

Re: Access Violation error while using pointers

Source: <http://www.tech-archive.net/Archive/VC/microsoft.public.vc.debugger/2007-01/msg00005.html>

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John Dallman wrote:

In article <606AE501-F79F-4F68-B6A1-DABD35118F20@xxxxxxxxxxxx>, thejasviv@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx (= ?Utf-8?B?dGhIamFzdml2? =) wrote:

```
void main()
{
char *p="Hello";
*p='M'; //This is where the error occurs
cout<<p<<endl;
}
```

This code compiles and executes perfectly in Borland C++. When I run the same code in VC++ 6.0, however, I get the below error in debugging mode:

Unhandled exception in Test.exe: 0xC0000005: Access Violation

Can someone please provide me a solution to this?

Just to make sure we agree on what you're trying to do, you're trying to change the "Hello" string that p is pointing to to "Mellow"?

Changing the value of literal strings is something the C and C++ compilers are not required to support.

There is something interesting here, and I can see why thejasviv figured he (or she) could change the string literal like that.

A string literal is itself an object, and its type is "array of const char" (this changed in the first revision of the 1998 doc)

But now look at this assignment:

```
char *p="Hello";
```

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If you look at that carefully, you'll wonder: if the string literal is an array to const elements, why can I convert it to a non-const pointer? Shouldn't that be an error?

Yes, it should, but doing so would severely break C's compatibility because there was no "const" keyword in C, so pretty much every C function, from those in "stdio.h" onwards, would not compile anymore.

Thus, the C++ standard specifically allows you to convert from an "array of const char" to a "char*", even though this conversion loses the constantness, opening the door for undefined behaviour when you try to modify that string literal.

Best

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