**Lab Session #4**

Title: Matrices and Vectors using NumPy

Aim: To implement the basic operations on Matrices and Vectors

Problem Definition: Develop Python Programs to do the following:

1. Add, subtract, multiply and divide two vectors.
2. Compute the vector dot product.
3. Find the sum of values in a matrix.
4. Calculate the sum of the diagonal elements of a NumPy array
5. Add and Subtract Matrices in Python
6. Add row/columns in numpy array
7. Matrix Multiplication in NumPy
8. Inverse a matrix using NumPy
9. Count the frequency of unique values in NumPy array
10. Multiply matrices of complex numbers using NumPy in Python.
11. Program to find matrix Determinant, Trace, Eigenvalues, Eigenvectors, Singular value decomposition of a Matrix.