

LAB ASSIGNMENTS
PYTHON PROGRAMMING LAB
MCA 1st Year 1st Semester, 2022
Subject Code: MCAP1112
Day 8

1. Create a 4 x 4 NumPy array with random values and find the minimum and maximum values.
2. Create a random vector of size 10 and sort it.
3. Create a 3x3 matrix with values ranging from 0 to 6.
4. Create a 2d array with 1 on the border and 0 inside.
5. Find the most frequent value in a NumPy array.
6. Interchange two axes of a NumPy array.
7. Count the number of elements along a given axis using NumPy.
8. Reverse a NumPy array.
9. Replace negative values with zeroes in a NumPy array.
10. Extract all odd numbers from a numPy array.
11. Replace all odd numbers in numPy array with -1.
12. Create a four dimensions array with random values and get the sum over the last two axes.
13. Use NumPy to randomly generate an array with 250 values, where the mean is 120, and the standard deviation is 12. Use Matplotlib to create a histogram on that generated data.
14. Consider the following data:
Programming languages: Java, Python, PHP, JavaScript, C#, C++
Popularity: 22.2, 17.6, 8.8, 8, 7.7, 6.7
(i) display a bar chart of the popularity of programming Languages.
(ii) display a horizontal bar chart of the popularity of programming Languages.
15. Consider the following data:
Programming languages: Java, Python, PHP, JavaScript, C#, C++
Popularity: 22.2, 17.6, 8.8, 8, 7.7, 6.7
(i) create a pie chart of the popularity of programming Languages.
(ii) add a title.
(iii) make multiple wedges of the pie.
16. Create a scatter plot for the following data
math_marks = [88, 92, 80, 89, 100, 80, 60, 100, 80, 34]
science_marks = [35, 79, 79, 48, 100, 88, 32, 45, 20, 30]