Concurrency In C

Concurrency Vs Parallelism! - Concurrency Vs Parallelism! 4 Minuten, 13 Sekunden - Animation tools: Adobe Illustrator and After Effects. Checkout our bestselling System Design Interview books: Volume 1: ...

Intro

Concurrency

Parallelism

Practical Examples

Introduction To Threads (pthreads) | C Programming Tutorial - Introduction To Threads (pthreads) | C Programming Tutorial 13 Minuten, 39 Sekunden - An introduction on how to use threads in **C**, with the pthread.h library (POSIX thread library). Source code: ...

Introduction To Threads

pthreads

computation

Anthony Williams — Concurrency in C++20 and beyond - Anthony Williams — Concurrency in C++20 and beyond 1 Stunde, 6 Minuten - The evolution of the C++ **Concurrency**, support doesn't stop there though: the committee has a continuous stream of new ...

Introduction

Overview

New features

Cooperative cancellation

Dataflow

Condition Variable

Stop Token

StopCallback

JThread

Stop Source

J Thread

J Thread code

Latches

Stop Source Token

Barriers

Semaphores

Binary semaphores

Lowlevel weighting

Atomic shared pointers

semaphore

atomic shared pointer

atomic ref

new concurrency features

executives

receiver

how does a Mutex even work? (atoms in the computer??) - how does a Mutex even work? (atoms in the computer??) 4 Minuten, 17 Sekunden - Thread synchronization is easier said then done. If you use a library like pthread for multithreading and mutexes, then you're ...

Concurrency in C++20 and Beyond - Anthony Williams [ACCU 2021] - Concurrency in C++20 and Beyond - Anthony Williams [ACCU 2021] 1 Stunde, 23 Minuten - ------ **C**,++20 is set to add new facilities to make writing **concurrent**, code easier. Some of them come from the previously published ...

Cooperative Cancellation

Low-level waiting for atomics

Atomic smart pointers

Stackless Coroutines

Parallelism vs Concurrency - Parallelism vs Concurrency 6 Minuten, 30 Sekunden - Source code can be found here: https://code-vault.net/lesson/zm4m05v1h9:1609433599531 ===== Support us through our store ...

Parallelism

Concurrency

Examples

Why Are Threads Needed On Single Core Processors - Why Are Threads Needed On Single Core Processors 16 Minuten - In this video we explore the fundamentals of threads. Questions and business contact: contact.coredumped@gmail.com Sponsor ...

Master C# async/await with Concurrency Like a Senior - Master C# async/await with Concurrency Like a Senior 42 Minuten - Unleash the Power of C# **Concurrency**,! DIVE INTO THE WORLD OF C#

CONCURRENCY,! ? Are you ready to take ...

Introduction

Agenda

Concurrency in theory

Concurrency implementations

MultiThreading

Parallel Programming

Asynchronous Programming

Reactive Programming

Async/Await like a Senior

Decompiling to AsyncStateMachine

No Thread?

Structured Concurrency: Writing Safer Concurrent Code with Coroutines... - Lewis Baker - CppCon 2019 - Structured Concurrency: Writing Safer Concurrent Code with Coroutines... - Lewis Baker - CppCon 2019 48 Minuten - Structured **Concurrency**,: Writing Safer **Concurrent**, Code with Coroutines and Algorithms http://CppCon.org — Discussion ...

Introduction

Structured concurrency

Object lifetimes

Destructors

Async Operations

Why is this hard

The solution

Making a Coroutine start lazily

Using an algorithm

Error handling

Cancellation

The Future

Summary

Questions

Concurrency Patterns - Rainer Grimm - CppCon 2021 - Concurrency Patterns - Rainer Grimm - CppCon 2021 1 Stunde, 2 Minuten - The main concern when you deal with **concurrency**, is shared, mutable state or as Tony Van Eerd put it in his CppCon 2014 talk ...

C++ std::thread Introduction - C++ std::thread Introduction 1 Stunde, 30 Minuten - The basics of using the C++ std::thread library. Course web site: http://faculty.cs.niu.edu/~winans/CS463 Music used in this video ...

Asynchronous vs Multithreading and Multiprocessing Programming (The Main Difference) - Asynchronous vs Multithreading and Multiprocessing Programming (The Main Difference) 15 Minuten - In this video, I explain the main difference between asynchronous execution, multithreading and multiprocessing programming.

Synchronous

Multithreading a process have many threads shared resources

Async io single thread

Multiprocessing

CppCon 2018: Geoffrey Romer “What do you mean \"thread-safe\"?” - CppCon 2018: Geoffrey Romer “What do you mean \"thread-safe\"?” 53 Minuten - In this talk, I will present the simple yet precise vocabulary we use for talking about these issues at Google: an \"API race\" happens ...

Introduction

POSIX defines threadsafe

Code example

Who thinks this code is safe

Herb Sutter 2012

API races

API races on shared widgets

Threadsafe types

Mutexes

Thread compatibility

Const methods

If whichit isnt threadsafe

No matter what

Broken constant semantics

API race

Thread hostile

Example

General principle

Nonconstants

Shared Data

Application

Reentrant

What is an API race

Special case API race

Standard threadsafe

More practical advice

State function

Square bracket operator

C++ Code Smells - Jason Turner - CppCon 2019 - C++ Code Smells - Jason Turner - CppCon 2019 58 Minuten - We will ask: * What are the most important code smells? * Does it simplify the way we write code? — Jason Turner Developer ...

