

NumPy Assignments

- 1.** Write a NumPy program to test whether none of the elements of a given array is zero.
- 2.** Write a NumPy program to test whether any of the elements of a given array is non-zero. The output should be “Yes” if all elements are zero and “No” otherwise.
- 3.** Write a NumPy program to test element-wise for positive or negative numbers in an array. The number of positive and negative elements should be printed.
- 4.** Write a NumPy program to test whether two arrays are element-wise equal. The output should be “Yes” if all elements are equal and “No” otherwise.
- 5.** Write a NumPy program to create an element-wise comparison (greater, equal or less) for two given arrays. The output should be an array of same dimension as the input arrays and containing 1, 0, or -1 at the corresponding places for greater, equal or less respectively.
- 6.** Write a NumPy program to create an array with the values 1, 7, 13, 105 and determine the size of the memory occupied by the array.
- 7.** Write a NumPy program to create an array of 10 zeros, 10 ones, 10 fives.
- 8.** Write a NumPy program to create an array of the integers from 30 to 70.
- 9.** Write a NumPy program to create an array of all the even integers from 30 to 70.
- 10.** Write a NumPy program to create a 3x3 identity matrix.
- 11.** Write a NumPy program to generate a random number between 0 and 1.
- 12.** Write a NumPy program to generate an array of 15 random numbers from a standard normal distribution.
- 13.** Write a NumPy program to create a vector with values ranging from 15 to 55 and print all values except the first and last.
- 14.** Write a NumPy program to create a 3X4 array using and iterate over it.
- 15.** Write a NumPy program to create a vector of length 10 with values evenly distributed between 5 and 50.

- 16.** Write a NumPy program to create a vector with values from 0 to 20 and change the sign of the numbers in the range from 9 to 15.
- 17.** Write a NumPy program to create a vector of length 5 filled with random integers from 0 to 10.
- 18.** Write a NumPy program to multiply the values of two given vectors.
- 19.** Write a NumPy program to create a 3x4 matrix filled with values from 10 to 21.
- 20.** Write a NumPy program to find the number of rows and columns of a given matrix.
- 21.** Write a NumPy program to create a 10x10 matrix, in which the elements on the borders will be equal to 1, and rest all 0.
- 22.** Write a NumPy program to create a 5x5 zero matrix with elements on the main diagonal equal to 1, 2, 3, 4, 5.
- 23.** Write a NumPy program to create a 3x3x3 array filled with random float values between 0 to 5.
- 24.** Write a NumPy program to compute sum of all elements, sum of each column and sum of each row of a given array.
- 25.** Write a NumPy program to save a given array to a text file and then re-load it into a variable.