

Data Manipulation I – NumPy I (Easy Exercises)

This worksheet is designed as a very gentle introduction to NumPy. All exercises are beginner-friendly and can be completed after finishing the NumPy I lesson. Estimated total time: 2 hours.

1. Getting Started with NumPy (15 minutes)

- 1 Import NumPy using the alias `np`.
- 2 Print the NumPy version.
- 3 Create and print a NumPy array from the list [1, 2, 3, 4, 5].

2. Creating Arrays (20 minutes)

- 1 Create an array containing numbers from 0 to 9.
- 2 Create an array of five zeros.
- 3 Create an array of five ones.
- 4 Create an array with values [10, 20, 30, 40].

3. Array Properties (15 minutes)

- 1 For the array [1, 2, 3, 4], print its size.
- 2 Print the data type of the array.
- 3 Print the shape of the array.

4. Indexing & Slicing (25 minutes)

- 1 Create the array [5, 10, 15, 20, 25] and print the first element.
- 2 Print the last element.
- 3 Print elements from index 1 to 3.
- 4 Change the value 10 to 100 and print the array.

5. Simple Array Operations (25 minutes)

- 1 Create the array [1, 2, 3, 4, 5] and add 10 to each element.
- 2 Multiply each element by 2.
- 3 Create arrays [1, 2, 3] and [4, 5, 6] and add them.
- 4 Subtract the second array from the first.

6. Useful NumPy Functions (20 minutes)

- 1 For the array [3, 6, 9, 12], find the minimum value.
- 2 Find the maximum value.
- 3 Calculate the sum of the elements.

4 Calculate the mean (average).

7. Optional Practice (20 minutes)

- 1 Create an array from 1 to 20 and print only even numbers.
- 2 Replace all values greater than 10 with 10.
- 3 Count how many elements are greater than 5.

End of exercises. Focus on understanding, not speed ■