Lab Assignment 18

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TOPIC : NUMPY FUNCTION

QUESTION 1   Suppose you have a dataset containing daily temperature readings for a city, and you want to identify days with extreme temperature conditions. Find days where the temperature either exceeded 35 degrees Celsius (hot day) or dropped below 5 degrees Celsius (cold day).

INPUT: temperatures = np.array([32.5, 34.2, 36.8, 29.3, 31.0, 38.7, 23.1, 18.5, 22.8, 37.2,4,25,12,-4,-12])

CODE:

```
import  numpy as np

temperature=np.array([32.5, 34.2, 36.8, 29.3, 31.0, 38.7, 23.1, 18.5, 22.8, 37.2,4,25,12,-4,-12

hot_days=np.where(temperature>35)

cold_days=np.where(temperature<5)

print("Hot days:")

for i in hot_days[0]:

    print(f"Day{i}: {temperature[i]}")

print("\ncold days:")

for i in cold_days[0]:

  print(f"Day {i}: {temperature[i]}")
```

OUTPUT:

```
Hot days:
2: 36.8
5: 38.7
9: 37.2
Hot days:
2: 36.8
5: 38.7
9: 37.2
```

QUESTION 2 Suppose you have a dataset containing monthly sales data for a company, and you want to split this data into quarterly reports for analysis and reporting purposes.

INPUT: Input: monthly_sales = np.array([120, 135, 148, 165, 180, 155, 168, 190, 205, 198, 210, 225])

CODE:

```python
import numpy as np


# Monthly sales data

monthly_sales = np.array([120, 135, 148, 165, 180, 155, 168, 190, 205, 198, 210, 225])


quarters = monthly_sales.reshape(4, 3)


# Calculate total sales for each quarter

quarterly_sales = np.sum(quarters, axis=1)


# Display quarterly sales

print("Quarterly Sales:", quarterly_sales)
```

OUTPUT:

Quarterly Sales: [403 500 563 633]