

ASSIGNMENT - 01

Rainfall & Temperature Tracking

NAME: Munajja Mujafar Dalimbkar

CLASS: SY BTech II

PRN: B25CE2011

Problem Statement:

i) 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.

ii) Temperature Tracking: 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;

void displayTable(string cities[], double rainfallData[3][4]) {
    cout << "City\t\t Month 1\tMonth 2\tMonth 3\tMonth 4\tAverage" <<
endl;

    for (int i = 0; i < 3; i++) {
        double totalRainfall = 0;
        cout << cities[i] << "\t";
        for (int j = 0; j < 4; j++) {
            cout << rainfallData[i][j] << "\t\t";
            totalRainfall += rainfallData[i][j];
        }
        double averageRainfall = totalRainfall / 4;
        cout << averageRainfall << endl;
    }
}

int main() {

    string cities[3] = {"Pune", "Satara", "Sangli"};

    double rainfallData[3][4] = {
        {100, 120, 130, 110}, // City A
```

```

        {80, 95, 110, 100},    // City B
        {200, 220, 180, 210}  // City C
    };

    displayTable(cities, rainfallData);

    return 0;
}

```

Output:

City	Month 1	Month 2	Month 3	Month 4	Average
Pune	100	120	130	110	115
Satara	80	95	110	100	96.25
Sangli	200	220	180	120	200.5

Temperature Tracking:

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 DAYS = 7;      // Number of days in a week

    const int CITIES = 3;    // Number of cities

    double temperatures[CITIES][DAYS]; // Stores temperatures for
    each city and day

    for (int city = 0; city < CITIES; city++) {

        cout << "\nEnter temperatures for City " << city + 1 <<
        ":\n";

        for (int day = 0; day < DAYS; day++) {

            cout << "  Day " << day + 1 << ": ";

            cin >> temperatures[city][day];

        }

    }

    cout << "\n--- Daily Average Temperatures ---\n";

    double totalWeekly = 0;

    for (int day = 0; day < DAYS; day++) {

        double sum = 0;

        for (int city = 0; city < CITIES; city++) {

            sum += temperatures[city][day]; // Add each city's
            temperature

        }

    }

}
```

```

        double dailyAverage = sum / CITIES;
        totalWeekly += dailyAverage;
        cout << "Day " << day + 1 << " average: " << dailyAverage <<
        "°C\n";
    }

    double weeklyAverage = totalWeekly / DAYS;
    cout << "\nWeekly average temperature: " << weeklyAverage <<
    "°C\n";

    return 0;
}

```

OUTPUT:

Enter temperatures for City 1:

```

Day 1: 25
Day 2: 26
Day 3: 28
Day 4: 30
Day 5: 27
Day 6: 29
Day 7: 31

```

Enter temperatures for City 2:

```

Day 1: 24
Day 2: 27
Day 3: 29
Day 4: 28
Day 5: 26
Day 6: 30
Day 7: 29

```

Enter temperatures for City 3:

Day 1: 26

Day 2: 25

Day 3: 27

Day 4: 31

Day 5: 28

Day 6: 28

Day 7: 32

--- Daily Average Temperatures ---

Day 1 average: 25°C

Day 2 average: 26°C

Day 3 average: 28°C

Day 4 average: 29.6667°C

Day 5 average: 27°C

Day 6 average: 29°C

Day 7 average: 30.6667°C

Weekly average temperature: 28.8571°C