Assignment-2

1. Mathematical Functions
Question: Create an array of angles [0, 30, 45, 60, 90]in degrees. Compute:
Sine values.
Cosine values.
Convert the angles to radians before computation.

2. Reshaping and Transposing
Question: Create a 1D array with 12 elements ranging from 1 to 12. Reshape it into:
A 3x4 matrix.
A 4x3 matrix. Then, find the transpose of the reshaped arrays.

3. Statistical Analysis
Question: Generate a 2D array of shape (5, 4) with random integers between 10 and 50. Compute:
Mean of the array.
Standard deviation.
Minimum and maximum values of each column.

4. Linear Algebra
Question: Create two 2D arrays:
A = np.array([[1, 2], [3, 4]])
B = np.array([[5, 6], [7, 8]]) Perform the following:
Matrix multiplication of A and B.
Find the determinant of A.
Compute the inverse of A.

5. Sorting and Searching
Question: Create an array of 15 random integers between 1 and 100.
Perform:
Sort the array in ascending order.
Find the indices of elements greater than 50.
Replace all values greater than 80 with -1.