C++ Club UK Meeting 123

Gleb Dolgich

2021-02-25

Winter commitee meeting trip report (virtual)

- Herb Sutter
  - Reddit

WG21 mailing2021-02

- mailing2021-02
  - Reddit

Select papers

- P2317R0: C++ – an Invisible Foundation of Everything
- SG22/P2305R0: Type inference for variable definitions and function returnsproposal for C23
- SG22/P2310R0: Revise spelling of keywords for C23
- SG22/P2303R0: Function literals and value closures for C23
- P2290R0: Delimited escape sequences
- P2322R0: `ranges::fold`
- P2321R0: `ranges::zip`
- P2320R0: The Syntax of Static Reflection

```cpp
meta::info r1 = ^int;   // reflects the type-id int
meta::info r2 = ^x;     // reflects the id-expression x
meta::info r2 = ^f(x);  // reflects the call f(x)
```

F´: A Flight-Proven, Multi-Platform, Open-Source Flight Software Framework

Fprime runs on Ingenuity Mars helicopter – Wikipedia

- NASA on GitHub – 44% C++

When to use `this` to refer to a class member?

- Reddit

Top five C/C++ things/tips/tricks you wish you had known earlier and are now used very often

- Reddit

Quite a few useful suggestions in the thread.

Portability: should we stop using int?

- Reddit

Build2: Complete C++20 Modules Support with GCC

- Boris Kolpackov
  - Reddit

> ***build2*** *now provides conforming and scalable support for all the major C++20 Modules features when used with GCC. This includes named modules, module partitions (both interface and implementation), header unit importation, and include translation.*

Clang support is coming soon.

Meson Build 0.57.0

- Release notes
  - Reddit
- The Absolute Beginner's Guide to Installing and Using Meson

Highlights

- Experimental support for C++ modules in Visual Studio
- **meson test** only rebuilds test dependencies
- Support added for LLVM's thinLTO

Boosting Productivity and Performance with the NVIDIA CUDA 11.2 C++ Compiler

- NVIDIA
  - Reddit

> *All useful stuff for machine learning is written for cuda, so everyone is forced to buy Nvidia. Been waiting for opencl pytorch backend for years, but it just seems like nobody really has a reason to do it.* #

Anonymous types in C++

- Jan Bielak
  - Reddit

```cpp
constexpr auto simplify(struct_(int numerator, denominator;) ratio) ->
     decltype(ratio)
{
    int gcd = std::gcd(ratio.numerator, ratio.denominator);
    return { ratio.numerator / gcd, ratio.denominator / gcd };
}
```

Hot reloading C++ for rapid development with the help of **fungos/cr**

- Alex Dixon
  - fungos/cr
  - cr.h: A Simple C Hot Reload Header-only Library

Library: Conceptual

A C++20 library adapting preexisting type_traits into concepts, as well as improving upon the preexisting standard ones with better subsumption.

- GitHub
  - Reddit

C++ Memory Safety

- Reddit

Twitter