import numpy as np

# Creating two arrays for demonstration

arr1 = np.array([[1, 2], [3, 4]])

arr2 = np.array([[5, 6], [7, 8]])

# Addition

add\_result = np.add(arr1, arr2)

# Subtraction

sub\_result = np.subtract(arr1, arr2)

# Element-wise multiplication

mul\_result = np.multiply(arr1, arr2)

# Element-wise division

div\_result = np.divide(arr1, arr2)

# Matrix multiplication (Dot product)

matmul\_result = np.matmul(arr1, arr2)

# Transpose of a matrix

transpose\_result = np.transpose(arr1)

# Element-wise square root

sqrt\_result = np.sqrt(arr1)

# Element-wise exponentiation

exp\_result = np.exp(arr1)

# Element-wise logarithm (natural logarithm)

log\_result = np.log(arr1)

# Element-wise sine and cosine

sin\_result = np.sin(arr1)

cos\_result = np.cos(arr1)

# Element-wise absolute values

abs\_result = np.abs(arr1)

# Sum of all elements in an array

sum\_result = np.sum(arr1)

# Minimum and Maximum values in an array

min\_value = np.min(arr1)

max\_value = np.max(arr1)

print("Array 1:")

print(arr1)

print("\nArray 2:")

print(arr2)

print("\nAddition:")

print(add\_result)

print("\nSubtraction:")

print(sub\_result)

print("\nElement-wise Multiplication:")

print(mul\_result)

print("\nElement-wise Division:")

print(div\_result)

print("\nMatrix Multiplication:")

print(matmul\_result)

print("\nTranspose:")

print(transpose\_result)

print("\nSquare Root:")

print(sqrt\_result)

print("\nExponentiation:")

print(exp\_result)

print("\nNatural Logarithm:")

print(log\_result)

print("\nSine:")

print(sin\_result)

print("\nCosine:")

print(cos\_result)

print("\nAbsolute Values:")

print(abs\_result)

print("\nSum of Elements:")

print(sum\_result)

print("\nMinimum Value:")

print(min\_value)

print("\nMaximum Value:")

print(max\_value)