C++11 / Boost Library Workshop

Using the C++11 Standard Library Augmented by Boost

Durchführung:
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Agenda

Topics* Monday to Friday (last day course ends after lunch-break)

- Monday 1: Some Fundamentals
- Monday 2: Universal Basic Helpers

- Tuesday 1: Basic and Advanced String Processing
- Tuesday 2: A Mix of Useful Things

- Wednesday 1: Smart Pointers
- Wednesday 2: The STL and Beyond

- Thursday 1: Input and Output / Concurrency Basics
- Thursday 2: A Tour of Boost

- Friday: A Tour of Boost (cont.)

*: There is also a small appendix on related topics not explcitely covered during this training.

Online Version of this Presentation

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You may download the document from: http://tbfe.de/archiv

[!] The content was produced and checked with adequate care. The author may not be held liable for any errors or inaccuracies still contained.

You are welcome to point out errors or propose general improvements.

Companion Book

Attendees of this training will receive a personal copy of the book:

The C++ Standard Library (2nd Edition)

A Tutorial and Reference

by: Nicolai M. Josuttis

ISBN-13: 978-0-321-62321-8

Many presentation slides will refer to a chapter or section of this book in their top-right corner - so feel free to use the copy you received right away as supplement to the print-out of the presentation.

Your copy of this book grants a personal free 45 day license from SAFARI to access a searchable online version.*

*: The annotations slide explains how you may create web-links from a private copy of the online version of this presentation to anywhere you like, including this book of course. (Note that the effort to do this makes more sense if you choose to license the online version of the book permanently).

Online References

C++ has become a huge topic so it will frequently be necessary to lookup details in an online reference.

As general C++ reference the following can be recommended:

- http://en.cppreference.com/w/ - totally free, seems to be run by enthusiast and now includes even live examples
- http://www.cplusplus.com/ - obiously financed by moderate pop-ups, nevertheless well organized and up-to-date

For topics specific to boost:

- http://www.boost.org - The Official Boost Site
- http://en.highscore.de/cpp/boost/frontpage.html
  A free Online Book* by Boris Schäling in English Language and
- http://www.highscore.de/cpp/boost - same in German Language

*: Some of the following pages will refer to a chapter or section in their top-right corner, so you may want to keep the table of content of this book open in a browser tab.

Online Compilation

A growing number of internet sites now offer free* online compilation services and may be tried for small examples without having a C++ compiler or even a full IDE like Eclipse installed locally.

- For an overview see appendix: **Online Compilation**

In most cases code can even be shared among developers by creating a permanent link that can be sent around via email. Others allow the use of browser local storage to save your code and retrieve it later.

Especially services that allow to chose from several compilers make it easy to find out whether some surprising behavior is just a glitch of a particular implementation.

[!] In case of free services you should of course not *depend* on that the site up and available all the time and everywhere and not count on your code is reliably saved in permanent store.

*: At least for some sites the motivation seems to be to offer upgrades against a fee. Details like guaranteed up-time, safety of your code (against accidental loss or being spied on) will then be based on the details of a service agreement.

Presentation

This presentation uses a free HTML5-based slide-show tool named `remark`.

Viewing

You may use any recent browser of your choice.

- JavaScript must be enabled.
- Modern CSS should be supported.*
- Cookies are **not** used.

Following Links

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> (i) You may want to follow links when viewing this presentation by **clicking with the CTRL-key held** down, what will open the target document in a separate browser tab.

*: Given an appropriate level of CSS knowledge you may be able to tweak the appearance.

Prepared Printouts

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> (i) You may access a final electronic version including recent changes made during this training and later via download.

Printable PDF files have the same base name as the HTML version with and suffix changed to `.pdf`. So the PDF for this file (assuming you currently view it in the browser) is `00_topics.pdf`.

DIY Printouts

Google's *Chrome Browsers* can create a PDF any time:

- First use *Print To File*[*] and (e.g. to shrink and combine pages)
- then some PDF tool of your choice for post-processing.

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[*]: The kind of printout you receive depends on the viewing mode used: in *presenters mode* also the note pages will be printed, otherwise the printout is limited to the slide content.

Private Annotations

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You have the option to handle this document by purely electronic means, *including private annotations* you may want to add.

1. Save the HTML files of the presentation locally.
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When viewing the document in a browser you may chose to view your annotations by changing to *presenter's mode* with the `p` key.

- **You may try it out right now - back to normal is also with `p`.**

> (i) Future versions of this presentation **may or may not** use the notes section for their own purposes - but in any case it should be possible to merge your private annotations with a diff-tool.

*: With minor extensions, if you happen to know markdown already.