respectively in the `map` function call.

odi = [- - - -]

Images [→] pixels

Excel

t20 = [- - - -]

test_runs = [- - - -]

runs = [odi, test_runs, t20]



List of List

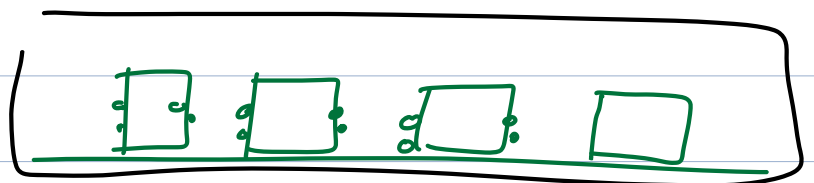
Nested List

2-D List

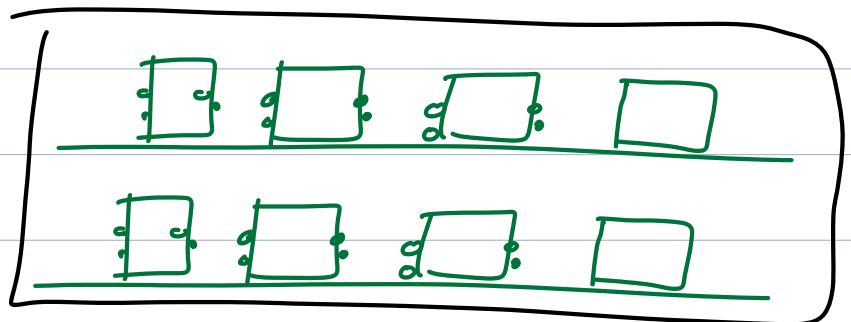
[[[]]]

Parking lot

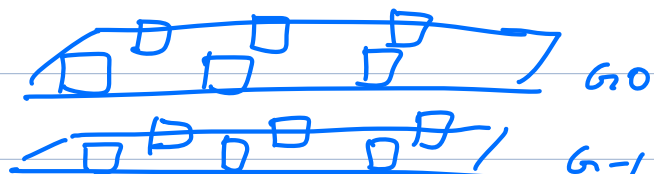
1-D



2-D parking lot



3-D parking lot



3x3 grid

2-D

range(3)

0	10	22	52
1	250	300	199
2	5	15	20

001

Test

T20

\uparrow^R
3

\uparrow^C
3

l
3x5

	0	1	2	3	4
0	l_{00}	l_{01}	l_{02}	l_{03}	l_{04}
1	l_{10}	l_{11}	l_{12}	l_{13}	l_{14}
2	l_{20}	l_{21}	l_{22}	l_{23}	l_{24}

(2,4)

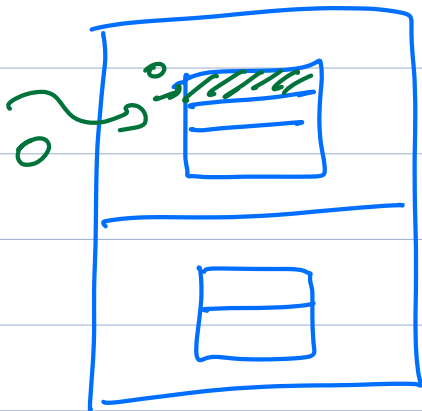
Input Format

$R \quad C$

$\left\{ \begin{array}{l} l_{00} \quad l_{01} \quad \dots \quad l_{0, \underline{C-1}} \\ l_{10} \quad l_{11} \quad \dots \quad l_{1, \underline{C-1}} \\ \vdots \\ l_{\underline{R-1}, 0} \quad l_{R-1, 1} \quad l_{R-1, 2} \quad \dots \quad l_{R-1, C-1} \end{array} \right.$

Q1. Find runs made by Sachin in all the formats.

How to iterate?



$l = \begin{bmatrix} 10 & 20 & 30 \\ 98 & 99 \end{bmatrix}$

	0	1	2
0	10	20	30
1	98	99	

$nums[0][0]$

$nums[1][1]$

	0	1	2
0	10	22	52
1	250	300	199
2	5	15	20

*	*
*	*

for i in range(2):

for j in range(2):

print('*', end='')

print()

mat =

	0	1
0 →	5	6
1	7	8

row idx
col idx

mat[0][0]
mat[0][1]
mat[1][0]
mat[1][1]

```
for i in range(2):
```

```
    for j in range(2):
```

```
        print(mat[i][j])
```

Q) Given a 2D matrix, print the main diagonal.

N x N square matrix

	0	1	2
(0,0)	5	6	7
(1,1)	1	2	3
(2,2)	4	5	6

$i=j$

5
2
6

HW: Challenge: Think about right diagonal.

10	22	52
200	300	199
5	15	20