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| Course- BTech | Type- Specialization Core |
| Course Code- CSET-214 | Course Name- Data Analysis using Python |
| Year- 2024-25 | Semester- Odd |
| Date- 5th -9th Sep 2024 | Batch- |

**Lab # No. 2**

**Understanding Library Numpy, MatPlotlib**

**Introduction: NumPy**stands for **Numerical Python,** is an open-source Python library that provides support for large, multi-dimensional arrays and matrices. Matplotlib is a powerful plotting library in Python used for creating static, animated, and interactive visualizations. It provides users with the tools and functionality to represent data graphically, making it easier to analyse and understand.

# Numpy : Import Numpy library and print the version

1. Create a 3x3 identity matrix.
2. Create a 3x3 matrix with values ranging from 0 to 8.
3. Create a 4x4 matrix with values ranging from 0 to 15.
4. Generate a 2-D array with 3 rows, each row containing 5 random integers from 0 to 100.
5. Create a sequence of 15 values in range 0 to 6.
6. create a array of 50 numbers and reverse it
7. Reshaping 3x4 array to 2x2x3 array
8. Determine indices of non-zero elements from [1,0,7,0,0,4,0,10]
9. Create a 3x3 matrix with values ranging from 0 to 8 and negate all elements which are between 3 and 8
10. Create and print a 3x3x3 array with random values. Print the minimum and maximum values.

# Matplotlib: Import Matplotlib library and print the version.

# Draw a line in a diagram from position (0,0) to position (6,50):

# Draw two points in the diagram, one at position (1, 3) and one in position (8, 10):

# Draw a line in a diagram from position (8, 10) to (2, 6) then to (6, 1) and finally to position (8, 10):

# Mark each point in the above question with a star:

# Let x range from 1 to 5 and y is square of x, plot the graph between x and y. Now take x1 = [2,4,6,8,10] and y1= x^3 plot both the graph in same figure.