

# DSA Battleground – Day 12

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## Question 23: Nested List + Nested Dictionary + Comprehension

💡 Problem Statement:

You're given a nested list of dictionaries, where each dictionary represents a student's performance in multiple subjects across multiple semesters. Write a code that calculates the total marks in all semesters only for those students who scored more than 80 in every subject of every semester.

✏️ Input:

```
students = [  
    {  
        'name': 'Amit',  
        'semesters': [  
            {'Math': 88, 'Science': 91, 'English': 85},  
            {'Math': 90, 'Science': 92, 'English': 84}  
        ]  
    },  
    {  
        'name': 'Pooja',  
        'semesters': [  
            {'Math': 79, 'Science': 95, 'English': 88},  
            {'Math': 82, 'Science': 81, 'English': 85}  
        ]  
    },  
    {  
        'name': 'Ravi',  
        'semesters': [  
            {'Math': 87, 'Science': 88, 'English': 89},  
            {'Math': 91, 'Science': 90, 'English': 93}  
        ]  
    }  
]
```

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Expected Output:

```
{'Amit': 530, 'Ravi': 539}
```

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## Question 24: Deep Nested List + Comprehension + Filtering by Condition

💡 Problem Statement:

You're given a nested list where each element represents a city. Each city contains areas, and each area has a list of temperature readings for the past 7 days. Find the city name(s) where all areas had an average temperature above 30°C over the week. Return a list of such city names using nested list and dictionary comprehension.

✎ Input:

```
cities = [
    {
        'name': 'Mumbai',
        'areas': {
            'Andheri': [32, 33, 31, 30, 29, 34, 35],
            'Bandra': [31, 32, 30, 30, 31, 33, 34],
        }
    },
    {
        'name': 'Delhi',
        'areas': {
            'Rohini': [28, 29, 27, 30, 31, 32, 29],
            'Saket': [33, 35, 36, 34, 33, 32, 31],
        }
    },
    {
        'name': 'Chennai',
        'areas': {
            'T Nagar': [34, 35, 36, 37, 34, 35, 33],
            'Velachery': [32, 31, 33, 34, 32, 30, 31]
        }
    }
]
```

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Expected Output:

```
['Chennai']
```

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