NumPy Array (21 – 30)

21. Write a NumPy program to find the set exclusive-or of two arrays. Set exclusive-or will return sorted, distinct values in only one (not both) of the input arrays.

    Array1: [0 10 20 40 60 80]

    Array2: [10, 30, 40, 50, 70]

    Unique values that are in only one (not both) of the input arrays:

    [0 20 30 50 60 70 80]

22. Write a NumPy program to find the union of two arrays. Union will return a unique, sorted array of values in each of the two input arrays.

    Array1: [0 10 20 40 60 80]

    Array2: [10, 30, 40, 50, 70]

    Unique sorted array of values that are in either of the two input arrays:

    [0 10 20 30 40 50 60 70 80]

23. Write a NumPy program to test whether all elements in an array evaluate to True.

    Note: 0 evaluates to False in NumPy.

24. Write a NumPy program to test whether any array element along a given axis evaluates to True.

    Note: 0 evaluates to False in NumPy.

25. Write a NumPy program to construct an array by repeating.

    Sample array: [1, 2, 3, 4]

    Expected Output:

    Original array

    [1, 2, 3, 4]

    Repeating 2 times

    [1 2 3 4 1 2 3 4]

    Repeating 3 times

    [1 2 3 4 1 2 3 4 1 2 3 4]

26. Write a NumPy program to repeat array elements.

    Expected Output:

[3 3 3 3]

[1 1 2 2 3 3 4 4]

27. Write a NumPy program to find the indices of the maximum and minimum values along the given axis of an array.

    Original array: [1 2 3 4 5 6]

    Maximum Values: 5

    Minimum Values: 0

28. Write a NumPy program to compare two arrays using NumPy.

    Array a: [1 2]

    Array b: [4 5]

    a > b

    [False False]

    a >= b

    [False False]

    a < b

    [True True]

    a <= b

    [True True]

29. Write a NumPy program to sort along the first and last axes of an array.

    Sample array: [[2,5],[4,4]]

    Expected Output:

    Original array:

    [[4 6]

    [2 1]]

    Sort along the first axis:

    [[2 1]

    [4 6]]

    Sort along the last axis:

    [[1 2]

    [4 6]]

30. Write a NumPy program to sort pairs of a first name and a last name and return their indices (first by last name, then by first name).

first_names = (Betsey, Shelley, Lanell, Genesis, Margery)

last_names = (Battle, Brien, Plotner, Stahl, Woolum)

Expected Output:

[1 3 2 4 0]