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Assignment : Weather Report

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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];

static int n;

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();

};

int WeatherReport :: n = 0;

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(){

n++;

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;

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

}

void WeatherReport :: avg(){

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

sum[i] = sum[i]/n;

}

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);

}

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

}

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();

month[day-1].report();

displayReport(month);

month[29].avg();

break;

case 2: entry = 0;

}

}

return 0;

}

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 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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1. Update values

2. Exit

Enter Choice :

1

Enter updating day :

5

Enter Day of Month : 10

High Temperature : 56

Low Temperature : -34

Amount Rain : 69

Amount SnowFall : 22

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 56 -34 69 22

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 56 -34 69 22

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1. Update values

2. Exit

Enter Choice :

1

Enter updating day :

10

Enter Day of Month : 12

High Temperature : 18

Low Temperature : -50

Amount Rain : 23

Amount SnowFall : 68

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 56 -34 69 22

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 12 18 -50 23 68

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 37 -42 46 45

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1. Update values

2. Exit

Enter Choice :

1

Enter updating day :

15

Enter Day of Month : 34

High Temperature : 45

Low Temperature : -65

Amount Rain : 23

Amount SnowFall : 89

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 56 -34 69 22

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 12 18 -50 23 68

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 34 45 -65 23 89

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 39.6667 -49.6667 38.33 59.6667

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1. Update values

2. Exit

Enter Choice :

1

Enter updating day :

20

Enter Day of Month : 15

High Temperature : 56

Low Temperature : -38

Amount Rain : 65

Amount SnowFall : 23

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 56 -34 69 22

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 12 18 -50 23 68

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 34 45 -65 23 89

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 15 56 -38 65 23

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 44.8333 -49.4167 47.3454 16.9167

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1. Update values

2. Exit

Enter Choice :

1

Enter updating day :

25

Enter Day of Month : 18

High Temperature : 34

Low Temperature : -54

Amount Rain : 12

Amount SnowFall : 38

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 56 -34 69 22

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 12 18 -50 23 68

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 34 45 -65 23 89

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 15 56 -38 65 23

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 18 34 -54 12 38

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 47.9667 -52.4833 45.8 54.9833

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1. Update values

2. Exit

Enter Choice :

1

Enter updating day :

30

Enter Day of Month : 22

High Temperature : 40

Low Temperature : -42

Amount Rain : 67

Amount SnowFall : 54

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 56 -34 69 22

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 12 18 -50 23 68

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 34 45 -65 23 89

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 15 56 -38 65 23

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 18 34 -54 12 38

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 22 40 -42 67 54

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Average 49.9667 -51.4833 45.8 56.9833

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1. Update values

2. Exit

Enter Choice :

2