OBJECT ORIENTED PROGRAMMING

Lab Assignment…

Submitted by:

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Date: 5.5.2023

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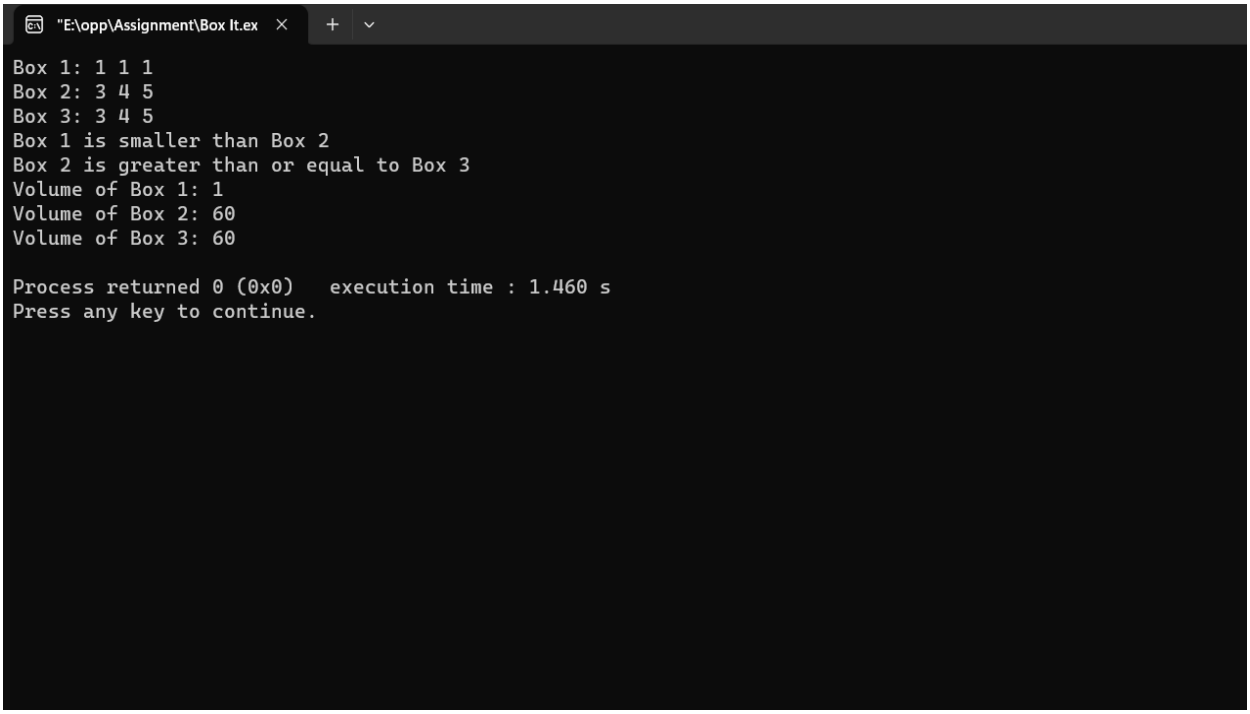
```cpp
#include <iostream>
using namespace std;

class Box
{
    int length;
    int breadth;
    int height;
public:

    Box() : length(1), breadth(1), height(1) {}

    Box(int l, int b, int h) : length(l), breadth(b), height(h) {}

    Box(const Box& B) : length(B.length), breadth(B.breadth), height(B.height) {}


    int getLength() const
    {
        return length;
    }

    int getBreadth() const
    {
        return breadth;
    }

    int getHeight() const
    {
        return height;
    }

    long long CalculateVolume() const
    {
        return (long long) length * breadth * height;
    }

    bool operator<(const Box& B) const
    {
        if (length < B.length)
        {
            return true;
        }
        else if (length == B.length && breadth < B.breadth)
        {
```

```
            return true;
        }
        else if (length == B.length && breadth == B.breadth && height < B.height)
        {
            return true;
        }
        else
        {
            return false;
        }
    }

    friend ostream& operator<<(ostream& output, const Box& B)
    {
        output << B.length << " " << B.breadth << " " << B.height;
        return output;
    }
};

int main()
{

    Box box1;
    Box box2(3, 4, 5);
    Box box3(box2);

    cout << "Box 1: " << box1 << endl<< "Box 2: " << box2 << endl<< "Box 3: " <<
box3 << endl;

    if (box1 < box2)
    {
        cout << "Box 1 is smaller than Box 2" << endl;
    }
    else
    {
        cout << "Box 1 is greater than or equal to Box 2" << endl;
    }

    if (box2 < box3)
    {
        cout << "Box 2 is smaller than Box 3" << endl;
    }
    else
    {
```

```
        cout << "Box 2 is greater than or equal to Box 3" << endl;
    }

    cout << "Volume of Box 1: " << box1.CalculateVolume() << endl<< "Volume of
Box 2: " << box2.CalculateVolume() << endl<< "Volume of Box 3: " <<
box3.CalculateVolume() << endl;
    return 0;
}
```

Output



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