Lesson 3 – Creating & Demonstrating a NumPy Class

Background: For this boot camp, we will be using IPython notebooks to demonstrate the NumPy library array functions. The purpose of this lesson is to refresh your understanding of Python class creation. As well as, some of the manipulation tools NumPy allows you to use on arrays.

Create a New Notebook

1. Open the Command Prompt
2. Navigate to your Lesson 3 Folder
3. Enter 'jupyter notebook' to launch the browser
4. Once the web page loads, create a new notebook called: 'numpy-demo'
5. In your new file, import the NumPy library.
    a. Reference Lesson 2 if needed.

Create a New Python Class

After importing NumPy, create an Object-Oriented program that utilizes the NumPy library to manipulate arrays. *The only requirements are as follows:*

1. Create a new Python class
    a. Name the class: 'Demo'

2. Instantiate a private variable
    a. Initialize variables within the object for use within functions
    b. Name the variables anything you want – just <u>NOT</u> 'array'

3. Create 3 functions within the new class as follows:
    a. takes two 2D arrays and checks whether the dot product can be computed
    b. takes a vertical 1D array and makes it horizontal
    c. takes two parameters and creates a matrix with dimensions of the two parameters

Note:

- If you need a NumPy or Python reference at any point, use these links:

  https://learnxinyminutes.com/docs/python3/

  https://docs.scipy.org/doc/numpy-1.13.0/reference/routines.array-manipulation.html

- Remember - object-oriented languages share similar syntax, experiment!
- Python Notebook files use the filename extension: '.ipynb'