#include <iostream>

using namespace std;

void average(int arr[4][7], int arr1[4][4], int count) {

    int total;

    for (int i = 0; i < 4; i++) {

        total = 0;

        for (int j = 0; j < 7; j++) {

            total += arr[i][j];

        }

        total = total / 7;

        arr1[count][i] = total;

        cout << "Avg of that week " << count + 1 << " is " << total << endl;

    }

}

void critical\_polution\_day(int\* crit, int arr[4][7]) {

    for (int i = 0; i < 4; i++) {

        for (int j = 0; j < 7; j++) {

            if (arr[i][j] >= 150) {

                cout << "The city " << i + 1 << " had a critical pollution day on day " << j + 1 << endl;

            }

        }

    }

}

void lowest\_aqi(int city[4][7]) {

    int worst = city[0][0];

    int r = 1;

    for (int i = 0; i < 4; i++) {

        for (int j = 0; j < 7; j++) {

            if (worst > city[i][j]) {

                worst = city[i][j];

                r = i + 1;

            }

        }

    }

    cout << "City with worst air quality is " << r << endl;

}

void highest\_aqi(int city[4][7]) {

    int best = city[0][0];

    int r = 1;

    for (int i = 0; i < 4; i++) {

        for (int j = 0; j < 7; j++) {

            if (best < city[i][j]) {

                best = city[i][j];

                r = i + 1;

            }

        }

    }

    cout << "City with best air quality is " << r << " whose quality is " << best << endl;

}

void display(int city[4][7]) {

    for (int i = 0; i < 4; i++) {

        for (int j = 0; j < 7; j++) {

            cout << "For city " << i + 1 << " AQI is " << city[i][j] << endl;

        }

    }

}

void enter(int city[4][7]) {

    for (int i = 0; i < 4; i++) {

        for (int j = 0; j < 7; j++) {

            cout << "Enter AQI for city " << i + 1 << " day " << j + 1 << ": ";

            cin >> city[i][j];

        }

    }

}

void monthly\_avg(int avg[4][4]) {

    int total = 0;

    for (int i = 0; i < 4; i++) {

        for (int j = 0; j < 4; j++) {

            total += avg[i][j];

        }

    }

    cout << "Monthly avg is " << total / 16 << endl;

}

void display\_pattern(int city [4][7]){

        for (int i = 0; i < 4; i++) {

        for (int j = 0; j < 7; j++) {

            cout<< "for city"<<i+1<<" and day"<<j+1<<endl;

            if(city[i][j]>= 150){

                int n = city[i][j]/50;

                for (int k = 0 ; k<n ; k++){

                    cout << "\*";

                }

                cout<<endl;

            }

        }

    }

}

int main() {

    int city[4][7];

    int avg[4][4] = {0};

    cout << "Enter for week 1" << endl;

    enter(city);

    display(city);

    lowest\_aqi(city);

    highest\_aqi(city);

    critical\_polution\_day(nullptr, city);

    average(city, avg, 0);

    display\_pattern(city);

    cout << "Enter for week 2" << endl;

    enter(city);

    display(city);

    lowest\_aqi(city);

    highest\_aqi(city);

    critical\_polution\_day(nullptr, city);

    average(city, avg, 1);

    display\_pattern(city);

    cout << "Enter for week 3" << endl;

    enter(city);

    display(city);

    lowest\_aqi(city);

    highest\_aqi(city);

    critical\_polution\_day(nullptr, city);

    average(city, avg, 2);

    display\_pattern(city);

    cout << "Enter for week 4" << endl;

    enter(city);

    display(city);

    lowest\_aqi(city);

    highest\_aqi(city);

    critical\_polution\_day(nullptr, city);

    average(city, avg, 3);

    display\_pattern(city);

    monthly\_avg(avg);

    return 0;

}

Output:  
Microsoft Windows [Version 10.0.22631.4751]

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D:\2nd semester\OOP LAB class and hw task\class\_1>g++ hometask.cpp

