***OOP LAB 01 LAB TASKS***

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***Question 1to5:***

***CODE:***

***#include<iostream>***

***#include<string>***

***using namespace std;***

***void checkparticipant(string name1[],string name2[]){***

***string searchname;***

***cout<<"enter the name you want to search"<<endl;***

***cin>>searchname;***

***for(int i=0;i<5;i++){***

***if(name1[i]==searchname){***

***cout<<searchname<<"is registered for event1"<<endl;***

***}***

***else if (name2[i]==searchname){***

***cout<<searchname<<"is registered for event2"<<endl;***

***}***

***}***

***}***

***void displayrevname(string name1[],string name2[]){***

***cout<<"reversed names of participant for event 1 are:"<<endl;***

***for(int i=4;i>=0;i--){***

***cout<<name1[i]<<endl;***

***}***

***cout<<"reversed names of participants for event 2 are:"<<endl;***

***for(int i=4;i>=0;i--){***

***cout<<name2[i]<<endl;***

***}***

***}***

***void barchart( string name1[],int event1count, string name2[], int event2count) {***

***cout << "Event1 Population:" << endl;***

***for(int i=0;i<event1count;i++){***

***cout<<"\*";***

***}***

***cout<<endl;***

***cout << "Event2 Population:" << endl;***

***for(int i=0;i<event2count;i++){***

***cout<<"\*";***

***}***

***cout<<endl;***

***}***

***int main(){***

***string name1[5];***

***string name2[5];***

***cout<<"enter the names of people for event1"<<endl;***

***for(int i=0;i<5;i++){***

***cin>>name1[i];***

***}***

***cout<<"enter the names of people for event2"<<endl;***

***for(int i=0;i<5;i++){***

***cin>>name2[i];***

***}***

***checkparticipant(name1,name2);***

***int number,total;***

***cout<<"Enter the number of total participants for event1 and event2"<<endl;***

***cin>>number;***

***total=number\*10;***

***cout<<"The total donation calculated is "<<total<<endl;***

***displayrevname(name1,name2);***

***int event1count=5;***

***int event2count=5;***

***barchart(name1, event1count, name2, event2count);***

***}***

***OUTPUT:***

***enter the names of people for event1***

***yash***

***saad***

***akshay***

***sahil***

***sagar***

***enter the names of people for event2***

***sandesh***

***vivek***

***mubashir***

***jitesh***

***rehman***

***enter the name you want to search***

***rehman***

***rehmanis registered for event2***

***Enter the number of total participants for event1 and event2***

***10***

***The total donation calculated is 100***

***reversed names of participant for event 1 are:***

***sagar***

***sahil***

***akshay***

***saad***

***yash***

***reversed names of participants for event 2 are:***

***rehman***

***jitesh***

***mubashir***

***vivek***

***sandesh***

***Event1 Population:***

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

***Event2 Population:***

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

***OOP LAB 01 HOME TASKS***

***Question 1TO4:***

***CODE:***

***#include <iostream>***

***using namespace std;***

***void calculateAQI(int arr[][100], int cities, int days) {***

***float cityaverage[100];***

***float maxAQI = 0;***

***float worstcityquality = 0;***

***float improvedquality = 0;***

***const int weeks = 4;***

***cout << "Enter the AQI of cities: " << endl;***

***for (int i = 0; i < cities; i++) {***

***for (int j = 0; j < days; j++) {***

***cout << "Enter the AQI of " << i + 1 << " city and " << j + 1 << " day: ";***

***cin >> arr[i][j];***

***}***

***cout << "\n";***

***}***

***cout << "The AQI of cities with respect to the days are:" << endl;***

***for (int i = 0; i < cities; i++) {***

***float sum = 0;***

***for (int j = 0; j < days; j++) {***

***cout << arr[i][j] << "\t";***

***sum = sum + arr[i][j];***

***}***

***cityaverage[i] = sum / days;***

***cout << endl;***

***}***

***for (int i = 0; i < cities; i++) {***

***cout << "The average of " << i + 1 << " city is: " << cityaverage[i] << endl;***

***}***

***for (int i = 0; i < cities; i++) {***

***if (cityaverage[i] > maxAQI) {***

***maxAQI = cityaverage[i];***

***worstcityquality = i;***

***}***

***}***

***cout << "The city with the worst air quality is city " << worstcityquality + 1 << endl;***

***for (int i = 0; i < cities; i++) {***

