

Scenario-Based Question on Matrix Addition

Problem Statement:

A university's grading system stores students' scores in a two-dimensional matrix. Each row represents a student, and each column represents a subject. The university wants to calculate the final scores for students by adding marks from two different evaluations: **Mid-Term** and **End-Term**.

Write a Java program that takes two matrices as input (Mid-Term and End-Term scores) and computes the final scores by adding corresponding elements from both matrices. The program should display the final result in a matrix format.

Input Format:

- First input: Number of students (rows) and number of subjects (columns).
- Next, input elements for the **Mid-Term matrix**.
- Next, input elements for the **End-Term matrix**.

Constraints:

- $1 \leq \text{students, subjects} \leq 10$
- $0 \leq \text{marks} \leq 100$

Output Format:

- A matrix representing the final scores after addition.

Sample Input:

```
2 3
45 50 40
30 35 45
55 40 50
40 45 35
```

(First row: Number of students = 2, Number of subjects = 3)

(Next two rows: Mid-Term scores matrix)

(Next two rows: End-Term scores matrix)

Sample Output:

```
Final Scores Matrix:
100 90 90
70 80 80
```

Scenario-Based Question on Matrix Addition

Problem Statement:

A robotics company is developing an AI system to analyze sensor data collected from different robots. The system receives two matrices:

1. **Sensor Readings in the Morning**
2. **Sensor Readings in the Evening**

Each matrix represents data from multiple robots, where rows correspond to different robots, and columns represent different sensor values. The company needs to compute the **total sensor readings for the day** by adding the corresponding elements of both matrices.

Write a Java program that:

- Accepts two matrices as input (morning and evening sensor readings).
- Computes the total sensor readings by performing matrix addition.
- Displays the final matrix containing the total daily sensor readings.

Input Format:

- First input: Number of robots (rows) and number of sensors (columns).
- Next, input elements for the **Morning Sensor Readings matrix**.
- Next, input elements for the **Evening Sensor Readings matrix**.

Constraints:

- $1 \leq \text{robots, sensors} \leq 10$
- $0 \leq \text{sensor reading} \leq 500$

Output Format:

- A matrix representing the total sensor readings for the day.

Sample Input:

```
3 3
100 200 150
90 120 180
80 140 160
110 210 160
95 130 175
85 145 165
```

(First row: Number of robots = 3, Number of sensors = 3)

(Next three rows: Morning Sensor Readings matrix)

(Next three rows: Evening Sensor Readings matrix)

Sample Output:

Total Sensor Readings Matrix:

210 410 310

185 250 355

165 285 325