NumPy

NumPy

- The first python data science library we will learn about is NumPy.
- Almost every data science library we learn about in this course is built using NumPy!
- Let’s explore what this section will cover and why it is important.

NumPy

- Section Goals
  - Understand NumPy
  - Create arrays with NumPy
  - Retrieve information from a NumPy array through slicing and indexing.
  - Learn basic NumPy operations
  - Test NumPy skills with exercise questions.

NumPy

- What is NumPy?
  - Python library for creating N-dimensional arrays
  - Ability to quickly broadcast functions
  - Built-in linear algebra, statistical distributions, trigonometric, and random number capabilities

NumPy

- Why use NumPy?
  - While NumPy structures look similar to standard Python lists, they are **much** more efficient!
  - The broadcasting capabilities are also extremely useful for quickly applying functions to our data sets.

Let’s get started!

Numpy Arrays

NumPy

- Let’s explore how to create NumPy arrays
    - Transforming standard list
    - Built-in functions
    - Generating random data
- We’ll also discuss some key attributes of NumPy arrays.

Numpy
Indexing and Selection

NumPy

- Let’s explore how to create NumPy arrays
    - Transforming standard list
    - Built-in functions
    - Generating random data
- We’ll also discuss some key attributes of NumPy arrays.

Numpy Operations

NumPy

- A key feature of NumPy is its ability to perform arithmetic on large arrays on an **element by element** basis.
- Let’s learn how this works with multiple arrays, as well as how we can apply universal array functions.

Numpy Exercises

Overview of Exercise Notebook

PIERIAN DATA

Numpy Exercise Solutions

Walkthrough of Solutions Notebook

PIERIAN DATA