

Python: NumPy Course Notes

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1 Learning Objectives

Concepts

- Creating and Saving NumPy ndarrays
- Using Built-in Functions to Create ndarrays
- Accessing, Deleting, and Inserting Elements Into ndarrays
- Slicing ndarrays
- Boolean Indexing, Set Operations, and Sorting
- Exercise: Manipulating ndarrays
- Arithmetic Operations and Broadcasting
- Exercise: Creating ndarrays with Broadcasting

Commands

- `np.array`
- `.shape`
- `.size`
- `np.save` and `np.load`
- `np.zeros`
- `np.ones`
- `np.eye`
- `np.diag`
- `np.arange`
- `np.linspace`
- `np.reshape`

- np.random
 - np.random.random
 - np.random.randint
 - np.random.normal
 - np.random.permutation
- np.delete
- np.append
- np.insert
- np.vstack
- np.hstack
- np.unique
- np.intersect1d
- np.setdiff1d
- np.union1d
- np.sort
- Mathematical Functions
 - np.add
 - np.subtract
 - np.multiply
 - np.divide
 - np.sqrt
 - np.exp
 - np.power
- Statistical Functions
 - mean
 - std
 - median
 - max
 - min

2 Creating and Saving NumPy ndarrays

Testing, Testing...

3 Using Built-in Functions to Create ndarrays

4 Accessing, Deleting, and Inserting Elements Into ndarrays

5 Slicing ndarrays

6 Boolean Indexing, Set Operations, and Sorting

7 Exercise: Manipulating ndarrays

8 Arithmetic Operations and Broadcasting

9 Exercise: Creating ndarrays with Broadcasting