***for (int j = 0; j < days; j++) {***

***if (arr[i][j] > 150) {***

***cout << days << "";***

***} else {***

***cout << "no critical days" << endl;***

***}***

***}***

***}***

***for (int i = 0; i < cities; i++) {***

***for (int j = 0; j < days; j++) {***

***int stars = arr[i][j] / 50;***

***for (int k = 0; k < stars; k++) {***

***cout << "\*";***

***}***

***cout << endl;***

***}***

***}***

***float monthlyAverages[100] = {0};***

***for (int i = 0; i < cities; i++) {***

***float sum = 0;***

***for (int j = 0; j < days; j++) {***

***sum += arr[i][j];***

***}***

***monthlyAverages[i] = sum / days;***

***}***

***cout << "Monthly Average AQI for each city:" << endl;***

***for (int i = 0; i < cities; i++) {***

***cout << "City " << i + 1 << ": " << monthlyAverages[i] << endl;***

***}***

***for (int i = 0; i < cities; i++) {***

***if (cityaverage[i] < maxAQI) {***

***maxAQI = cityaverage[i];***

***improvedquality = i;***

***}***

***}***

***cout << "The city with improved air quality is city " << improvedquality + 1 << endl;***

***}***

***int main() {***

***int arr[100][100];***

***int cities, days;***

***cout << "Enter the number of cities: ";***

***cin >> cities;***

***cout << "Enter the number of days: ";***

***cin >> days;***

***calculateAQI(arr, cities, days);***

***return 0;***

***}***

***OUTPUT:***

***Enter the number of cities: 4***

***Enter the number of days: 7***

***Enter the AQI of cities:***

***Enter the AQI of 1 city and 1 day: 50***

***Enter the AQI of 1 city and 2 day: 75***

***Enter the AQI of 1 city and 3 day: 100***

***Enter the AQI of 1 city and 4 day: 125***

***Enter the AQI of 1 city and 5 day: 150***

***Enter the AQI of 1 city and 6 day: 175***

***Enter the AQI of 1 city and 7 day: 200***

***Enter the AQI of 2 city and 1 day: 25***

***Enter the AQI of 2 city and 2 day: 50***

***Enter the AQI of 2 city and 3 day: 75***

***Enter the AQI of 2 city and 4 day: 100***

***Enter the AQI of 2 city and 5 day: 125***

***Enter the AQI of 2 city and 6 day: 150***

***Enter the AQI of 2 city and 7 day: 175***

***Enter the AQI of 3 city and 1 day: 100***

***Enter the AQI of 3 city and 2 day: 75***

***Enter the AQI of 3 city and 3 day: 50***

***Enter the AQI of 3 city and 4 day: 25***

***Enter the AQI of 3 city and 5 day: 50***

***Enter the AQI of 3 city and 6 day: 75***

***Enter the AQI of 3 city and 7 day: 100***

***Enter the AQI of 4 city and 1 day: 150***

***Enter the AQI of 4 city and 2 day: 125***

***Enter the AQI of 4 city and 3 day: 100***

***Enter the AQI of 4 city and 4 day: 75***

***Enter the AQI of 4 city and 5 day: 50***

***Enter the AQI of 4 city and 6 day: 25***

***Enter the AQI of 4 city and 7 day: 50***

***The AQI of cities with respect to the days are:***

***50 75 100 125 150 175 200***

***25 50 75 100 125 150 175***

***100 75 50 25 50 75 100***

***150 125 100 75 50 25 50***

***The average of 1 city is: 125***

***The average of 2 city is: 100***

***The average of 3 city is: 67.8571***

***The average of 4 city is: 82.1429***

***The city with the worst air quality is city 1***

***no critical days***

***no critical days***

***no critical days***

***no critical days***

***no critical days***

***77no critical days***

***no critical days***

***no critical days***

***no critical days***

***no critical days***

***no critical days***

***7no critical days***

***no critical days***

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***Monthly Average AQI for each city:***

***City 1: 125***

***City 2: 100***

***City 3: 67.8571***

***City 4: 82.1429***

***The city with improved air quality is city 3***

***TASK 05***

***REPORT:***

***Weekly Averages for Each City:***

***City 1: 125.00***

***City 2: 100.00***

***City 3: 67.86***

***City 4: 82.14***

***Critical Pollution Days for Each City (AQI > 150):***

***City 1: Day 6 Day 7***

***City 2: Day 7***

***City 3: No critical days.***

***City 4: No critical days.***

***Comparison of Highest and Lowest AQI Values:***

***Highest AQI recorded: 200***

***Lowest AQI recorded: 25***

***City with the worst air quality (highest average AQI): City 1***

***City with the best air quality (lowest average AQI): City 3***