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Problem Submissions Leaderboard Discussions

Design a class named Box whose dimensions are integers and private to the class. The dimensions are labelled: length *l*, breadth *b*, and height *h*.

The default constructor of the class should initialize l, b, and h to 0.

The parameterized constructor $Box(int\ length,\ int\ breadth,\ int\ height)$ should initialize Box's l,b and h to length, breadth and height.

The copy constructor Box(Box B) should set l, b and h to B's l, b and h, respectively.

Apart from the above, the class should have 4 functions:

- int getLength() Return box's length
- int getBreadth() Return box's breadth
- int getHeight() Return box's height
- long long CalculateVolume() Return the volume of the box

Overload the operator < for the class Box. Box A < Box B if:

- 1. A.l < B.l
- 2. A.b < B.b and A.l = = B.l
- 3. A.h < B.h and A.b = = B.b and A.l = = B.l

Overload operator << for the class Box().

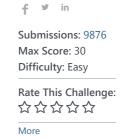
If \boldsymbol{B} is an object of class Box:

cout << B should print $B.\,l_{\scriptscriptstyle I}\,B.\,b$ and $B.\,h$ on a single line separated by spaces.

Constraints

$0 \leq l, b, h \leq 10^5$

Two boxes being compared using the < operator will not have all three dimensions equal.



```
Current Buffer (saved locally, editable) 

↑ #include<←→
2
3 using namespace std;

6
7 //Implement the class Box
```

```
//l,b,h are integers representing the dimensions of the box
 8
    // The class should have the following functions :
10
11
    // Constructors:
12
13
    // Box();
    // Box(int,int,int);
14
15
    // Box(Box);
16
17
18
    // int getLength(); // Return box's length
    // int getBreadth (); // Return box's breadth
19
    // int getHeight (); //Return box's height
21
    // long long CalculateVolume(); // Return the volume of the box
22
23
    //Overload operator < as specified
24
    //bool operator<(Box& b)</pre>
25
26
    //Overload operator << as specified
27
    //ostream& operator<<(ostream& out, Box& B)</pre>
28
30 ▼ class Box {
31
32
      private:
33
            int 1,b,h;
34
      public:
35
        Box(){
          1=0;
36
37
          b=0;
38
          h=0;
39
        }
40
41 1
        Box(int length, int breadth, int height){
42
            1 = length;
43
            b = breadth;
44
            h = height;
45
        }
46
        int getLength();// - Return box's length
47
48
        int getBreadth();// - Return box's breadth
49
        int getHeight();// - Return box's height
50
        long long CalculateVolume();// - Return the volume of the box
51
52
53 ₹
        friend bool operator < ( Box&A,Box& B){
54 ▼
            if( (A.1 < B.1) \mid | ((A.b < B.b) && (A.1 == B.1)) \mid | ((A.h < B.h) && (A.1 == B.1) && (A.b == B.b)) )
55
                 return true;
56 ▼
            }else{
57
                 return false;
58
            }
59
        };
60
61 ▼
        friend ostream& operator<< (ostream& output, const Box& B){
            output << B.1 << " " << B.b << " " << B.h;
62
63
            return output;
64
65
66
    };
67
68 v int Box::getLength() {
69
       return 1;
70 }
71 ▼ int Box::getBreadth() {
72
       return b;
73
    }
74 ▼ int Box::getHeight() {
75
       return h;
76 }
77 ▼ long long Box::CalculateVolume() {
78
        return (long long)1 * b * h;
79
80
81
82
83
84
```

```
86
87
     void check2()
88 ₹ {
 89
          int n;
 90
          cin>>n;
 91
          Box temp;
          for(int i=0;i<n;i++)</pre>
 92
 93 ▼
              int type;
 94
 95
              cin>>type;
 96
              if(type ==1)
 97 ▼
 98
                   cout<<temp<<endl;</pre>
 99
100
              if(type == 2)
101 ▼
              {
102
                   int 1,b,h;
103
                   cin>>l>>b>>h;
104
                   Box NewBox(1,b,h);
105
                   temp=NewBox;
                   cout<<temp<<endl;</pre>
106
107
              if(type==3)
108
109 ▼
              {
                   int 1,b,h;
110
111
                   cin>>l>>b>>h;
112
                   Box NewBox(1,b,h);
                   if(NewBox<temp)</pre>
113
114
                   {
115
                        cout<<"Lesser\n";</pre>
116
                   }
117
                   else
118 🔻
                   {
                        cout<<"Greater\n";</pre>
119
120
                   }
121
              if(type==4)
122
123 ▼
                   cout<<temp.CalculateVolume()<<endl;</pre>
124
125
126
              if(type==5)
127 ▼
              {
128
                   Box NewBox(temp);
129
                   cout<<NewBox<<endl;</pre>
130
              }
131
132
          }
133
134
135
    int main()
136 ₹ {
137
          check2();
138 }
                                                                                                                         Line: 80 Col: 1
```

<u>**1**</u> <u>Upload Code as File</u> ☐ Test against custom input

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