C++ Club UK

Gleb Dolgich 2019-10-17

2019-10 Pre-Belfast Mailing

```
http://www.open-
std.org/jtc1/sc22/wg21/docs/papers/2019/#mailing2019-10
```

 http://www.openstd.org/jtc1/sc22/wg21/docs/papers/2019/p1894r0.pdf

https://www.reddit.com/r/cpp/comments/dhm138/wg21_the_2 01910_mailing_is_now_available/

- Oh boy (RX) and doubling down
- Oh boy (Graphics)

wg21.link cheatsheet

```
wg21.link - WG21 redirect service.
Usage:
    wg21.link/nXXXX
    wg21.link/pXXXX
    wg21.link/pXXXXrX
        Get paper.
    wg21.link/standard
        Get working draft.
    wg21.link/cwgXXX
    wg21.link/ewgXXX
    wg21.link/lwgXXX
    wg21.link/lewgXXX
    wq21.link/fsXXX
    wg21.link/editXXX
        Get issue.
    wg21.link/index.json
    wg21.link/index.ndison
    wg21.link/index.txt
    wg21.link/specref.json
        Get everything.
    wg21.link/
        Get usage.
    wg21.link/<something else>
        Get 404.
Sources:
  - http://www.open-std.org/itc1/sc22/wg21/docs/papers/{2002..2018}/,
  - http://www.open-std.org/jtc1/sc22/wg21/docs/cwg {active,defects,closed}.html,
  - http://cplusplus.github.io/EWG/ewg-{active.complete.closed}.html,
  - http://cplusplus.github.io/LWG/lwg-{active, defects, closed}.html,
  - http://issues.isocpp.org/,
  - https://github.com/cplusplus/draft/tree/master/papers.
  - https://github.com/cplusplus/draft issues and pull-requests,
  - the private wiki of the C++ committee, and
  - a few manual additions.
```

Pitchfork

A de-facto standard C++ project layout, by Colby Pike <vectorofbool@gmail.com>

- Reddit post 1
- Reddit post 2
- Pitchfork GitHub repo
- Pre-paper
- Bloomberg BDE physical code organization

Address Sanitizer is coming to MSVC

```
https://www.reddit.com/r/cpp/comments/d6k7mt/address_sanitizer_is_coming_to_msvc/
```

Span Lite

https://github.com/martinmoene/span-lite

A C++20-like span for C++98, C++11 and later in a single-file header-only library.

mdspan

- Implementation https://github.com/kokkos/mdspan (BSD 3-Clause)
 - Intro https://github.com/kokkos/mdspan/wiki/A-Gentle-Introduction-to-mdspan
 - r/cpp https://www.reddit.com/r/cpp/comments/cl127i/mds pan_productionquality_reference_implementation/
- Kokkos https://github.com/kokkos/kokkos
- Multi-dimensional strided array views in Magnum https://blog.magnum.graphics/backstage/multidimensiona l-strided-array-views/
- P0009R9 mdspan: A Non-Owning Multidimensional Array Reference http://wg21.link/p0009r9
- CppCast with Bryce Adelstein Lelbach https://cppcast.com/bryce-lelbach-mdspan/

Enums, warnings, and default

1 -Wswitch-enum

```
https://brevzin.github.io/c++/2019/08/01/enums-default/
https://www.reddit.com/r/cpp/comments/cubah9/enum_switc
h_warnings/
GCC & Clang:
```

Machine Learning with C++

Reddit

- PyTorch https://pytorch.org/features -- has a pure C++ front end https://pytorch.org/cppdocs/
- TensorFlow for C++ https://www.tensorflow.org/api_docs/cc
- Shogun https://www.shogun.ml/

The sad history of Unicode printf-style format specifiers in Visual C++

https://devblogs.microsoft.com/oldnewthing/20190830-00/?p=102823

Reddit

Introducing Magnum Python Bindings

https://blog.magnum.graphics/announcements/introducingpython-bindings/

https://github.com/pybind/pybind11

Are there any memory safety libraries for C++?

```
https://www.reddit.com/r/cpp/comments/d0hguz/are_there_any
_memory_safety_libraries_for_c/
https://github.com/duneroadrunner/SaferCPlusPlus/
https://github.com/deplinenoise/ig-memtrace
```

MemTrace is a memory debugging tool developed internally at Insomniac Games.

https://github.com/ivmai/bdwgc

```
The Boehm-Demers-Weiser conservative C/C++ Garbage Collector (libgc, bdwgc, boehm-gc) https://www.hboehm.info/gc/
```

AnyDuck: A Value Type Erased Type

```
Steve Downey: https://www.sdowney.org/2019/07/anyduck-a-value-type-erased-type/
```

Template meta-programming: Some testing and debugging tricks

https://cukic.co/2019/02/19/tmp-testing-and-debugging-templates/

using vs. typedef

https://www.nextptr.com/tutorial/ta1193988140/how-cplusplus-using-or-aliasdeclaration-is-better-than-typedef

Berkeley Container Library (BCL)

https://github.com/berkeley-container-library/bcl

Quote

Sturgeon's Law:

90% of everything is crap.