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Assignment : Weather Report

Name : Gaurav Ghati

class : SE 10

Batch : F 10

Problem Statement : Create a class named WeatherReport that holds a dialy weather report with data members day\_of\_month, highTemp, lowTemp, amountRain, amountSnowfall. Use different types of constructors to initialize the object. Also include a function that prompts the user and sets values for each field so that you can overide the default values. Write a menu driven program in c++ with option to enter data and generate monthly report that displays average of each attribute (The constructor initialize the fields with default values : 99 for day\_of\_month, 999 for highTemp, -999 for lowTemp, and 0 for amountRain and amountSnowfall)

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#include<iostream>

#include <iomanip>

using namespace std;

int i=0;

class WeatherReport {

int dayOfMonth;

int highTemp;

int lowTemp;

int amountRain;

int amountSnowfall;

public:

static double sum[4];

int n = 0;

WeatherReport(){

dayOfMonth = 99;

highTemp = 999;

lowTemp = -999;

amountRain = 0;

amountSnowfall = 0;

}

WeatherReport(int dom, int ht, int lt){

dayOfMonth = dom;

highTemp = ht;

lowTemp = lt;

}

WeatherReport(int dom, int ht, int lt, int ar, int as){

dayOfMonth = dom;

highTemp = ht;

lowTemp = lt;

amountRain = ar;

amountSnowfall = as;

}

void update();

void report();

void displayRow(int);

static void avg();

};

double WeatherReport :: sum[4];

void WeatherReport :: displayRow(int i){

cout<<setw(3)<<i+1<<setw(20)<<dayOfMonth<<setw(20)<<highTemp<<setw(20)<<lowTemp<<setw(20)<<amountRain<<setw(20)<<amountSnowfall<<"\n";

}

void WeatherReport :: update(){

cout<<"Enter Day of Month : ";

cin>>dayOfMonth;

cout<<"High Temperature : ";

cin>>highTemp;

cout<<"Low Temperature : ";

cin>>lowTemp;

cout<<"Amount Rain : ";

cin>>amountRain;

cout<<"Amount SnowFall : ";

cin>>amountSnowfall;

}

void WeatherReport :: report(){

sum[0] += highTemp;

sum[1] += lowTemp;

sum[2] += amountRain;

sum[3] += amountSnowfall;

}

void WeatherReport :: avg(){

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

sum[i] = sum[i]/30;

}

cout<<setw(7)<<"Average"<<setw(36)<<sum[0]<<setw(20)<<sum[1]<<setw(20)<<sum[2]<<setw(20)<<sum[3]<<"\n";

cout<<"----------------------------------------------------------------------------------------------------------------\n";

}

void printMenu(){

cout<<"1. Update values "<<"\n";

cout<<"2. Exit"<<"\n";

}

void displayReport(WeatherReport mon[30]){

cout<<setw(60)<<"Monthly Report \n";

cout<<"---------------------------------------------------------------------------------------------------------------\n";

cout<<setw(7)<<"S.No. "<<setw(20)<<" dayOfMonth "<<setw(20)<<" highTemp "<<setw(20)<<" lowTemp "<<setw(20)<<" amountRain "<<setw(20)<<" amountSnowfall\n";

cout<<"---------------------------------------------------------------------------------------------------------------\n";

for(int i=0; i<30; i++){

mon[i].displayRow(i);

mon[i].report();

}

cout<<"----------------------------------------------------------------------------------------------------------------\n";

mon[29].avg();

}

int main(){

WeatherReport month[30];

int choice, day;

displayReport(month);

int entry = 1;

while(entry==1){

printMenu();

cout<<"Enter Choice : "<<"\n";

cin>>choice;

switch(choice){

case 1 : cout<<"Enter updating day : \n";

cin>>day;

month[day-1].update();

displayReport(month);

break;

case 2: entry = 0;

}

}

return 0;

}

Monthly Report

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S.No. dayOfMonth highTemp lowTemp amountRain amountSnowfall

---------------------------------------------------------------------------------------------------------------

