Lab9\_numpy mathematical\_ANP-C7281 and ANP-C7374

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**1. Calculate the total revenue generated by two product categories in a store**

**Input:**

**category1\_revenue = np.array([500, 600, 700, 550])**

**category2\_revenue = np.array([450, 700, 800, 600])**

**Output: Total Revenue: [ 950 1300 1500 1150]**

**PROGRAM :**

import numpy as np

category1\_revenue = np.array([500, 600, 700, 550])

category2\_revenue = np.array([450, 700, 800, 600])

total\_revenue = category1\_revenue + category2\_revenue

print("Total Revenue:", total\_revenue)

**OUTPUT :** Total Revenue: [ 950 1300 1500 1150]

**2. Write a NumPy program to create a 3x3 matrix with values ranging from 2 to 10.**

**PROGRAM :**

import numpy as np

matrix = np.arange(2, 11).reshape(3, 3)

print("3x3 Matrix with values ranging from 2 to 10:")

print(matrix)

**OUTPUT :**

3x3 Matrix with values ranging from 2 to 10:

[[ 2 3 4]

[ 5 6 7]

[ 8 9 10]]

**3. Determine which products in a store are out of stock (quantity is 0).**

**Input: inventory = np.array([10, 0, 5, 0, 20, 0])**

**Output: Out of Stock Products: [0 0 0]**

**PROGRAM :**

import numpy as np

inventory = np.array([10, 0, 5, 0, 20, 0])

out\_of\_stock = inventory == 0

print("Out of Stock Products:", out\_of\_stock.astype(int))

**OUTPUT :**

Out of Stock Products: [0 1 0 1 0 1]

**4. Calculate the total cost of items in a shopping cart, considering the quantity and price per item.**

**Input: quantity = np.array([2, 3, 4, 1])**

**price\_per\_item = np.array([10.0, 5.0, 8.0, 12.0])**

**Output: Total Cost of Items: [20. 15. 32. 12.]**

**PROGRAM :** import numpy as np

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

price\_per\_item = np.array([10.0, 5.0, 8.0, 12.0])

total\_cost = quantity \* price\_per\_item

print("Total Cost of Items:", total\_cost)

**OUTPUT :**

Total Cost of Items: [20. 15. 32. 12.]