<https://www.youtube.com/watch?v=QUT1VHiLmmI>

**Basics: import numpy as np**

Converting list to numpy array

* A = np.array([[1, 2, 3, 4, 5, 6], [7, 8, 9, 10, 11, 12]])

Getting the dimension of the array

* print(a.ndim)

Getting the shape (2x5 or 5x9 et.)

* print(a.shape)

Getting the type of data

* print(a.dtype)

**Accessing/Changing specific elements, rows, columns, etc**

Getting a specific element

* a[row, column]

Getting a specific row

* a[row, :]

Getting a specific column

* a[:, column]

**Initializing different types of arrays:**

All zero matrix

* np.zeros((rows, columns)

All ones matrix

* np.ones((rows, columns))

Identity matrix

* np.identity(size)

**Exercise:**

|  |  |
| --- | --- |
|  | **a = np.ones((5, 5))**  **a[1:4,1:4] = np.zeros((3,3))**  **a[2, 2] = 9** |

Copying

* b = a.copy()

**Math**

<http://docs.scipy.org/doc/numpy/reference/routines.linalg.html>