Subject: What is the difference between the memory management in C and C++?
Posted by duckworth on Wed, 07 Dec 2011 06:46:33 GMT
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I want to know mostly the disadvantages of malloc() used is C and the advantages of the New operator used in C++.

Subject: Re: What is the difference between the memory management in C and C++?
Posted by dolik.rce on Wed, 07 Dec 2011 07:52:31 GMT
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Hi duckworth,
duckworth wrote on Wed, 07 December 2011 07:46I want to know mostly the disadvantages of malloc() used is C and the advantages of the New operator used in C++.
This is not really U++ related question and it definitely doesn't belong to this category... but welcome to the forum anyway

Big disadvantage of malloc is, that it is not type safe. You won't get compiler error when doing something likeint* i = static_cast<int*>(malloc(sizeof(short)));This simple example looks like a programmers stupidity, but it is easy to do something like this in more complex situations... and also pain to debug

Also, new takes calls constructor, so you don't have to worry about using uninitialized memory. (Same goes for delete, which calls destructor)

Malloc is a low level approach, that you should never need in normal C++ usage.

Best regards,
Honza

Subject: Re: What is the difference between the memory management in C and C++?
Posted by mdelfede on Wed, 21 Dec 2011 13:57:38 GMT
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The *only* advantage using malloc is realloc() to reallocate blocks, which in many cases is by far more efficient than creating a new block and copying data on it.

BTW, realloc usage makes sense only on low level coding and with POD types, which is not the case of most c++ code.
Anyways, I think that a missing 'renew' is a bad thing for c++ and makes porting of old code painful sometimes.

Just last thing : mixing new + realloc and free or malloc and delete is an error which can bring *many* problems if you use a toolkit with custom allocators, as UPP.

Max

Subject: Re: What is the difference between the memory management in C and C++?
Posted by nisha.kale1122 on Tue, 29 Jan 2019 12:10:40 GMT
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In C, you pretty much have to manage memory on your own. Garbage and dangling references are found in almost every reasonably sized C program.
It becomes hard to reason about ownership and lifetime with dynamic allocations for most programmers.

In idiomatic modern C++, memory management is never done by the application programmer. There are very few cases where you need to use new, delete, malloc() etc.
