

Re: New

Source: <http://coding.derkeiler.com/Archive/General/comp.programming/2005-11/msg01044.html>

- *From:* niklasb@xxxxxxxxxxxxxx
 - *Date:* 28 Nov 2005 10:59:04 -0800
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Randy Howard wrote:

> niklasb@xxxxxxxxxxxxxx wrote
> (in article
> <1132791787.554911.5220@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx>):
>
>> As to whether C++ is a reasonable first language, I think that depends
>> in part on how it's taught.
>
> So far, so good.
>
>> C++ can be used and taught as a fairly
>> high-level language, but it is often taught from the bottom up,
>> starting with the lowest-level language features as if it were C
>> (e.g., using pointers and null-terminated strings instead of the
>> standard string class) which tends to overwhelm beginners and
>> over emphasizes the wrong things.
>
> Disagree completely. Ignoring low-level details (which,
> contrary to popular belief, actually do matter) is one of the
> main things wrong with modern CS education today.

We may not disagree as much as all that. I agree that low-level details matter, and a competent C++ programmer should be proficient in the "C" part of C++, e.g., null-terminated strings, raw arrays, pointers, manual memory management, etc.

All I was trying to say is that the order in which concepts should be introduced to a new C++ programmer should be more top-down -- focusing initially in the problem domain, developing the skill of clearly understanding a problem and decomposing it into parts (functions, variables, loops, etc.).

In keeping with this top-down approach, one can initially think of string, vector, list, etc. as "magic" primitive facilities provided by the language. Fairly soon, though, one should learn about how these things work at a more nuts-and-bolts level and how to implement one's own classes.

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In contrast, teaching C tends to be more bottom-up, in that you start close to the machine. That's OK. It's how I learned programming. But I think C++ lends itself to a more top-down approach. You may (and probably do) disagree, but please don't misconstrue me as saying the low-level stuff doesn't matter.

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• *References:*

◆ *New*

◇ *From:* Nate

◆ *Re: New*

◇ *From:* niklasb

◆ *Re: New*