Subject: What does !! in e.g. FtpClient class mean?
Posted by NilaT on Wed, 10 Apr 2013 11:57:26 GMT
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Hello,

I just got a very noobish question.

What is the following Statement good for?
!!FtpDelete(path, ftpconn);
(This example is from the FtpClient class, but there maybe others)

!! = not not? Why use it then anyway?

Thanks for the advice.
Regards.

Subject: Re: What does !! in e.g. FtpClient class mean?
Posted by dolik.rce on Wed, 10 Apr 2013 12:39:11 GMT
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NilaT wrote on Wed, 10 April 2013 13:57I just got a very noobish question.

What is the following Statement good for?
!!FtpDelete(path, ftpconn);
(This example is from the FtpClient class, but there maybe others)

!! = not not? Why use it then anyway?
Hi NilaT,

This question appears here regulary, and it's not really noobish What it in fact does is a cast to
bool The first negation causes imlicit cast to bool and the second one just returns the value to the
original. Same as if you wrote (bool)FtpDelete(path, ftpconn);
I'm not exactly sure why Mirek prefers writing it this way, but I strongly suspect the reason is that it
is faster to write You can find it on many places in U++ sources...

Best regards,
Honza

Subject: Re: What does !! in e.g. FtpClient class mean?
Posted by NilaT on Wed, 10 Apr 2013 12:50:02 GMT
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Hi and thanks for the fast answer.

I tried to search the site, but "!!" or "not not" are not really good search terms

So you cast int to bool with a "!"?
And then you return exctly the opposite?

So if the function returns 0 (which would be false in bool statement anyway, so why cast?) you convert it to bool, and then the second "!" returns true?
Is it right?

It's a bit confusing though

Subject: Re: What does !! in e.g. FtpClient class mean?
Posted by dolik.rce on Wed, 10 Apr 2013 13:54:26 GMT
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Sometimes cast is necessary, e.g.:
```
int func(int n){
    return 1;
};
int func(bool b) {
    return 2;
}

int main() {
    int i=0;
    func(i) != func(!!i); // there is a difference ;-)
    func(!!i) == func((bool)i); // this is same ;-)
}
```

When you use '!' on anything else then bool, compiler will first cast it to bool (if possible) and then compute the negation. So !!x is equal to !(!((bool)x)).

Honza

Subject: Re: What does !! in e.g. FtpClient class mean?
Posted by NilaT on Wed, 10 Apr 2013 14:27:22 GMT
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Allllright, thanks for the answer

Subject: Re: What does !! in e.g. FtpClient class mean?
Posted by mirek on Mon, 15 Apr 2013 16:42:10 GMT

I am not FtpClient author and brief review of code indicates that in that particular case, using !! is redundant.

Anyway, sometimes it can have same benefit, see Prompt:


```
int Prompt(Callback1<const String&> WhenLink,
        const char *title, const Image& iconbmp, const char *qtf, bool okcancel,
        const char *button1, const char *button2, const char *button3,
    int cx,
    Image im1, Image im2, Image im3)
{
........
 int nbtn = !!button1 + !!button2 + !!button3;
```

Subject: Re: What does !! in e.g. FtpClient class mean?
Posted by Novo on Tue, 16 Apr 2013 17:39:24 GMT

mirek wrote on Mon, 15 April 2013 12:42I am not FtpClient author and brief review of code indicates that in that particular case, using !! is redundant.

Anyway, sometimes it can have same benefit, see Prompt:


```
int Prompt(Callback1<const String&> WhenLink,
        const char *title, const Image& iconbmp, const char *qtf, bool okcancel,
        const char *button1, const char *button2, const char *button3,
    int cx,
    Image im1, Image im2, Image im3)
{
........
 int nbtn = !!button1 + !!button2 + !!button3;
```


I can be wrong, but it is not guarantied that true == 1. You can only be sure that false == 0.

Subject: Re: What does !! in e.g. FtpClient class mean?
Posted by mirek on Tue, 16 Apr 2013 17:42:16 GMT

Novo wrote on Tue, 16 April 2013 13:39mirek wrote on Mon, 15 April 2013 12:42I am not FtpClient author and brief review of code indicates that in that particular case, using !! is

---

redundant.

Anyway, sometimes it can have same benefit, see Prompt:


```
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        const char *button1, const char *button2, const char *button3,
    int cx,
    Image im1, Image im2, Image im3)
{
........
 int nbtn = !!button1 + !!button2 + !!button3;
```


I can be wrong, but it is not guarantied that true == 1. You can only be sure that false == 0.

Actually, it IS guaranteed. Result of comparison operators and logical operators is always 0 or 1, since C was invented.

Mirek

Subject: Re: What does !! in e.g. FtpClient class mean?
Posted by Novo on Tue, 16 Apr 2013 18:27:03 GMT
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mirek wrote on Tue, 16 April 2013 13:42
Actually, it IS guaranteed. Result of comparison operators and logical operators is always 0 or 1, since C was invented.

Mirek

Thank you for the clarification. I found this in the C++ standard (4.7.4 Integral conversions). Now I have one more reason to file bug reports with compilers.