# Python exercises:

Level 1

Explore the numpy & pandas module:

1. Create an array using list list\_1 = [10,11,12,13] and list\_2 = [15,12,13,14] and print the shape and dimension of the array created
2. From a 2D array extract all the elements of the 2 column.

Hint: 2 column will have index value as 1.

1. Create a 3\*3 array using list\_1 = [1,2,3] list\_2 = [4,5,6] list\_3 = [7,8,9]
2. Perform an element-wise multiplication using list\_1 = [2,3,4,5] list\_2 = [7,8,9,6] and obtain the output as a list.   
   Hint: Convert the list to an array and after multiplication convert it back to a list.
3. Create an array of first 10 multiples of 5 using the 'arange' function.
4. Given a dataframe df, use info, describe, columns, shape etc to analyse the dataframe.

df = pd.read\_csv('https://query.data.world/s/vBDCsoHCytUSLKkLvq851k2b8JOCkF')

1. Using set\_index command set the column 'X' as the index of the dataset and then print the head of the dataset.

df = pd.read\_csv('https://query.data.world/s/vBDCsoHCytUSLKkLvq851k2b8JOCkF')

Level 2:

1. Given an integer 'x', create an array of size m\*n having all integer values equal to 'x'.  
   Hint: Use dtype to specify integer.  
     
   **Format:  
   Input:   
   input 1:**A single integer 'x'  
   **input 2:**A single integer 'm' indicating the number of rows  
   **input 3:**A single integer 'n' indicating the number of columns  
   **Output:**An array of size 'm\*n' having all the values as 'x'  
     
   **Example:  
   Input 1:**1  
   3  
   3  
   **Output 1:**[[1 1 1]  
    [1 1 1]  
    [1 1 1]]
2. Extract all the border rows and columns from a 2-D array.  
     
   **Format:  
   Input:**A 2-D Python list  
   **Output:**Four NumPy arrays - First column of the input array, first row of the input array, last column of the input array, last row of the input array respectively.  
     
   **Example:  
   Input 1:**[[11 12 13 14]  
    [21 22 23 24]  
    [31 32 33 34]]  
   **Output 1:**[11 21 31]  
   [11 12 13 14]  
   [14 24 34]  
   [31 32 33 34]
3. Print only the even numbers of rows of the dataframe 'df'.  
   Note: Don't include the row indexed zero.
4. Sort the dataframe on 'month' and 'day' in ascending order in the dataframe 'df'.

df = pd.read\_csv('https://query.data.world/s/vBDCsoHCytUSLKkLvq851k2b8JOCkF')