CSE1002 LAB FAT

20BDS0405 (Bimal parajuli)

Set 2.

C++ Vectors of Objects.

Algorithm to approach the given problem:

Start

Define DailyTemp class:

Initiate a variable temp to store temperature 0 using default constructor.

Make a member function to getTemp and SetTemp

Overload operators == and < to check greater among multiple temperatures.

Main:

Make a vector of objects of DailyTemp Class.

Enter 7 temperatures one for each day

If necessary, compare and store the highest temperature in the vectors by calling pushback ()

Display all Fahrenheit temperatures in a line.

Convert and display all Celsius temperatures in a line**.**

End

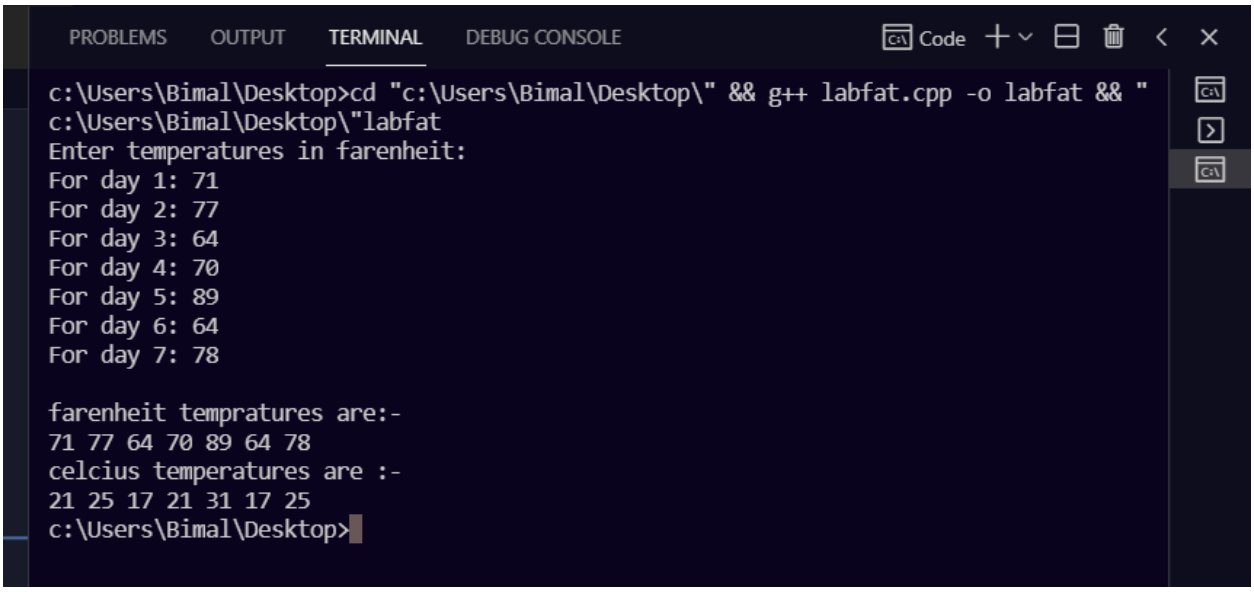
Code written in ‘Visual Studio Code’:

C: > Users > Bimal > Desktop > labfat.cpp > main()

```cpp
#include <iostream>
#include <vector>
using namespace std; // program initiation with vector libraries.

class DailyTemp //class whose objects(instances) store daily temperatures
{
    int temp;

public:
    DailyTemp()     //default constructor.
    {
        temp = 0;   //initialize with temperature 0.
    }
    DailyTemp(int x)
    {
        temp = x;
    }
    double get_temp()
    {
        return temp;
    }
};

//Operators== and < overload
bool operator<(DailyTemp a, DailyTemp b)
// overload operator "<" to check if Temp A is less than Temp B
{
    return a.get_temp() < b.get_temp();
}

bool operator==(DailyTemp a, DailyTemp b)
// overload operator "==" to check if Temp A is equal to Temp B
{
    return a.get_temp() == b.get_temp();
}


//Program starts here
int main()
{
    vector<DailyTemp> v;
    //created vector of DailyTemp objects

    int i, j, temp1;
    cout << "Enter temperatures in farenheit: \n";
    for (i = 0; i < 7; i++)
    {
        cout << "For day " << i + 1 << ": ";
        cin >> temp1;
        v.push_back(DailyTemp(temp1));
        // putting temperature into the each objects of the vector.
    }
    cout << "\nfarenheit tempratures are:- " << endl;

    for (i = 0; i < v.size(); i++)
    {
        cout << v[i].get_temp() << " ";
        //displaying all daily temperatures.
    }
    for (i = 0; i < v.size(); i++)
    {
        v[i] = (int)(v[i].get_temp() - 32) * 5 / 9;
    }

    cout << "\ncelcius temperatures are :-\n";
    for (i = 0; i < v.size(); i++)
        cout << v[i].get_temp() << " ";
    return 0;
}
```

0

Given Test Case passed:



Other multiple test cases tried and passed:

```
c:\Users\Bimal\Desktop>cd "c:\Users\Bimal\Desktop\" && g++ labfat.cpp -o labfat && "c:\Users\Bimal\Desktop\"labfat
Enter temperatures in farenheit:
For day 1: 76
For day 2: 678
For day 3: 56
For day 4: 78
For day 5: 76
For day 6: 68
For day 7: 7

farenheit tempratures are:-
76 678 56 78 76 68 7
celcius temperatures are :-
24 358 13 25 24 20 -13
c:\Users\Bimal\Desktop>cd "c:\Users\Bimal\Desktop\" && g++ labfat.cpp -o labfat && "c:\Users\Bimal\Desktop\"labfat
Enter temperatures in farenheit:
For day 1: 71
For day 2: 77
For day 3: 64
For day 4: 70
For day 5: 89
For day 6: 64
For day 7: 78

farenheit tempratures are:-
71 77 64 70 89 64 78
celcius temperatures are :-
21 25 17 21 31 17 25
c:\Users\Bimal\Desktop>cd "c:\Users\Bimal\Desktop\" && g++ labfat.cpp -o labfat && "c:\Users\Bimal\Desktop\"labfat
Enter temperatures in farenheit:
For day 1: 67
For day 2: 54
For day 3: 76
For day 4: 98
For day 5: 56
For day 6: 78
For day 7: 56

farenheit tempratures are:-
67 54 76 98 56 78 56
celcius temperatures are :-
19 12 24 36 13 25 13
```

End.