1 99 999 -999 0 0

2 99 999 -999 0 0

3 99 999 -999 0 0

4 99 999 -999 0 0

5 99 999 -999 0 0

6 99 999 -999 0 0

7 99 999 -999 0 0

8 99 999 -999 0 0

9 99 999 -999 0 0

10 99 999 -999 0 0

11 99 999 -999 0 0

12 99 999 -999 0 0

13 99 999 -999 0 0

14 99 999 -999 0 0

15 99 999 -999 0 0

16 99 999 -999 0 0

17 99 999 -999 0 0

18 99 999 -999 0 0

19 99 999 -999 0 0

20 99 999 -999 0 0

21 99 999 -999 0 0

22 99 999 -999 0 0

23 99 999 -999 0 0

24 99 999 -999 0 0

25 99 999 -999 0 0

26 99 999 -999 0 0

27 99 999 -999 0 0

28 99 999 -999 0 0

29 99 999 -999 0 0

30 99 999 -999 0 0

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Average 999 -999 0 0

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1. Update values

2. Exit

Enter Choice : 1

Enter updating day : 5

Enter Day of Month : 10

High Temperature : 456

Low Temperature : -654

Amount Rain : 23

Amount SnowFall : 67

Monthly Report

---------------------------------------------------------------------------------------------------------------

S.No. dayOfMonth highTemp lowTemp amountRain amountSnowfall

---------------------------------------------------------------------------------------------------------------

1 99 999 -999 0 0

2 99 999 -999 0 0

3 99 999 -999 0 0

4 99 999 -999 0 0

5 10 456 -654 23 67

6 99 999 -999 0 0

7 99 999 -999 0 0

8 99 999 -999 0 0

9 99 999 -999 0 0

10 99 999 -999 0 0

11 99 999 -999 0 0

12 99 999 -999 0 0

13 99 999 -999 0 0

14 99 999 -999 0 0

15 99 999 -999 0 0

16 99 999 -999 0 0

17 99 999 -999 0 0

18 99 999 -999 0 0

19 99 999 -999 0 0

20 99 999 -999 0 0

21 99 999 -999 0 0

22 99 999 -999 0 0

23 99 999 -999 0 0

24 99 999 -999 0 0

25 99 999 -999 0 0

26 99 999 -999 0 0

27 99 999 -999 0 0

28 99 999 -999 0 0

29 99 999 -999 0 0

30 99 999 -999 0 0

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Average 980.9 -987.5 0.766667 2.23333

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1. Update values

2. Exit

Enter Choice : 1

Enter updating day : 10

Enter Day of Month : 15

High Temperature : 678

Low Temperature : -543

Amount Rain : 23

Amount SnowFall : 78

Monthly Report

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S.No. dayOfMonth highTemp lowTemp amountRain amountSnowfall

---------------------------------------------------------------------------------------------------------------

1 99 999 -999 0 0

2 99 999 -999 0 0

3 99 999 -999 0 0

4 99 999 -999 0 0

5 10 456 -654 23 67

6 99 999 -999 0 0

7 99 999 -999 0 0

8 99 999 -999 0 0

9 99 999 -999 0 0

10 15 678 -543 23 78

11 99 999 -999 0 0

12 99 999 -999 0 0

13 99 999 -999 0 0

14 99 999 -999 0 0

15 99 999 -999 0 0

16 99 999 -999 0 0

17 99 999 -999 0 0

18 99 999 -999 0 0

19 99 999 -999 0 0

20 99 999 -999 0 0

21 99 999 -999 0 0

22 99 999 -999 0 0

23 99 999 -999 0 0

24 99 999 -999 0 0

25 99 999 -999 0 0

26 99 999 -999 0 0

27 99 999 -999 0 0

28 99 999 -999 0 0

29 99 999 -999 0 0

30 99 999 -999 0 0

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Average 970.2 -972.3 1.53333 4.83333

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1. Update values

2. Exit

Enter Choice : 1

Enter updating day : 15

Enter Day of Month : 20

High Temperature : 987

Low Temperature : -789

Amount Rain : 12

Amount SnowFall : 09

Monthly Report

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S.No. dayOfMonth highTemp lowTemp amountRain amountSnowfall

---------------------------------------------------------------------------------------------------------------

1 99 999 -999 0 0

2 99 999 -999 0 0

3 99 999 -999 0 0

4 99 999 -999 0 0

5 10 456 -654 23 67

6 99 999 -999 0 0

7 99 999 -999 0 0

8 99 999 -999 0 0

9 99 999 -999 0 0

10 15 678 -543 23 78

11 99 999 -999 0 0

12 99 999 -999 0 0

13 99 999 -999 0 0

14 99 999 -999 0 0

15 20 987 -789 12 9

16 99 999 -999 0 0

17 99 999 -999 0 0

18 99 999 -999 0 0

19 99 999 -999 0 0

20 99 999 -999 0 0

21 99 999 -999 0 0

22 99 999 -999 0 0

23 99 999 -999 0 0

24 99 999 -999 0 0

25 99 999 -999 0 0

26 99 999 -999 0 0

27 99 999 -999 0 0

28 99 999 -999 0 0

29 99 999 -999 0 0

30 99 999 -999 0 0

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Average 969.8 -965.3 1.93333 5.13333