D:\2nd semester\OOP LAB class and hw task\class\_1>g++ hometask.cpp -o hometask

D:\2nd semester\OOP LAB class and hw task\class\_1>hometask.exe

Enter for week 1

Enter AQI for city 1 day 1: 400

Enter AQI for city 1 day 2: 300

Enter AQI for city 1 day 3: 200

Enter AQI for city 1 day 4: 700

Enter AQI for city 1 day 5: 1

Enter AQI for city 1 day 6: 1

Enter AQI for city 1 day 7: 1

Enter AQI for city 2 day 1: 1

Enter AQI for city 2 day 2: 1

Enter AQI for city 2 day 3: 1

Enter AQI for city 2 day 4: 1

Enter AQI for city 2 day 5: 1

Enter AQI for city 2 day 6: 11

Enter AQI for city 2 day 7: 1

Enter AQI for city 3 day 1: 1

Enter AQI for city 3 day 2: 1

Enter AQI for city 3 day 3: 1

Enter AQI for city 3 day 4: 11

Enter AQI for city 3 day 5: 1

Enter AQI for city 3 day 6: 1

Enter AQI for city 3 day 7: 1

Enter AQI for city 4 day 1: 1

Enter AQI for city 4 day 2: 1

Enter AQI for city 4 day 3: 1

Enter AQI for city 4 day 4:

1

Enter AQI for city 4 day 5: 11

Enter AQI for city 4 day 6: 1

Enter AQI for city 4 day 7: 1

For city 1 AQI is 400

For city 1 AQI is 300

For city 1 AQI is 200

For city 1 AQI is 700

For city 1 AQI is 1

For city 1 AQI is 1

For city 1 AQI is 1

For city 2 AQI is 1

For city 2 AQI is 1

For city 2 AQI is 1

For city 2 AQI is 1

For city 2 AQI is 1

For city 2 AQI is 11

For city 2 AQI is 1

For city 3 AQI is 1

For city 3 AQI is 1

For city 3 AQI is 1

For city 3 AQI is 11

For city 3 AQI is 1

For city 3 AQI is 1

For city 3 AQI is 1

For city 4 AQI is 1

For city 4 AQI is 1

For city 4 AQI is 1

For city 4 AQI is 1

For city 4 AQI is 11

For city 4 AQI is 1

For city 4 AQI is 1

City with worst air quality is 1

City with best air quality is 1 whose quality is 700

The city 1 had a critical pollution day on day 1

The city 1 had a critical pollution day on day 2

The city 1 had a critical pollution day on day 3

The city 1 had a critical pollution day on day 4

Avg of that week 1 is 229

Avg of that week 1 is 2

Avg of that week 1 is 2

Avg of that week 1 is 2

for city1 and day1

\*\*\*\*\*\*\*\*

for city1 and day2

\*\*\*\*\*\*

for city1 and day3

\*\*\*\*

for city1 and day4

\*\*\*\*\*\*\*\*\*\*\*\*\*\*

for city1 and day5

for city1 and day6

for city1 and day7

for city2 and day1

for city2 and day2

for city2 and day3

for city2 and day4

for city2 and day5

for city2 and day6

for city2 and day7

for city3 and day1

for city3 and day2

for city3 and day3

for city3 and day4

for city3 and day5

for city3 and day6

for city3 and day7

for city4 and day1

for city4 and day2

for city4 and day3

for city4 and day4

for city4 and day5

for city4 and day6

for city4 and day7

Enter for week 2

Enter AQI for city 1 day 1: 1

Enter AQI for city 1 day 2: 1

Enter AQI for city 1 day 3: 1

Enter AQI for city 1 day 4: 1

Enter AQI for city 1 day 5: 1

Enter AQI for city 1 day 6: 1

Enter AQI for city 1 day 7: 1

Enter AQI for city 2 day 1: 1

Enter AQI for city 2 day 2: 1

Enter AQI for city 2 day 3: 1

Enter AQI for city 2 day 4: 1

Enter AQI for city 2 day 5: 1

Enter AQI for city 2 day 6: 11

Enter AQI for city 2 day 7:

1

Enter AQI for city 3 day 1: 1

Enter AQI for city 3 day 2: 1

Enter AQI for city 3 day 3: 1

Enter AQI for city 3 day 4: 1

Enter AQI for city 3 day 5: 1

Enter AQI for city 3 day 6: 1

Enter AQI for city 3 day 7: 1

Enter AQI for city 4 day 1: 1

Enter AQI for city 4 day 2: 1

Enter AQI for city 4 day 3: 1

Enter AQI for city 4 day 4: 1

Enter AQI for city 4 day 5: 1

Enter AQI for city 4 day 6: 1

Enter AQI for city 4 day 7: 1

For city 1 AQI is 1

For city 1 AQI is 1

For city 1 AQI is 1

For city 1 AQI is 1

For city 1 AQI is 1

For city 1 AQI is 1

For city 1 AQI is 1

For city 2 AQI is 1

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For city 2 AQI is 11

For city 2 AQI is 1

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For city 4 AQI is 1

For city 4 AQI is 1

For city 4 AQI is 1

For city 4 AQI is 1

For city 4 AQI is 1

City with worst air quality is 1

City with best air quality is 2 whose quality is 11

Avg of that week 2 is 1

Avg of that week 2 is 2

Avg of that week 2 is 1

Avg of that week 2 is 1

for city1 and day1

for city1 and day2

for city1 and day3

for city1 and day4

for city1 and day5

for city1 and day6

for city1 and day7

for city2 and day1

for city2 and day2

for city2 and day3

for city2 and day4

for city2 and day5

for city2 and day6

for city2 and day7

for city3 and day1

for city3 and day2

for city3 and day3

for city3 and day4

for city3 and day5

for city3 and day6

for city3 and day7

for city4 and day1

for city4 and day2

for city4 and day3

for city4 and day4

for city4 and day5

for city4 and day6

for city4 and day7

Enter for week 3

Enter AQI for city 1 day 1: 1

Enter AQI for city 1 day 2: 1

Enter AQI for city 1 day 3: 1

Enter AQI for city 1 day 4: 1

Enter AQI for city 1 day 5: 1

Enter AQI for city 1 day 6: 1

Enter AQI for city 1 day 7: 1

Enter AQI for city 2 day 1:

1

Enter AQI for city 2 day 2: 1

Enter AQI for city 2 day 3: 1

Enter AQI for city 2 day 4: 1

Enter AQI for city 2 day 5: 1

Enter AQI for city 2 day 6: 11

Enter AQI for city 2 day 7: 1

Enter AQI for city 3 day 1: 1

Enter AQI for city 3 day 2: 1

Enter AQI for city 3 day 3: 1

Enter AQI for city 3 day 4:

11

Enter AQI for city 3 day 5: 1

Enter AQI for city 3 day 6: 1

Enter AQI for city 3 day 7: 1

Enter AQI for city 4 day 1: 1

Enter AQI for city 4 day 2: 1

Enter AQI for city 4 day 3: 1

Enter AQI for city 4 day 4: 1

Enter AQI for city 4 day 5: 1

Enter AQI for city 4 day 6:

