

Numpy Exercises

1. Create a null vector of size 10 but the fifth value is 1
2. Create a vector with values ranging from 10 to 49
3. Reverse a vector (first element becomes last)
4. Create a 3x3 matrix with values ranging from 0 to 8
`hint: reshape`
5. Find indices of non-zero elements from [1,2,0,0,4,0]
`hint: np.nonzero`
6. Create a 3x3x3 array with random values
`hint: np.random.random`
7. Create a 10x10 array with random values and find the minimum and maximum values
`hint: min, max`
8. Create a random vector of size 30 and find the mean value
`hint: mean`
9. Create a 2d array with 1 on the border and 0 inside
`hint: array[1:-1, 1:-1]`
10. Normalize a 5x5 random matrix
`hint: (x -mean)/std`
11. Multiply a 5x3 matrix by a 3x2 matrix (real matrix product)
12. Given a 1D array, negate all elements which are between 3 and 8, in place.
13. Find the eigenvalues and eigenvectors of a square matrix.
`hint: np.linalg.eig`
14. Find the inverse of a square matrix.
`hint: np.linalg.inv`