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1. Update values

2. Exit

Enter Choice : 1

Enter updating day : 20

Enter Day of Month : 25

High Temperature : 678

Low Temperature : -876

Amount Rain : 34

Amount SnowFall : 56

Monthly Report

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S.No. dayOfMonth highTemp lowTemp amountRain amountSnowfall

---------------------------------------------------------------------------------------------------------------

1 99 999 -999 0 0

2 99 999 -999 0 0

3 99 999 -999 0 0

4 99 999 -999 0 0

5 10 456 -654 23 67

6 99 999 -999 0 0

7 99 999 -999 0 0

8 99 999 -999 0 0

9 99 999 -999 0 0

10 15 678 -543 23 78

11 99 999 -999 0 0

12 99 999 -999 0 0

13 99 999 -999 0 0

14 99 999 -999 0 0

15 20 987 -789 12 9

16 99 999 -999 0 0

17 99 999 -999 0 0

18 99 999 -999 0 0

19 99 999 -999 0 0

20 25 678 -876 34 56

21 99 999 -999 0 0

22 99 999 -999 0 0

23 99 999 -999 0 0

24 99 999 -999 0 0

25 99 999 -999 0 0

26 99 999 -999 0 0

27 99 999 -999 0 0

28 99 999 -999 0 0

29 99 999 -999 0 0

30 99 999 -999 0 0

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Average 959.1 -961.2 3.06667 7

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1. Update values

2. Exit

Enter Choice :1

Enter updating day :25

Enter Day of Month : 30

High Temperature : 567

Low Temperature : -534

Amount Rain : 45

Amount SnowFall : 67

Monthly Report

---------------------------------------------------------------------------------------------------------------

S.No. dayOfMonth highTemp lowTemp amountRain amountSnowfall

---------------------------------------------------------------------------------------------------------------

1 99 999 -999 0 0

2 99 999 -999 0 0

3 99 999 -999 0 0

4 99 999 -999 0 0

5 10 456 -654 23 67

6 99 999 -999 0 0

7 99 999 -999 0 0

8 99 999 -999 0 0

9 99 999 -999 0 0

10 15 678 -543 23 78

11 99 999 -999 0 0

12 99 999 -999 0 0

13 99 999 -999 0 0

14 99 999 -999 0 0

15 20 987 -789 12 9

16 99 999 -999 0 0

17 99 999 -999 0 0

18 99 999 -999 0 0

19 99 999 -999 0 0

20 25 678 -876 34 56

21 99 999 -999 0 0

22 99 999 -999 0 0

23 99 999 -999 0 0

24 99 999 -999 0 0

25 30 567 -534 45 67

26 99 999 -999 0 0

27 99 999 -999 0 0

28 99 999 -999 0 0

29 99 999 -999 0 0

30 99 999 -999 0 0

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Average 944.7 -945.7 4.56667 9.23333

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1. Update values

2. Exit

Enter Choice :1

Enter updating day :30

Enter Day of Month : 23

High Temperature : 678

Low Temperature : -654

Amount Rain : 34

Amount SnowFall : 67

Monthly Report

---------------------------------------------------------------------------------------------------------------

S.No. dayOfMonth highTemp lowTemp amountRain amountSnowfall

---------------------------------------------------------------------------------------------------------------

1 99 999 -999 0 0

2 99 999 -999 0 0

3 99 999 -999 0 0

4 99 999 -999 0 0

5 10 456 -654 23 67

6 99 999 -999 0 0

7 99 999 -999 0 0

8 99 999 -999 0 0

9 99 999 -999 0 0

10 15 678 -543 23 78

11 99 999 -999 0 0

12 99 999 -999 0 0

13 99 999 -999 0 0

14 99 999 -999 0 0

15 20 987 -789 12 9

16 99 999 -999 0 0

17 99 999 -999 0 0

18 99 999 -999 0 0

19 99 999 -999 0 0

20 25 678 -876 34 56

21 99 999 -999 0 0

22 99 999 -999 0 0

23 99 999 -999 0 0

24 99 999 -999 0 0

25 30 567 -534 45 67

26 99 999 -999 0 0

27 99 999 -999 0 0

28 99 999 -999 0 0

29 99 999 -999 0 0

30 23 678 -654 34 67

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Average 934 -934.2 5.7 11.4667

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1. Update values

2. Exit

Enter Choice : 2