11

Enter AQI for city 4 day 7: 1

For city 1 AQI is 1

For city 1 AQI is 1

For city 1 AQI is 1

For city 1 AQI is 1

For city 1 AQI is 1

For city 1 AQI is 1

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For city 4 AQI is 1

For city 4 AQI is 1

For city 4 AQI is 1

For city 4 AQI is 1

For city 4 AQI is 1

For city 4 AQI is 11

For city 4 AQI is 1

City with worst air quality is 1

City with best air quality is 2 whose quality is 11

Avg of that week 3 is 1

Avg of that week 3 is 2

Avg of that week 3 is 2

Avg of that week 3 is 2

for city1 and day1

for city1 and day2

for city1 and day3

for city1 and day4

for city1 and day5

for city1 and day6

for city1 and day7

for city2 and day1

for city2 and day2

for city2 and day3

for city2 and day4

for city2 and day5

for city2 and day6

for city2 and day7

for city3 and day1

for city3 and day2

for city3 and day3

for city3 and day4

for city3 and day5

for city3 and day6

for city3 and day7

for city4 and day1

for city4 and day2

for city4 and day3

for city4 and day4

for city4 and day5

for city4 and day6

for city4 and day7

Enter for week 4

Enter AQI for city 1 day 1: 1

Enter AQI for city 1 day 2: 1

Enter AQI for city 1 day 3: 1

Enter AQI for city 1 day 4: 1

Enter AQI for city 1 day 5: 1

Enter AQI for city 1 day 6: 1

Enter AQI for city 1 day 7: 1

Enter AQI for city 2 day 1: 1

Enter AQI for city 2 day 2: 1

Enter AQI for city 2 day 3: 1

Enter AQI for city 2 day 4: 1

Enter AQI for city 2 day 5: 1

Enter AQI for city 2 day 6: 1

Enter AQI for city 2 day 7: 1

Enter AQI for city 3 day 1: 1

Enter AQI for city 3 day 2: 1

Enter AQI for city 3 day 3: 1

Enter AQI for city 3 day 4: 1

Enter AQI for city 3 day 5: 1

Enter AQI for city 3 day 6: 1

Enter AQI for city 3 day 7: 1

Enter AQI for city 4 day 1: 1

Enter AQI for city 4 day 2: 1

Enter AQI for city 4 day 3: 1

Enter AQI for city 4 day 4: 1

Enter AQI for city 4 day 5: 1

Enter AQI for city 4 day 6: 1

Enter AQI for city 4 day 7: 1

For city 1 AQI is 1

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For city 4 AQI is 1

For city 4 AQI is 1

For city 4 AQI is 1

For city 4 AQI is 1

For city 4 AQI is 1

City with worst air quality is 1

City with best air quality is 1 whose quality is 1

Avg of that week 4 is 1

Avg of that week 4 is 1

Avg of that week 4 is 1

Avg of that week 4 is 1

for city1 and day1

for city1 and day2

for city1 and day3

for city1 and day4

for city1 and day5

for city1 and day6

for city1 and day7

for city2 and day1

for city2 and day2

for city2 and day3

for city2 and day4

for city2 and day5

for city2 and day6

for city2 and day7

for city3 and day1

for city3 and day2

for city3 and day3

for city3 and day4

for city3 and day5

for city3 and day6

for city3 and day7

for city4 and day1

for city4 and day2

for city4 and day3

for city4 and day4

for city4 and day5

for city4 and day6

for city4 and day7

Monthly avg is 15

Class task

#include <iostream>

#include <string>

using namespace std;

void enter\_participent(string arr2[5], int x) {

    cout << "Enter participants' names:" << endl;

    for (int j = 0; j < x; j++) {

        cin >> arr2[j];

    }

}

void enter\_donation(int arr2[5], int x) {

    for (int j = 0; j < x; j++) {

        do {

            cout << "Enter donation amount for student " << j + 1 << " (minimum $10): ";

            cin >> arr2[j];

            if (arr2[j] < 10) {

                cout << "Cannot register for less than $10." << endl;

            }

        } while (arr2[j] < 10);

    }

}

void attendence\_checker(string name[5], string name1[5], int x, int y) {

    string r;

    cout << "Enter the name you want to check:" << endl;

    cin >> r;

    bool found = false;

    for (int j = 0; j < x; j++) {

        if (name[j] == r) {

            cout << r << " is present in Event 1." << endl;

            found = true;

            break;

        }

    }

    if (!found) cout << r << " is not present in Event 1." << endl;

    found = false;

    for (int j = 0; j < y; j++) {

        if (name1[j] == r) {

            cout << r << " is present in Event 2." << endl;

            found = true;

            break;

        }

    }

    if (!found) cout << r << " is not present in Event 2." << endl;

}

void total\_donation(int arr1[5], int arr2[5], int x, int y) {

    int total = 0;

    for (int i = 0; i < x; i++) {

        total += arr1[i];

    }

    for (int j = 0; j < y; j++) {

        total += arr2[j];

    }

    cout << "Total amount submitted by the two teams is: $" << total << endl;

}

void display(string arr1[5], string arr2[5], int x, int y) {

    cout << "Names of participants for Event 1 (in reverse order):" << endl;

    for (int j = x - 1; j >= 0; j--) {

        cout << arr1[j] << endl;

    }

    cout << "Names of participants for Event 2 (in reverse order):" << endl;

    for (int j = y - 1; j >= 0; j--) {

        cout << arr2[j] << endl;

    }

}

void display\_pattern(int x, int y) {

    cout << "Bar graph for Event 1 participants:" << endl;

    for (int j = 0; j < x; j++) {

        cout << "\*";

    }

    cout << endl;

    cout << "Bar graph for Event 2 participants:" << endl;

    for (int j = 0; j < y; j++) {

        cout << "\*";

    }

    cout << endl;

}

int main() {

    cout << "Enter details for Event 1:" << endl;

    int x = 0;

    do {

        cout << "Enter number of participants (max 5): ";

        cin >> x;

        if (x > 5) {

            cout << "Error: Too many participants. Enter again." << endl;

        }

    } while (x > 5);

    string name1[5];

    char attendence1[5];

    int donation1[5];

    enter\_participent(name1, x);

    enter\_donation(donation1, x);

    cout << "\nEnter details for Event 2:" << endl;

    int y = 0;

    do {

        cout << "Enter number of participants (max 5): ";

        cin >> y;

        if (y > 5) {

            cout << "Error: Too many participants. Enter again." << endl;

        }

    } while (y > 5);

    string name2[5];

    char attendence2[5];

    int donation2[5];

    enter\_participent(name2, y);

    enter\_donation(donation2, y);

    cout << "\n--- Event Information ---" << endl;

    display(name1, name2, x, y);

    display\_pattern(x, y);

    total\_donation(donation1, donation2, x, y);

    cout << "\n--- Attendance Checker ---" << endl;

    attendence\_checker(name1, name2, x, y);

    return 0;

}

