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Batch - D9
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Class Assessment - 2

23/30

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Translate.

Q.1

a] In Numpy, broadcasting is powerful feature that allows array of different shapes & sizes to be combined or operated on together
- The smaller array is broadcast across the larger array so that they have compatible shapes of elements wise operators.
- The broad casting rule in numpy is that dimensions are capalible when they are equal or use of then
- If dimensions of arrays are capatible Numpy will rise a 'value error'.

- eg. input numpy np
arr1 = np.array([[1,2,3],[4,5,6]])

arr2 = np.array([10,20,30])
result = arr1 + arr2
print(result)

⟹ output array([[11,12,33]
[14,25,36]])

Here each element of arr1 is added to corresponding element of broadcasted 'arr2' leading to final result.

Q.2 In numpy both 'np.dot()' & 'np.matmul()' can be used for matrix multiplication: but they have some difference in terms of their behaviour & usage

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a) 'nD.dot()'

The nD.dot() function in numpy is generate purpose matrix multiplication function. It can perform dot products & matrix multiplication for 1-D & 2-D array

- For 2-D array, performs matrix multiplication & fo 1-D array it perform inner product (dot product().

b) (nD. matmul()

- nD matmul() function is specifyically designe for matrix multiplication

- It provide a clear & more explict syntax for matrix multiplication making np code core Infact 'npl matmul()' is equivalent to operation in python introduce for matrix multiplication starting from python 3.5,

```
import pandas as pd
first 5= rows = saler data head()
print (first_5_rows)
```

b) data_types = sales_data_types

```
Import pandas as pd
Sales= data [price : per unit] = 10
 Sales_data ['Total_sales'] : sales_data [utility_solid]
                              Sales data ['price_per_unit]
print (sales_data)
```

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d] sales_data['transaction_Date'] = pd.to_datetime(sales['Transaction_Date'])
print(Dates_data)

Q.5 Import pandas as pd
Average quantity per product = sales_data.groophel('product ID')['quantity'].solid_mean()

Q.6. a] Numerical python

Q.7 b] arr = numpy array([1,2,3])

Q.8 a] create on array filled with zeros

Q.9 a] A-Dimensional labelled data structure

Q.10 c] df['column_name']

Q.11 b] students_data['Age']

Q.12 b] sum(sales_data[prince] * sales_data['quantity_solid]

Q.13 a] A numpy is primarily used for data manipulation & mathematical operation homogeous array. while pandas provide high level data structure & functions to

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manipulate & analyze structured Data like Dataframes

Q.14 a. df.iloc[-3]

Q.15 a. drops all rows with missing values

Q.16 a. df.apply()

Q.17 a. df.sort_values('column_name'))

Q.18 b. Return the large n value in specific column.

Q.19 c. df.to_csv.output(sv,)

Q.20 b. convert a column to datetime format

Q.21 a. df.fillna()