LAB TASKS

Note: Please create a notebook on jupyter or colab and do following task

1. Create a 1D array of integers from 1 to 20. Reshape it into a 4x5 2D array, then replace all elements in the last column with zeros. Finally, flatten the array back to 1D and print the result.

2. Generate a 2D array of random integers between 10 and 50 with a shape of 5x5. Calculate and print the mean, sum, minimum, and maximum values for each row and each column separately.

3. Create an identity matrix of size 4x4. Add a constant (e.g., 5) to each element in the diagonal, and then replace the last row with a row of ones. Print the final matrix.

4. Generate a 1D array of 15 random integers between 0 and 20. Count and display the number of occurrences of each unique value in the array, and list the indices of elements greater than 10.

5. Create a 3x4 array filled with random floating-point numbers between 0 and 1. Round each element to two decimal places, replace the elements in the second column with 0.5, and print the modified array.

Note: Please don’t use ChatGPT for your better practice