PYTHON LAB – 20

NUMPY mathematical operations

NAME: Keerthana K R

ID: AF0363623

QUESTIONS

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]
2. Calculate the profit made by a company
   Input: revenue = np.array([10000, 12000, 11000, 10500])
   expenses = np.array([4000, 5000, 4500, 4800])
   Output: Profit: [6000 7000 6500 5700]
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]
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.]

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]

Code:

```
#importing numpy package
import numpy as np

#Input data of category 1 & 2 revenue
category1_revenue = np.array([500, 600, 700, 550])
category2_revenue = np.array([450, 700, 800, 600])

#Printing category 1 & 2 revenue
print("Category1 revenue :",category1_revenue)
print("Category2 revenue :",category2_revenue)

#Finding total revenue by adding category 1 & 2 revenue
total_revenue = category1_revenue + category2_revenue

#printing total revenue
print("Total revenue :",total_revenue)
```

OUTPUT:

```
Category1 revenue : [500 600 700 550]
Category2 revenue : [450 700 800 600]
Total revenue : [ 950 1300 1500 1150]
```

2. Calculate the profit made by a company
   Input: revenue = np.array([10000, 12000, 11000, 10500])
   expenses = np.array([4000, 5000, 4500, 4800])
   Output: Profit: [6000 7000 6500 5700]

Code:

```
#importing numpy package
import numpy as np

#Input data of revenue and expenses
revenue = np.array([10000, 12000, 11000, 10500])
expenses = np.array([4000, 5000, 4500, 4800])

#Printing revenue and expenses
print("Revenue :",revenue)
print("Expenses :",expenses)

#Finding profit by subtracting expenses from revenue
profit = revenue - expenses

#printing expenses
print("Profit :",profit)
```

OUTPUT:

```
Revenue : [10000 12000 11000 10500]
Expenses : [4000 5000 4500 4800]
Profit : [6000 7000 6500 5700]
```

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]

Code:

```
#importing numpy package
import numpy as np

#Input data of product stock
inventory = np.array([10, 0, 5, 0, 20, 0])

#print data of product
print("Product stock :",inventory)

#Finding out of stock product
Out_of_stock = inventory[inventory == 0]

#Printing out of stock products
print("Out of Stock Products:",Out_of_stock)
```

OUTPUT:

```
Product stock : [10  0  5  0 20  0]
Out of Stock Products: [0 0 0]
```

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.]

Code:

```
#importing numpy package
import numpy as np

#Input data of quantity and price
quantity = np.array([2, 3, 4, 1])
price_per_item = np.array([10.0, 5.0, 8.0, 12.0])

#Printing quantity and price
print("Quantity :",quantity)
print("Price per item :",price_per_item)

#Finding total cose of items by multiplying quantity with
cost per item
total_cost = quantity * price_per_item

#Printing total cost
print("Total cost of items :",total_cost)
```

OUTPUT:

```
Quantity : [2 3 4 1]
Price per item : [10.  5.  8. 12.]
Total cost of items : [20. 15. 32. 12.]
```