Numpy

1. Create a 5X2 integer array from a range between 100 to 200 such that the difference between each element is 10

2. Write a NumPy program to create a 3x3x3 array filled with arbitrary values and find the minimum and maximum values.

3. Write a NumPy program to create a 5x5 zero matrix with elements on the main diagonal equal to 1, 2, 3, 4, 5.

4. Given an array

   arr = np.array([0, 1, 2, 3, 4, 5, 6, 7, 8, 9
     i) Extract all odd numbers from arr
     ii) Replace all odd numbers in arr with -1

5. Write a NumPy program to create a 3x3 identity matrix, i.e. diagonal elements are 1, the rest are 0.

6. Write a NumPy program to convert an array to a float type.

7. Write a NumPy program to generate five random numbers from the normal distribution.

8. Following is the input NumPy array delete column two and insert following new column in its place.

sampleArray=numpy.array([[34,43,73],[82,22,12],[53,94,66]])
 newColumn = numpy.array([[10,10,10]])

9. Write a NumPy program to compute the multiplication of two given matrices.

10. Write a NumPy program to create a random vector of size 10 and sort it.

11. Write a NumPy program to compute the covariance matrix of two arrays.

12.Create a 4X2 integer array and Prints its :
  i)The shape of an array.
  ii) Array dimensions.
  iii) The Length of each element of the array in bytes

13. Write a NumPy program to concatenate element-wise two arrays of string.

14. Write a NumPy program to capitalize the first letter, lowercase, uppercase, swapcase, title-case of all the elements of a given array.

15. Write a NumPy program to convert a given array into a list.

16. Write a NumPy program to compute the sum of all elements, sum of each column and sum of each row of a given array.

17. Write a NumPy program to create a random 10x4 array and extract the first five rows of the array and store them into a variable.

18. Write a NumPy program to get the unique elements of a 1D and 2D array.

19. Write a NumPy program to get the unique elements of an array.

arr= [-10 12.12 -0.2]

20. Write a NumPy program to save a given array to a text file and load it. You have to save and load files using numpy library .