# TAKE HOME TASK

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**24k-0543**

#include <iostream>

#include <string>

using namespace std;

const int n\_cities = 4;

const int n\_days = 7;

void get\_aqi(int aqi[n\_cities][n\_days]) {

cout << "Enter AQI values for " << n\_cities << " cities over " << n\_days << " days:\n";

for (int i = 0; i < n\_cities; i++) {

cout << "City " << (i + 1) << ":\n";

for (int j = 0; j < n\_days; j++) {

cout << "Day " << (j + 1) << ": ";

cin >> aqi[i][j];

}

}

}

void avgaqi(int aqi[n\_cities][n\_days]) {

float avg[n\_cities] = {0};

int worst\_idx = 0;

for (int i = 0; i < n\_cities; i++) {

int total = 0;

for (int j = 0; j < n\_days; j++) {

total += aqi[i][j];

}

avg[i] = total / static\_cast<float>(n\_days);

cout << "Avg AQI for City " << (i + 1) << ": " << avg[i] << endl;

if (avg[i] > avg[worst\_idx]) {

worst\_idx = i;

}

}

cout << "City with worst air quality: City "

<< (worst\_idx + 1) << " with average AQI of "

<< avg[worst\_idx] << endl;

}

void crit\_days(int aqi[n\_cities][n\_days]) {

cout << "Critical Pollution Days (AQI > 150):\n";

for (int i = 0; i < n\_cities; i++) {

cout << "City " << (i + 1) << ": ";

bool has\_crit = false;

for (int j = 0; j < n\_days; j++) {

if (aqi[i][j] > 150) {

cout << "Day " << (j + 1) << " ";

has\_crit = true;

}

}

if (!has\_crit) {

cout << "None";

}

cout << endl;

}

}

void report(int aqi[n\_cities][n\_days]) {

cout << "\n\*\*\* AQI Report \*\*\*\n";

for (int i = 0; i < n\_cities; i++) {

float weekly\_avg = 0;

int max\_aqi = aqi[i][0];

int min\_aqi = aqi[i][0];

for (int j = 0; j < n\_days; j++) {

weekly\_avg += aqi[i][j];

if (aqi[i][j] > max\_aqi) max\_aqi = aqi[i][j];

if (aqi[i][j] < min\_aqi) min\_aqi = aqi[i][j];

}

weekly\_avg /= n\_days;

cout << "City " << (i + 1) << ":\n";

cout << " Weekly Avg AQI: " << weekly\_avg << endl;

cout << " Highest AQI: " << max\_aqi << endl;

cout << " Lowest AQI: " << min\_aqi << endl;

}

cout << "\n\*\*\* Critical Pollution Days Summary \*\*\*\n";

crit\_days(aqi);

}

void display\_data(int aqi[n\_cities][n\_days]) {

cout << "AQI Visualization:\n";

for (int i = 0; i < n\_cities; i++) {

cout << "City " << (i + 1) << ": ";

for (int j = 0; j < n\_days; j++) {

int star\_count = aqi[i][j] / 50;

for (int k = 0; k < star\_count; k++) {

cout << "#"; // Using '#' instead of '\*'

}

cout << " ";

}

cout << endl;

}

}

int main() {

int aqi[n\_cities][n\_days];

get\_aqi(aqi);

avgaqi(aqi);

crit\_days(aqi);

display\_data(aqi);

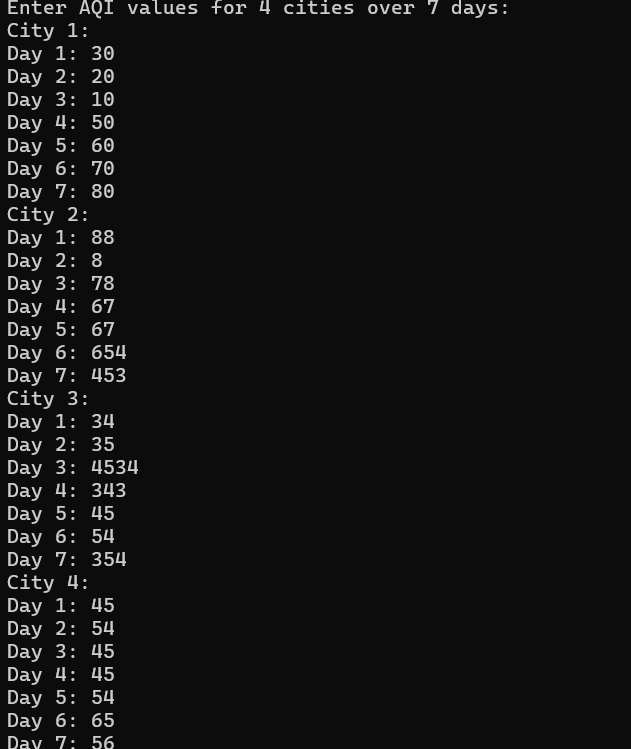
report(aqi);

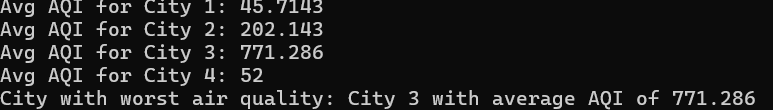
return 0;

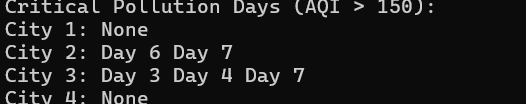
}

**OUTPUT**

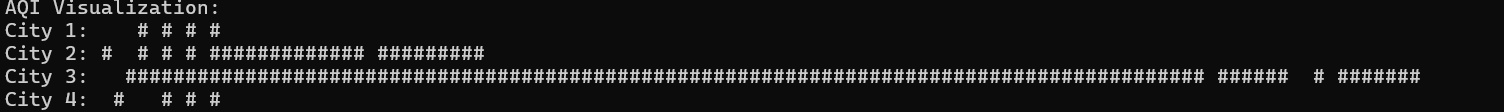
**TASK 1:**

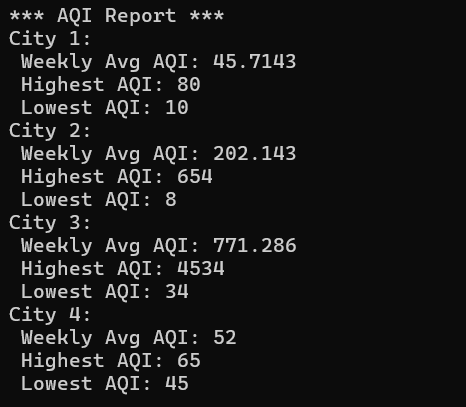




TASK 2:  


TASK 3;



TASK 4:  


TASK 5:  
