Scope resolution :: vs this ->

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I am trying to understand pointers and scope in OOP with C++. Is there any difference at all between:

```
class Class
{
public:
    void setVal (int value) {
        this -> value = value;
    }
    int getVal();
private:
    int value;
};
```

and this:

```
class Class
{
public:
    void setVal (int value) {
        Class::value = value;
    }
    int getVal();
private:
    int value;
};
```

c++ oop this

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asked Feb 28, 2015 at 23:04
Jeff-Russ
331 ▪ 2 ▪ 10

4 Completely orthogonal things. The second is short for `this->Class::value = true;` – T.C. Feb 28, 2015 at 23:09

Did you read your C++ book, to find out what each one does? – Lightness Races in Orbit Mar 1, 2015 at 0:06

My book simply states that they are equivalent and doesn't not explain any further. – Jeff-Russ Mar 1, 2015 at 0:38

@T.C. Both `this->value` and `Class::value` can be used to access the member variable. Could you please clarify further why they are completely orthogonal things? – pooya13 Feb 12, 2019 at 8:45

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1 Answer

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The two pieces of code you posted have identical behaviour, but not because `A->B` and `A::B` *ever* mean the same thing.

- `this->value` is, sort of, short for `this->Class::value`, because class `Class` is searched first for `value`.
- `Class::value` is, sort of, short for `this->Class::value`, because the current object is assumed when referring to a member variable without `this->`.

The `this->` means "give me something that's a part of *this* particular object I'm talking to you from, please"; the `Class::value` means "give me the thing called `Class::value`, please".

This logic doesn't quite apply to member functions, because specifying `Class::` yourself turns off virtual dispatch. So `this->foo()` is not the same as `this->Class::foo()`.

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answered Mar 1, 2015 at 0:04
Lightness Races in Orbit
375k ▪ 75 ▪ 639 ▪ 1039

Okay, that explains it. Thanks! I'm assuming that the first example is what is most commonly seen. – Jeff-Russ Mar 1, 2015 at 0:38

1 @Jeff-Russ: Definitely. It's rare to qualify a member with `Class::` when that member is non-static, and when you're inside a member function. – Lightness Races in Orbit Mar 1, 2015 at 0:49

Your two bullet points' first part read the same. I am assuming it is a typo? I am still confused about the answer to this question and would appreciate it if you clarified further. The question was about the differences between `this->B` and `A::B`, not `A->B` and `A::B`. – pooya13 Feb 12, 2019 at 8:40

@pooya13 No typo, it's as written. :) Whenever you access a member of the "current" type, whether it's `static` or not, `this->` is implied. (For a static member, this is just semantics because the `this` pointer isn't used for a static access, but it's there; the OP doesn't have any static members though.) `A->B` isn't even valid as `A` is a type not an object. – Lightness Races in Orbit Feb 12, 2019 at 11:09

I know `A->B` is not valid. That is why I am confused by your answer. The question was about the differences between `this->B` and `A::B`, not between `A->B` and `A::B` but your answer says: "...not because `A->B` and `A::B` ever mean the same thing..." So what is the difference between `this->B` and `A::B`? – pooya13 Feb 12, 2019 at 17:12

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