

Scenario: You are working on a project that involves analysing student performance data for a class of 32 students. The data is stored in a NumPy array named student scores, where each row represents a student and each column represents a different subject. The subjects are arranged in the following order: Math, Science, English, and History. Your task is to calculate the average score for each subject and identify the subject with the highest average score.

Question: How would you use NumPy arrays to calculate the average score for each subject and determine the subject with the highest average score? Assume 4x4 matrix that stores marks of each student in given order.

AIM: To calculate the total yearly sales and the percentage increase from the 1st quarter to the 4th quarter using NumPy arrays and arithmetic operations.

PROCEDURE:

1. Import NumPy and create a 4×4 array of student scores.
2. Compute the subject-wise averages using `np.mean()` along axis 0.
3. Store subject names in a list for identification.
4. Use `np.argmax()` to find the subject with the highest average.

The screenshot shows a Jupyter Notebook cell with the following code:

```
main.py
1 import numpy as np
2
3 student_scores = np.array([
4     [85, 78, 92, 74],
5     [88, 82, 79, 90],
6     [76, 85, 88, 80],
7     [90, 91, 84, 86]
8 ])
9
10 averages = np.mean(student_scores, axis=0)
11 subjects = ["Math", "Science", "English", "History"]
12
13 highest_subject = subjects[np.argmax(averages)]
14
15 print("Average scores:", averages)
16 print("Highest average subject:", highest_subject)
```

The output pane displays the results of the code execution:

Average scores: [84.75 84. 85.75 82.5]
Highest average subject: English
== Code Execution Successful ==