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Box It! 🔖

by **vatsalchanana**

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 B is an object of class *Box*:

$cout << B$ should print $B.l$, $B.b$ and $B.h$ on a single line separated by spaces.

Constraints

$0 \le l, b, h \le 10^5$
Two boxes being compared using the $<$ operator will not have all three dimensions equal.

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Submissions: 9764
Max Score: 30
Difficulty: Easy

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Current Buffer (saved locally, editable) ⎇ ⟲   C++   ⌄   ⤢ ⚙

```cpp
 1 ▸ #include<↔
 2
 3   using namespace std;
 4
 5

 6
 7 ▾ class Box{
 8       private:
 9       int l, b, h;
10       public:
11 ▾   Box(){
12           l = 0;
13           b = 0;
14           h = 0;
15       }
16 ▾   Box(int length, int breadth, int height){
17           l = length;
18           b = breadth;
19           h = height;
20       }
21 ▾   Box(const Box& B){
22           l = B.l;
23           b = B.b;
24           h = B.h;
25       }
26
27 ▾       int getLenght(){
28           return l;
29       }
30 ▾       int getBreadth(){
31           return b;
32       }
33 ▾       int getHeight(){
34           return h;
35       }
36 ▾       long long CalculateVolume(){
37           return (long long)l*b*h;
38       }
39
40 ▾       friend bool operator < ( Box&A,Box& B){
41 ▾           if( (A.l < B.l) || ((A.b < B.b) && (A.l == B.l)) || ((A.h < B.h) && (A.l == B.l) && (A.b == B.b)) ){
42               return true;
43 ▾           }else{
44               return false;
45           }
46       };
47
48 ▾       friend ostream& operator<< (ostream& output, const Box& B){
49           output << B.l << " " << B.b << " " << B.h;
50           return output;
51       }
52   };
53
54
55
56
57   //Overload operator < as specified
58   //bool operator<(Box& b)
59
60   //Overload operator << as specified
61   //ostream& operator<<(ostream& out, Box& B)
62
63

64
65   void check2()
66 ▾ {
67       int n;
68       cin>>n;
69       Box temp;
```

```
 70        for(int i=0;i<n;i++)
 71 ▾     {
 72            int type;
 73            cin>>type;
 74            if(type ==1)
 75 ▾         {
 76                cout<<temp<<endl;
 77            }
 78            if(type == 2)
 79 ▾         {
 80                int l,b,h;
 81                cin>>l>>b>>h;
 82                Box NewBox(l,b,h);
 83                temp=NewBox;
 84                cout<<temp<<endl;
 85            }
 86            if(type==3)
 87 ▾         {
 88                int l,b,h;
 89                cin>>l>>b>>h;
 90                Box NewBox(l,b,h);
 91                if(NewBox<temp)
 92 ▾             {
 93                    cout<<"Lesser\n";
 94                }
 95                else
 96 ▾             {
 97                    cout<<"Greater\n";
 98                }
 99            }
100            if(type==4)
101 ▾         {
102                cout<<temp.CalculateVolume()<<endl;
103            }
104            if(type==5)
105 ▾         {
106                Box NewBox(temp);
107                cout<<NewBox<<endl;
108            }
109
110        }
111    }
112
113    int main()
114 ▾  {
115        check2();
116    }
```

Line: 52 Col: 3

⬆ Upload Code as File   ☐ Test against custom input   [Run Code]   [Submit Code]

Congrats, you solved this challenge!

✔ Test Case #0   ✔ Test Case #1   ✔ Test Case #2
✔ Test Case #3   ✔ Test Case #4   ✔ Test Case #5

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