DSL ASSIGNMENT 1

Name:	**Janhavi.R.Patil**
PRN:	**B24CE1056**
DIVISION:	**SY.1**
BATCH:	**C**
BRANCH:	**Computer Engineering**

TITLE:

Part A:
Rainfall Tracking:
Write a program to track rainfall data for 3 cities over 4 months. Using a 2D array, we can store the data, calculate the average rainfall for each city, and display the rainfall data in a tabular format.
CODE:

```
#include <iostream>
using namespace std;

int main() {
   const int NUM_CITIES = 3;
   const int NUM_MONTHS = 4;
   float rainfall[NUM_CITIES][NUM_MONTHS];


   for(int city = 0; city < NUM_CITIES; city++) {
      cout << "Enter rainfall data for City " << city + 1 << ":\n";
      for(int month = 0; month < NUM_MONTHS; month++) {
         cout << "  Month " << month + 1 << ": ";
         cin >> rainfall[city][month];
      }
      cout << endl;
   }

    cout << "\nRainfall Data (in mm):\n";
   cout << "City\tMonth1\tMonth2\tMonth3\tMonth4\tAverage\n";
```

```
    for(int city = 0; city < NUM_CITIES; city++) {
        float sum = 0;
        cout << "City" << city + 1 << "\t";
        for(int month = 0; month < NUM_MONTHS; month++) {
            cout << rainfall[city][month] << "\t";
            sum += rainfall[city][month];
        }
        float average = sum / NUM_MONTHS;
        cout << average << endl;
    }

    return 0;
}
```

OUTPUT PART A:

```
Enter rainfall data for City 1:
  Month 1: 50
  Month 2: 60
  Month 3: 40
  Month 4: 65

Enter rainfall data for City 2:
  Month 1: 40
  Month 2: 45
  Month 3: 56
  Month 4: 66

Enter rainfall data for City 3:
  Month 1: 44
  Month 2: 40
  Month 3: 39
  Month 4: 60


Rainfall Data (in mm):
City    Month1  Month2  Month3  Month4  Average
City1   50      60      40      65      53.75
City2   40      45      56      66      51.75
City3   44      40      39      60      45.75
```

Part B:

Temperature Tracker:

Write a program for tracking daily temperatures of 3 cities for a week. The program calculates the average temperature for each day and for the week.

CODE:

```
#include <iostream>
using namespace std;

int main() {
   const int NUM_CITIES = 3;
   const int NUM_DAYS = 7;
   float temperature[NUM_CITIES][NUM_DAYS];


   for(int city = 0; city < NUM_CITIES; city++) {
      cout << "Enter temperatures for City " << city + 1 << ":\n";
      for(int day = 0; day < NUM_DAYS; day++) {
         cout << "  Day " << day + 1 << ": ";
         cin >> temperature[city][day];
      }
      cout << endl;
   }


   cout << "\nTemperature Data (C):\n";
   cout << "City\tDay1\tDay2\tDay3\tDay4\tDay5\tDay6\tDay7\tWeekly Avg\n";


   for(int city = 0; city < NUM_CITIES; city++) {
      float weeklySum = 0;
      cout << "City" << city + 1 << "\t";
      for(int day = 0; day < NUM_DAYS; day++) {
         cout << temperature[city][day] << "\t";
         weeklySum += temperature[city][day];
      }
      float weeklyAvg = weeklySum / NUM_DAYS;
      cout << weeklyAvg << endl;
   }


   cout << "\nAverage Temperature per Day Across All Cities:\n";
   for(int day = 0; day < NUM_DAYS; day++) {
      float daySum = 0;
```

```
        for(int city = 0; city < NUM_CITIES; city++) {
            daySum += temperature[city][day];
        }
        float dayAvg = daySum / NUM_CITIES;
        cout << "Day " << day + 1 << ": " << dayAvg << " C" << endl;
    }

    return 0;
}
```

OUTPUT:

```
Enter temperatures for City 1:
  Day 1: 30
  Day 2: 32
  Day 3: 28
  Day 4: 29
  Day 5: 27
  Day 6: 26
  Day 7: 25

Enter temperatures for City 2:
  Day 1: 25
  Day 2: 26
  Day 3: 27
  Day 4: 27
  Day 5: 29
  Day 6: 32
  Day 7: 30

Enter temperatures for City 3:
  Day 1: 28
  Day 2: 29
  Day 3: 20
  Day 4: 25
  Day 5: 24
  Day 6: 22
  Day 7: 21
```

Temperature Data (C):

City	Day1	Day2	Day3	Day4	Day5	Day6	Day7	Weekly Avg
City1	30	32	28	29	27	26	25	28.1429
City2	25	26	27	27	29	32	30	28
City3	28	29	20	25	24	22	21	24.1429

Average Temperature per Day Across All Cities:
Day 1: 27.6667 C
Day 2: 29 C
Day 3: 25 C
Day 4: 27 C
Day 5: 26.6667 C
Day 6: 26.6667 C
Day 7: 25.3333 C