

C++ Club UK Meeting 114

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2020-10-01

September 2020 mailing

- September 2020 mailing

Select papers

- P2216R0 `std::format` improvements
- P2218R0 More flexible `optional::value_or()`
- P2219R0 Executors Issues Needing Resolution

CppCon2020 presentation materials

- [GitHub](#)

The Little Things: Speeding up C++ compilation

- Article by Martin Hořeňovský
 - [Reddit](#)
 - [HackerNews](#)

Techniques

- Include less
- Forward declarations (*hmmm – GD*)
- Explicit outlining
- Hidden friends
- Link less
- Extern template
- **Modules** (*not mentioned... – GD*)

Tools

- [Include What You Use \(IWYU\)](#)
- [Ninja](#)
- [LLD](#)

The Defold game engine code style

Article

Code style

- C-like C++
- No classes (*huh?* – GD)
- No exceptions
- No STL
 - Custom containers
- Data ownership tracking
- C++98

Should I use C++ exceptions?

Reddit

C++17 Zero allocation Coroutine/[Resumable function] library

GitHub

This does not use C++20 coroutines. It is a managed state machine style coroutine library, a modern take on **Duff's device**. This is supposed to work with C++17 compilers. Why, because C++20 coroutines:

- are difficult to develop with.
- make nested `co_await` clumsy and have large memory overhead to do it right.
- **HALO** optimization seems to regularly fail.
- require heap allocation to be available in the general case, making them unusable on many systems.

Reddit

I do not buy any of these anti-coroutine arguments (maybe except for the fact that HALO can fail in some situations – but that is an engineering problem in the compiler). ➡

A Buffers Library for C++20

- Colby Pike

Unpopular opinion: It's ok to derive from STL types/classes

- Reddit

Why I like C++ attributes

- Marius Bancila

C++ STL-Like Algorithm Libraries

- Conor Hoekstra

Library: Libcu++ - the NVIDIA Standard Library

- GitHub
 - Reddit

Recursive lambdas in C++

- Philip Trettner

id Tech – Game engines written in C++

- Engines and games
 - Reddit

Fabien Sanglard's game engine code reviews

- Quake
- Quake 2
- Quake 3
- Doom 3

See also

- Doom Eternal study

Named Parameters in C++20

- Peter Dimov
 - [Reddit](#)

C++ in Visual Studio Code reaches version 1.0

- Julia Reid
 - Reddit

Book: C++ Best Practices by Jason Turner

- [LeanPub](#) (min. \$9.99)

C++ Talk Index

- Website
 - Reddit

vcpkg: Accelerate your team development environment with binary caching and manifests

- Microsoft
 - Reddit

Related

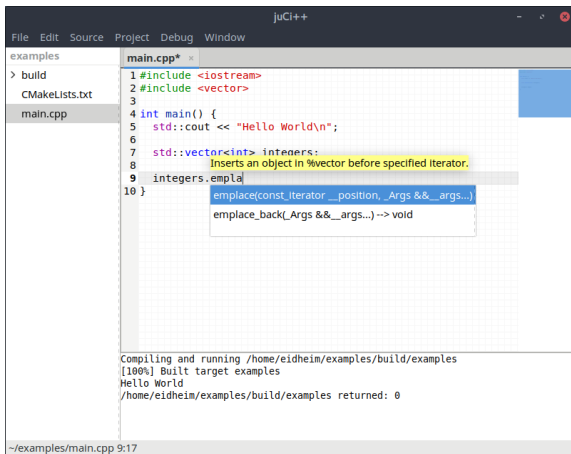
Why is it such an abysmal pain to use libraries in C++ compared to pretty much anything else?

The terrible **size_t**

- Reddit

juCi++: a lightweight, cross-platform IDE

- GitLab
- Installation guide



The screenshot displays the juCi++ IDE interface. The top menu bar includes 'File', 'Edit', 'Source', 'Project', 'Debug', and 'Window'. On the left, a project explorer shows a folder named 'examples' containing files 'build', 'CMakeLists.txt', and 'main.cpp'. The 'main.cpp' file is open in the editor, showing the following code:

```
1 #include <iostream>
2 #include <vector>
3
4 int main() {
5     std::cout << "Hello World\n";
6
7     std::vector<int> integers;
8     // Inserts an object in %vector before specified iterator.
9     integers.emplace
10 }
```

A tooltip is visible over the `emplace` call, showing its signature: `emplace(const_iterator __position, _Args && __args...)` and `emplace_back(_Args && __args...) -> void`.

At the bottom, a terminal window shows the output of a build and run command:

```
Compiling and running /home/eidheim/examples/build/examples
[100%] Built target examples
Hello World
/home/eidheim/examples/build/examples returned: 0
```

The status bar at the bottom indicates the current file and line: `~/examples/main.cpp 9:17`.

Figure 1: Screenshot

Library: cpp-lazy

- [GitHub](#)

Cpp-lazy is a fast and easy lazy evaluation library for C++14/17/20.

Lazy evaluation is an evaluation strategy which holds the evaluation of an expression until its value is needed. In this library, all the iterators are lazy evaluated.

This library is not a replacement for `ranges::v3` but rather a (smaller) alternative.

Library: Crypto3

- Home page
- Boost mailing list announcement
- GitHub
- Reddit

Library: AAA - Auxiliary Arithmetic Algorithms

- [GitHub](#) (MIT)
- [Docs](#)