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Dashboard > C++ > Classes > Box It!

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Problem

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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.

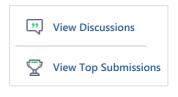
Constraints

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

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



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Suggest Edits

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```
C++14
 Current Buffer (saved locally, editable) & 49
                                                                                                                             Ö
 1 ▶ #include<↔
 3
    using namespace std;
 5
 6
    #define uint64 unsigned long long
 7
    class Box
 8 ▼ {
 9
    private:
10
        int m_length;
11
         int m_breadth;
12
        int m_height;
13
    public:
14
         Box()
15
             :m_length(0), m_breadth(0), m_height(0)
16 ▼
17
         Box(const int& 1, const int& b, const int& h)
18
             :m_length(1), m_breadth(b), m_height(h)
19 ▼
             { }
20
         Box(const Box& B)
             : m_length(B.m_length), m_breadth(B.m_breadth), m_height(B.m_height)
21
22 ▼
             { }
23 ▼
         const int& getLength()const { return m_length;
        const int& getBreadth()const {    return m_breadth;
const int& getHeight()const {    return m_height;
24 ▼
                                                                 }
25 ▼
26 ▼
         const uint64 CalculateVolume()const { return (static_cast<uint64>(m_length)*
27
                                                             static_cast<uint64>(m_breadth)*
28
                                                             static_cast<uint64>(m_height)); }
29
30
         bool operator< (const Box& obj2)
31 ▼
32
             return ( (this->m_length < obj2.m_length)</pre>
33
             ( (this->m_breadth < obj2.m_breadth) && (this->m_length == obj2.m_length) )||
34
             ( (this->m_height < obj2.m_height) && (this->m_length == obj2.m_length)
35
                                                 && (this->m_breadth == obj2.m_breadth)) );
36
         friend std::ostream& operator<< (std::ostream& out, const Box &obj);</pre>
37
38
    };
39
40
    std::ostream& operator<< (std::ostream& out, const Box &obj)
41 ▼ {
         return out<<obj.m_length<<" "<<obj.m_breadth<<" "<<obj.m_height;</pre>
42
43
44
45
    void check2()
46 ▶ {↔}
92
93
    int main()
94 ▶ {↔}
                                                                                                                    Line: 43 Col: 2
                       Test against custom input
                                                                                                        Run Code
                                                                                                                     Submit Code
1 Upload Code as File
```

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✓ Test Case #0

✓ Test Case #1

✓ Test Case #2

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✓ Test Case #4

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