C++ Club Meeting Notes

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2019-11-21

Bjarne Stroustrup on Lex Fridman's AI Podcast

Podcast page

YouTube

Belfast trip reports

- Bryce Lelbach via Reddit
- Botond Ballo
  - Reddit
  - Papers on GitHub
- Timur Doumler via CppCast
  - Reddit
- Ben Craig via Reddit
- Guy Davidson
  - Reddit

Sourcetrail is now free and open-source software

Blog post

GitHub

Reddit

When is it justified to use C++ for a project?

Reddit (1), Reddit (2)

Is it time for a rebased Boost2 that assumes C++20 as its starting point?

Reddit

Corentin Jabot

P0443R11 The Unified Executors Proposal

Eliminating the Static Overhead of Ranges

Colby Pike, Reddit

Without ranges

```
vector<string> child_names;
for (auto& person : all_people) {
    if (person.age < 14) {
        child_names.push_back(person.name);
    }
}
```

With ranges

```
auto children_names =
    all_people
    | filter([](const auto& person) { return person.age < 14; })
    | transform([](const auto& person) { return person.name; })
    | to_vector;
```

Expression templates, ranges, and coroutines

- Wikipedia
- We don’t need no stinking expression templates by Andy G
  - Reddit

Change standard containers' `size()` method to return signed integer?

Reddit

Is requiring lambdas to explicitly list what they capture a good coding standard?

Reddit

Installing GCC on Windows

- GCC 9
- GCC 8.2 by STL

The arrow operator (1/2)

StackOverflow:

> *The `operator->` has special semantics in the language in that, when overloaded, it reapplies itself to the result. While the rest of the operators are applied only once, `operator->` will be applied by the compiler as many times as needed to get to a raw pointer and once more to access the memory referred by that pointer.*

The arrow operator (2/2)

```
1 struct A { void foo(); };
2 struct B { A* operator->(); };
3 struct C { B operator->(); };
4 struct D { C operator->(); };
5 int main() {
6     D d;
7     d->foo();
8 }
```

Thanks to Martin Waplington for suggesting this.

Towards a standard unit systems library

P1930R0

Reddit

Robert Ramey:

> *The value of a paper like this would be to narrow the scope or domain of a problem to something that would be useful component in solving bigger problems. This paper does the opposite – expanding the domain to encompass the whole world of physics.*

C++ `std::string_view` for better performance: An example use case

Article

Reddit

Arthur O'Dwyer: `std::string_view` is a borrow type

> *Borrow types are essentially "borrowed" references to existing objects. They lack ownership; they are short-lived; they generally can do without an assignment operator. They generally appear only in function parameter lists; because they lack ownership semantics, they generally cannot be stored in data structures or returned safely from functions.*

cppreference: `std::basic_string_view` (C++17)

Scott Meyers's guideline "Make non-leaf classes abstract"

Reddit

Empty struct size in C and C++

JF Bastien @jfbastien

Today's episode of "something I didn't know about C and C++":

```
int size() {
   struct empty {};
   return sizeof(struct empty);
}
```

This code returns 0 in C and 1 in C++, because empty structs have different size in both languages. 🥺

thread

20w • 21/02/2019 • 20:33

Hello World with C++2a modules

Arthur O'Dwyer

> *Here's how to build a "Hello world" program using Clang's implementation of C++2a Modules, as it currently stands as of November 2019.*

Reddit

Twitter

Victor (🤸) Zverovich @vzverovich

TDDD – technical debt driven development

5h • 17/10/2019 • 14:50

Quote

Ellen Ullman:

> *We build our computer (systems) the way we build our cities: over time, without a plan, on top of ruins.*