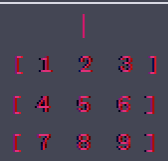
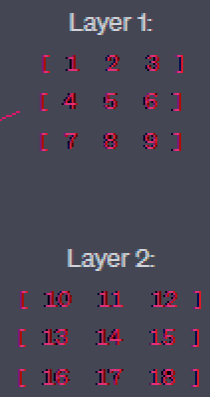
Vector, Matrix, and Tensor

	Vector	Matrix	Tensor
Definition	A 1-D array with `n` elements	A 2-D array with `m` rows and `n` columns	An n-dimensional array with `n` > 2
Numerical example	[1, 2, 3]	[[1, 2, 3], [4, 5, 6], [7, 8, 9]]	[[[1, 2, 3], [4, 5, 6], [7, 8, 9]], [[10, 11, 12], [13, 14, 15], [16, 17, 18]]]
Dimension	1-D	2-D	n-D
Shape (in Python)	(n,)	(m, n)	(i, j, k, ..., n)
Use case example	Storing a list of values, like prices	Storing a table of values, like a data table	Storing complex data, like multiple images in an image set





Number of Rows x Number of Columns

2 x 3 Matrix

2-D Array

(2 rows x 2 Columns)

$$\begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \end{bmatrix}$$

x = np.array([[1,2,3], [4,5,6]])

[[1,2,3],
[4,5,6]]