QUESTION 2 – Simple School Attendance Tracker

Your school wants to track the attendance of students for one week.

Task:

1. Create a **list of student names** (minimum 3 students).

2. Create a **2D list** to store attendance, where each inner list contains **5 boolean values** (true for present, false for absent) representing attendance for 5 days.

3. For each student:

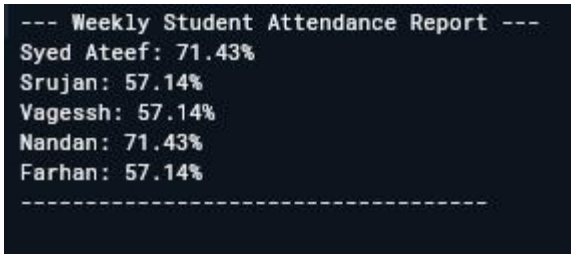
    - Count the number of days they were present.

    - Calculate their attendance percentage using the formula:

$$\text{Attendance } \% = \frac{\text{Number of Present Days}}{\text{Total Days}} \times 100$$

4. Display the student's name along with their attendance percentage, rounded to **two decimal places**.

```dart
import 'dart:core';

void main() {
  //
  final List<String> studentNames = [
    'Syed Ateef',
    'Srujan',
    'Vagessh',
    'Nandan',
    'Farhan',
  ];

  // 2. Create a 2D list to store attendance, where each inner list contains 5
  //    boolean values (true for present, false for absent) representing
  //    attendance for 5 days.
  //    The order of inner lists must correspond to the order of studentNames.
  final List<List<bool>> attendanceRecords = [
    // Alice Smith's attendance for 5 days (Mon-sat)
    [true, true, false, true, true,false,true], // Present: 4 days, Absent: 1 day
    // Bob Johnson's attendance
    [true, false, true, false, true,true,false], // Present: 3 days, Absent: 2 days
    // Charlie Brown's attendance
    [false, false, false, true, true,true,true], // Present: 2 days, Absent: 3 days
    // Diana Prince's attendance
    [true, true, true, true, true,false,false], // Present: 5 days, Absent: 0 days
    // Edward Teach's attendance
    [false, true, false, true, false,true,true], // Present: 2 days, Absent: 3 days
  ];

  const int totalDays = 7; // The fixed number of days for attendance tracking

  print('--- Weekly Student Attendance Report ---');

  // For each student:
  for (int i = 0; i < studentNames.length; i++) {
    final String studentName = studentNames[i];
    final List<bool> studentAttendance = attendanceRecords[i];

    // Count the number of days they were present.
    // We use .where to filter for 'true' values and .length to count them.
    final int presentDays =
        studentAttendance.where((isPresent) => isPresent).length;

    // Calculate their attendance percentage.
    // Ensure floating-point division by casting one operand to double.
    final double attendancePercentage = (presentDays / totalDays) * 100;

    // Display the student's name along with their attendance percentage,
    // rounded to two decimal places.
    // toStringAsFixed(2) formats the double to a string with exactly two decimal places.
    final String formattedPercentage = attendancePercentage.toStringAsFixed(2);

    print('$studentName: $formattedPercentage%');
  }

  print('-----------------------------------');
}
```



QUESTION 5 – Movie Ticket Booking Summary (12 marks)

A cinema hall wants to generate a booking summary for customers.

Task:

1. Create a **list of maps** where each map contains:
    - movieName (String)
    - ticketsBooked (int)
    - pricePerTicket (double)
2. For each booking:
    - Calculate the total cost = ticketsBooked × pricePerTicket
3. Display a booking summary showing:
    - Movie name
    - Number of tickets booked
    - Price per ticket

- Total cost for that booking

4. At the end, print the **grand total** earned from all bookings.

```dart
void main() {
  // 1. Create a list of maps to store movie ticket booking details.
  // Each map contains movieName, ticketsBooked, and pricePerTicket.
  final List<Map<String, dynamic>> bookings = [
    {
      'movieName': 'Kingdom',
      'ticketsBooked': 3,
      'pricePerTicket': 12.50,
    },
    {
      'movieName': 'Avengers',
      'ticketsBooked': 2,
      'pricePerTicket': 15.00,
    },
    {
      'movieName': 'Master',
      'ticketsBooked': 5,
      'pricePerTicket': 10.00,
    },
    {
      'movieName': 'The Null Safety Saga',
      'ticketsBooked': 1,
      'pricePerTicket': 18.00,
    },
  ];

  double grandTotal = 0.0;

  print('--- Movie Ticket Booking Summary ---');

  // Iterate through each booking to calculate and display details.
  for (final booking in bookings) {
    final String movieName = booking['movieName'] as String;
    final int ticketsBooked = booking['ticketsBooked'] as int;
    final double pricePerTicket = booking['pricePerTicket'] as double;

    // Calculate the total cost for the current booking.
    final double totalCost = ticketsBooked * pricePerTicket;

    // Add the current booking's total cost to the grand total.
    grandTotal += totalCost;

    // Display the booking summary for the current movie.
    print('\nMovie: $movieName');
    print('  Tickets Booked: $ticketsBooked');
    print('  Price Per Ticket: \$${pricePerTicket.toStringAsFixed(2)}');
    print('  Total Cost: \$${totalCost.toStringAsFixed(2)}');
  }

  print('\n-----------------------------------');
  // Display the grand total earned from all bookings.
  print('Grand Total from All Bookings: \$${grandTotal.toStringAsFixed(2)}');
  print('-----------------------------------');
}
```

```
--- Movie Ticket Booking Summary ---

Movie: Kingdom
  Tickets Booked: 3
  Price Per Ticket: $12.50
  Total Cost: $37.50

Movie: Avengers
  Tickets Booked: 2
  Price Per Ticket: $15.00
  Total Cost: $30.00

Movie: Master
  Tickets Booked: 5
  Price Per Ticket: $10.00
  Total Cost: $50.00

Movie: The Null Safety Saga
  Tickets Booked: 1
  Price Per Ticket: $18.00
  Total Cost: $18.00

-----------------------------------
Grand Total from All Bookings: $135.50
-----------------------------------
```