

In [1]: `import numpy as np`

In [31]: `# Task 1:
Given a matrix [[1, 2, 3], [4, 5, 6], [7, 8, 9]], calculate the sum of each column
a = np.array([[1, 2, 3],
 [4, 5, 6],
 [7, 8, 9]])

result = []
summ = 0
for i in range(len(a)):
 summ = 0
 for j in range(len(a)):
 summ+=a[j][i]
 result.append(summ)
print(result)`

[12, 15, 18]

In [13]: `# Task 2:
Given a 2D array, calculate the sum of the diagonal elements that are divisible by 3

x = np.array([[3,2,3],
 [4,5,6],
 [7,8,9]])

s = 0
for i in range(len(x)):
 for j in range(len(x)):
 if i==j and x[i][j]%3==0:
 s += x[i][j]
print("sum of Diagonal elements is : ",s)`

sum of Diagonal elements is : 12

In [34]: `# Task 3:
Create a function that takes an array and returns a new array with the elements
normalized between 0 and 1.
def arrayNormalizer(array):
 maximum = np.max(array)
 newArray = (np.copy(array)/maximum) - 0.1
 return newArray
a = np.array([[1,2,3],
 [4,5,6],
 [7,8,9]])
y = np.round_(arrayNormalizer(a),2)
print(y)`

[[0.01 0.12 0.23]
 [0.34 0.46 0.57]
 [0.68 0.79 0.9]]