① Numpy : Data Structure → Array : Homo

② 1D
[. .]

② 2D
[[. .] .]

③ 3D
[[[. .]] ,]

Create ← Manual → [ ]
Create ← Dynamic → reshape( )

.ndim
.size
.shape
.dtype
.type( )

① np.array( )
② np.arange( ) → min, max, inc
③ np.linspace( ) → min, max, no. of v
④ np.identity(s) → diagonal as 1
⑤ np.ones((s)) → one
⑥ np.zeroes((s)) → zero
⑦ np.random.randn( )
randint( )
uniform( )
;
;
;

random

Access

	1D	2D	3D
Shape :	[R,]	[R , C]	[L , R , C]
Indexing :	[R]	[R] , [R, C]	[L], [L , R] , [L , R, C]
Slicing :	[:]	[:], [:,:]	[:], [:,:], [:,:,:]

Start

End (n-1)

(Column indexing without Row) ✗

(Row indexing w/o layer, Column indexing w/o L,R) ✗

arr = [10, 20, 30, 40]

display 1st ele

arr[0] ⇝ [10]

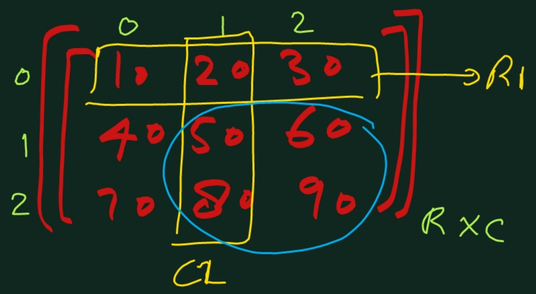
display last two ele

arr[-2:] ⇝ [30, 40]

display First two ele

arr[:2] ⇝ [10, 20]

arr =



Display 1st row

arr[0] ⇝ [10, 20, 30]

display 1st two rows

arr[0:2] ⇝ [[10 20 30]
[40 50 60]]

display last col

arr[:,-1] ⇝ [30
60
90]

display last two col

arr[:,-2:]

↳ [20 30
50 60
80 90]

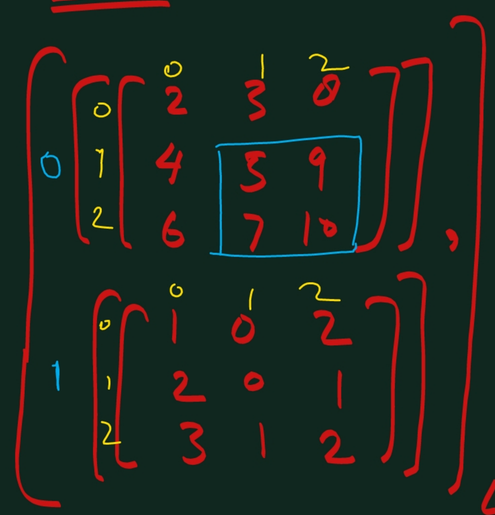
display the part

eg: arr[1,1] → 50

eg: arr[1:3, 1:3]

↳ [50 60
80 90]

3D



L x R x C

2 x 3 x 3

[L, R, C]

display first layer

arr[0] → [[2 3 8], [4 5 9], [6 7 10]]

display first row of last layer

arr[1, 0] ⇝ [1 0 2]

Part

arr[0, 1:3, 1:3]

↳ [[5 9], [7 10]]