**Assignments for Numpy and Matplotlib**

1. For a given n by n square matrix write a program for summing the principal and non- principal diagonal elements.
2. Create a list of 10 students and 6 subjects, and generate random marks between 0 and 100 for each student for all subjects. Create a menu driven program to find out and display:
3. Students with highest and lowest total marks
4. Subjects with the highest and lowest average score
5. Students with the highest score in each subject
6. A = np.array ([[17, 24, 1, 8, 15], [23, 5, 7, 14, 16], [ 4, 6, 13, 20, 22], [10, 12, 19, 21, 3], [11, 18, 25, 2, 9]]). Verify whether array A is a magic square.
7. Create an n dimensional array with random elements from 0 to 10. Count how many even indices have odd elements and how many odd indices have even elements.
8. Generate 100 random integers from 0 to 10 and make a bar chart for numbers versus its frequency. Also draw a pie chart for this.