Semester V - Lab Task 4

Subject : Python for Data Science (3150713)

Last date of submission : 29th July 2021 (B group) / 1st Aug 2021 (A group)

1. Write a NumPy program to calculate the difference between neighboring elements, element-wise of a given array.
2. Write a Python program to multiply two user defined matrices (size= n*n, where n>2) using NumPy.
3. Write a Python program to transpose and determinant of a user-defined matrix (entered as a 3*3 array) using NumPy. Additionally, find whether the matrix is invertible. If it is invertible, also find the inverse of that matrix.
4. Solve a system of 3 linear equations (in 3 variables: x, y, z) using Python NumPy package.

   The program should ask the user for these 3 equations, input them as string, and use NumPy operations on matrices to evaluate the value of three variables.
5. Write a NumPy program to create a 5x5 array with random values and find the minimum and maximum values.
6. Write a NumPy program to create a random array with 1000 elements and compute the average, variance, standard deviation of the array elements.
7. Write a NumPy program to generate five random numbers from the normal distribution.

Dr. Hargeet Kaur

Department of ICT, AIIE