C++ Club UK

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Introducing the Rule of DesDeMovA (1/4)

Blog post by Peter Sommerlad

https://blog.safecpp.com/2019/07/01/initial.html

https://accu.org/content/conf2014/Howard_Hinnant_Accu_2014.pdf

Rule of Zero:

Code that you do not write cannot be wrong.

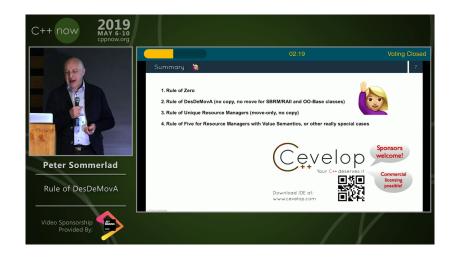
Introducing the Rule of DesDeMovA (2/4)



Introducing the Rule of DesDeMovA (3/4)



Introducing the Rule of DesDeMovA (3/4)



strong_typedef - Create distinct types for distinct purposes

Article by Anthony Williams

https://www.justsoftwaresolutions.co.uk/cplusplus/strong_typedef.html

https://github.com/anthonywilliams/strong_typedef

```
using transaction_id =
    jss::strong_typedef<struct transaction_tag, std::string>;

bool is_a_foo(transaction_id id)
{
    auto &s = id.underlying_value();
    return s.find("foo") != s.end();
}
```

Elements C++ GUI library

```
https://www.cycfi.com/2019/07/photon-micro-gui/
https:
//www.reddit.com/r/cpp/comments/ccq9pn/elemental_c_gui_library/
```

Are there any good C++ libraries for data visualization?

- ▶ VTK https://vtk.org/
- ► ROOT https://root.cern.ch/
- matplotlib-cpp https://github.com/lava/matplotlib-cpp
 - matplotlib (Python) https://matplotlib.org/
- QCustomPlot (QT, GPL/commercial) https://www.qcustomplot.com/

CppCast - CMake and VTK with Robert Maynard

```
http://cppcast.com/2019/07/robert-maynard/
```

https://www.reddit.com/r/cpp/comments/c9bpxb/cppcast_cmake_and_ vtk_with_robert_maynard/

CMake line by line - creating a header-only library

```
http://dominikberner.ch/cmake-interface-lib/
https://www.reddit.com/r/cpp/comments/c8ty2h/a_line_by_line_
explanation_how_to_create_a/
```

Professional CMake: A Practical Guide, 4th ed., CMake 3.15 https://crascit.com/professional-cmake/ \$30

https://github.com/bernedom/SI

Are there any OSes built using C++

https://www.reddit.com/r/cpp/comments/cho1qb/are_there_any_oses_built_using_c/

- ► TempleOS
- ▶ Haiku
- Google Fuchsia
- ▶ IncludeOS
- DistortOS (RTOS)
- Symbian OS (Dead)
- SerenityOS

Agner Vector Class Library V2

This is a C++17 class library for using the Single Instruction Multiple Data (SIMD) instructions in modern microprocessors.

https://www.agner.org/optimize/blog/read.php?i=1013

https://github.com/vectorclass/version2 (Apache 2.0)

Manual

https://github.com/vectorclass/manual/blob/master/vcl_manual.pdf

Approval tests

Also known as Golden Master Tests or Snapshot Testing

- CppOnSea 2019 Clare Macrae Quickly testing legacy code https://youtu.be/dtm8V3TIB6k
- ► CppCast with Clare Macrae https://cppcast.com/clare-macrae/
 - https://www.reddit.com/r/cpp/comments/ckzc11/cppcast_approval_ tests with clare macrae/
- Code https://github.com/approvals/ApprovalTests.cpp (Apache 2.0)
- Approval Tests Library Capturing Human Intelligence [available for Java, C#, VB.Net, PHP, Ruby, Node.JS and Python] https://approvaltests.com/