Machine learning lab 2 - Numpy

1 . Create a Numpy array from the following list: [[1, 2, 3], [4, 5, 6], [7, 8,9]] . Print the values of the array and the shape.

2. Perform the following Numpy operations
a) Create a Numpy array my_arr filled with all ones with 3 rows and 4 columns.
b) Add the value 5 to each element of the Numpy array my_arr .
c) Perform the element-wise logarithm of the Numpy array my_arr .
d) Compute the mean in arr_mean ,
e) the standard deviation in arr_std ,
f) the sum in arr_sum ,
g) the max value in arr_max ,
h) the index of the max value in arr_max_idx of the array my_arr .
i) Compute the mean along the rows axis in arr_mean_rows of the array my_arr .

3. Create a Numpy array my_arr filled with all ones with 5 rows and 5 columns.
a) Assign the value of the element in the fourth row and the second column of the array my_arr into a variable value .
b) Assign the values of the slice corresponding to the rows from 0 to 2 (both included) and the columns from 1 to 2 (both included) into a variable slice_arr
c) Assign the values of the slice with all the columns of the last 3 rows into a variable slice_arr .
d) Assign the values of the slice with all the columns of the last 3 rows into a variable slice_arr . Then assign to all the elements of slice_arr the value -1

4. Create a Numpy array my_arr filled with all ones with 4 rows and 6 columns.
a) Counts the number of non-zero values in the array
b) Count the number of elements along a given axis
c) Trim the leading and/or trailing zeros from a 1-D array
d) Reverse a numpy array
e) Calculate the sum of the diagonal elements of a NumPy array
f) Adding and Subtracting Matrices in Python
g) Ways to add row/columns in numpy array
h) Matrix Multiplication in NumPy

5. Create a Numpy array my_arr filled with all ones with 4 rows and 6 columns.
a) How to get the indices of the sorted array using NumPy in Python?
b) Finding the k smallest values of a NumPy array
c) How to get the n-largest values of an array using NumPy?
d) Sort the values in a matrix