

C++ THIS POINTER

Every object in C++ has access to its own address through an important pointer called **this** pointer. The **this** pointer is an implicit parameter to all member functions. Therefore, inside a member function, this may be used to refer to the invoking object.

Friend functions do not have a **this** pointer, because friends are not members of a class. Only member functions have a **this** pointer.

Let us try the following example to understand the concept of this pointer:

```
#include <iostream>

using namespace std;

class Box
{
public:
    // Constructor definition
    Box(double l=2.0, double b=2.0, double h=2.0)
    {
        cout <<"Constructor called." << endl;
        length = l;
        breadth = b;
        height = h;
    }
    double Volume()
    {
        return length * breadth * height;
    }
    int compare(Box box)
    {
        return this->Volume() > box.Volume();
    }
private:
    double length;      // Length of a box
    double breadth;     // Breadth of a box
    double height;      // Height of a box
};

int main(void)
{
    Box Box1(3.3, 1.2, 1.5);      // Declare box1
    Box Box2(8.5, 6.0, 2.0);      // Declare box2

    if(Box1.compare(Box2))
    {
        cout << "Box2 is smaller than Box1" << endl;
    }
    else
    {
        cout << "Box2 is equal to or larger than Box1" << endl;
    }
    return 0;
}
```

When the above code is compiled and executed, it produces the following result:

```
Constructor called.
Constructor called.
Box2 is equal to or larger than Box1
```