C++ Club UK Meeting 120

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2020-12 C++ committee mailing select papers

- Mailing
  - P0561R5: An RAII Interface for Deferred Reclamation
  - P1072R6: `basic_string::resize_and_overwrite`
  - P1102R2: Down with ()!
  - P1689R3: Format for describing dependencies of source files
  - P2175R0: Composable cancellation for sender-based async operations
  - P2186R1: Removing Garbage Collection Support
  - P2213R1: Executors Naming
  - P2216R1: `std::format` improvements
  - P2248R1: Enabling list-initialization for algorithms
  - P2265R0: Renaming `any_invocable`
  - P2273R0: Making `std::unique_ptr constexpr`
  - P2274R0: C and C++ Compatibility Study Group

Perhaps it's time for a more opinionated dialect of C++

- Reddit
- Should I litter my code with (the correct) attributes for every function, or just leave it pretty?

Latest C++: theory vs. reality

- Reddit
  - Godot game engine C++ standard thread on GitHub

David Friberg - Three interesting minor features of C++20

- YouTube
- Slides

mocxx: a versatile C++ function mocking framework based on Frida, by Guardsquare

No macros! Doesn't support mocking virtual functions yet.

- Reddit
  - GitHub (C++17, GPL-3.0)
    - Frida - Dynamic instrumentation toolkit for developers, reverse-engineers, and security researchers
  - Explanatory blog post at Guardsquare

Compile 1 Million Lines Of C++ In ~2 Minutes With A 16 Core Ryzen 9 5950x

- Embarcadero
  - Reddit

> *I love how a shitty, bug-ridden development environment that costs US$1359 for the most basic edition still requires you to buy a separate US$139 extension to enable parallel builds, a standard feature available on practically every other closed and open source compiler and build system out of the box for $0 extra.*

Dev-C++
A fast, portable, simple, and free C/C++ IDE for Windows, built in Delphi
- GitHub

Using `std::list::splice` to implement a LRU cache

- Article on nextptr
- `std::list::splice`

What should the state of a moved-from object be?

- Raymond Chen
  - Reddit

Reducing Memory Consumption in Visual Assist

- Blog post
  - Reddit

dont_deduce<T>

- artificial::mind
  - Reddit

C++11

```
1 template <class T> struct foo_t { using type = T; };
2 template <class T> using foo = typename foo_t<T>::type;
```

C++20

```
1 template <typename T>
2 auto operator+(
3   vec3<T> const& a,
4   std::convertible_to<T> auto const& b
5 ) -> vec3<T>;
```

Writing a custom iterator in modern C++ (C++17)

- Article
  - Reddit

C++ for Swift developers

- Sidharth Juyal
  - Reddit

Wrapping C++ for use in Swift

- Reddit

Is Zero a Butterfly?

- Shafik Yaghmour
  - Reddit

`std::optional` and other useful types

- Reddit

If you were allowed to make breaking changes to the C++ specification, what features would you modify/replace/remove to make the language better?

- Reddit

EnTT 3.6.0

Gaming meets modern C++ - a fast and reliable entity component system (ECS) and much more.

- Announcement on Reddit
  - GitHub (C++17, MIT)

With `std::variant`, you choose either performance or sanity

- Reddit

MSVC build performance

- Improving code generation time with C++ Build Insights
- Faster C++ builds, simplified: a new metric for time
- The Coalition Sees 27.9X Iteration Build Improvement with Visual Studio 2019
- Faster C++ Iteration Builds
  - Reddit
- C++ Build Analyzer
  - C++ Build Insights SDK

Infix Function Calls with Boost HOF

- Jo Boccara
  - Reddit

Before

```
1 const bool b = isPrefixOf(prefix, text);
```

After

```
1 const bool b = prefix <isPrefixOf> text;
```

Polymorphism Decision Table

- Kilian Henneberger

Tracy Profiler

A real time, nanosecond resolution, remote telemetry, hybrid frame and sampling profiler for games and other applications.

Tracy supports profiling CPU (C, C++11, Lua), GPU (OpenGL, Vulkan, OpenCL, Direct3D 12), memory, locks, context switches, per-frame screenshots and more.

- GitHub

The most thoroughly commented linker script (probably)

- Stargirl
  - GitHub
  - Reddit

How can I write a C++ class that iterates over its base classes?

- Raymond Chen
  - Reddit

Template specialization and instantiation

- Xiang Fan, Microsoft
  - Reddit

C++ Performance Trap #1: Constant-size `std::vector`

- Scott Wolchok
  - Reddit
  - Software optimization resources, by Agner

StackOverflow

Carla Notarobot 🤖🧑‍💻 @CarlaNotarobot
Boss: Where did you get this code?
Me: Stack Overflow
Boss: From the questions or the answers?

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