Intro

Jason Turner

C++ Best Practices

Raw Loops - Sean Parent

Multi-Step Functions

Code With Conversions

Code Smells

Let's Update This Code Sample #2

Missing and Ignored Compiler Warnings

2. Missing const and constexpr, Misplaced

Weak Types And Casts

Bonus Code Review

The Untold Story of Golang - The Untold Story of Golang 12 Minuten, 24 Sekunden - What if **C**, was reborn for the cloud era? Faster than Java, cleaner than Python and easier than C++ That is Go. A language so ...

Prologue

Chapter 1: The Slowdown at Google

Chapter 2: Bootstrapping a Language from Scratch

Sponsor

Chapter 3: The Art of Subtraction

Chapter 4: Concurrency as a First-Class Citizen

Chapter 5: Go’s Rise in the Cloud Era

Chapter 6: Go in the Age of AI and Generics

Conclusion: Simplicity That Scaled

Undefined Behavior in C++: A Performance Viewpoint - Fedor Pikus - CppNow 2022 - Undefined Behavior in C++: A Performance Viewpoint - Fedor Pikus - CppNow 2022 1 Stunde, 36 Minuten - Undefined Behavior in C++: A Performance Viewpoint - Fedor Pikus - CppNow 2022 This talk is about You-Know-What, the thing ...

What is Undefined Behavior (UB) in C++?

UB Lore, according to comp.std.c

What does UB really do?

How real is the danger?

Why have UB at all?

Undefined vs unspecified

Does it really happen?

Reasoning from UB

Concurrency in C++: A Programmer’s Overview (part 1 of 2) - Fedor Pikus - CppNow 2022 - Concurrency in C++: A Programmer’s Overview (part 1 of 2) - Fedor Pikus - CppNow 2022 1 Stunde, 34 Minuten - Concurrency, in C++: A Programmer's Overview (part 1 of 2) - Fedor Pikus - CppNow 2022 This talk is an overview of the C++ ...

What is a semaphore? How do they work? (Example in C) - What is a semaphore? How do they work? (Example in C) 13 Minuten, 27 Sekunden - What is a semaphore? How do they work? (Example in **C**,) // Semaphores cause a lot of confusion for students, largely because ...

Semaphores

Synchronization Primitives

Weight and Post

What Are Semaphores Good for

Binary Semaphores

Important Differences

Why We Need Semaphores

Ori Lahav — Weak memory concurrency in C/C++11 - Ori Lahav — Weak memory concurrency in C/C++11 59 Minuten - In this talk Ori will introduce the formal underpinning of the **C**,/C++ **concurrency**, model from 2011 and the key ideas behind it.

Load buffering in ARM

Compilers stir the pot

Transformations do not suffice

Overview

Basic ingredients of execution graph consistency

Sequential Consistency (SC)

The hardware solution

Certified promises

The full model

C++11 Concurrency, Part 1 - C++11 Concurrency, Part 1 27 Minuten - Preliminaries, \"Hello Thread!,\" fork/join.

Introduction

Compilers

HelloThread

Thread CPP

Single Thread

Thread Barrier

Closure

An Introduction to Multithreading in C++20 - Anthony Williams - CppCon 2022 - An Introduction to Multithreading in C++20 - Anthony Williams - CppCon 2022 1 Stunde, 6 Minuten - Where do you begin when you are writing your first multithreaded program using **C**,++20? Whether you've got an existing ...

Introduction

Agenda

Why Multithreading

Amdahls Law

Parallel Algorithms

Thread Pools

Starting and Managing Threads

Cancelling Threads

Stop Requests

Stoppable

StopCallback

JThread

Destructor

Thread

References

Structure semantics

Stop source

Stop source API

Communication

Data Race

Latch

Constructor

Functions

Tests

Barrier

Structural Barrier

Template

Completion Function

Barrier Function

Futures

Promise

Future

Waiting

Promises

Exception

Async

Shared Future

Mutex

Does it work

Explicit destruction

Deadlock

Waiting for data

Busy wait

Unique lock

Notification

Semaphore

Number of Slots

Atomics

LockFree

Summary

Concurrency in C++20 and Beyond - Anthony Williams - CppCon 2019 - Concurrency in C++20 and Beyond - Anthony Williams - CppCon 2019 1 Stunde, 3 Minuten - The evolution of the C++ **Concurrency**, support doesn't stop there though: the committee has a continuous stream of new ...

Concurrency Features

Cooperative Cancellation

Stop Source

Stop Callback

New Synchronization Facilities

Testing Multi-Threaded Code

Barriers

Semaphores

The Little Book of Semaphores

Atomic Smart Pointers

Smart Pointers

Benefit from Concurrency

Future Standards

Thread Pool

Basic Requirements

Proposals for Concurrent Data Structures

Concurrent Hash Maps

Safe Memory Reclamation

Safe Memory Reclamation Schemes

Proposals for a Concurrent Priority Queue

Performance Penalty

Concurrency in C - pthreads - Concurrency in C - pthreads 8 Minuten, 30 Sekunden - This video walks through using pthreads with gcc. 0:08 - Compiling code with the -lpthread option 0:35 - The count_to_ten ...

Compiling code with the -lpthread option

The count_to_ten function that we will run in multiple threads

Running multiple copies of the function consecutively

Running multiple copies of the function concurrently using pthreads (pthread_create)

Threads (create_pthread) vs processes (fork)

Using pthread_join to wait for the threads to complete

Back to Basics: Concurrency - Mike Shah - CppCon 2021 - Back to Basics: Concurrency - Mike Shah - CppCon 2021 1 Stunde, 2 Minuten - In this talk we provide a gentle introduction to **concurrency**, with the modern C++ std::thread library. We will introduce topics with ...

Who Am I

Foundations of Concurrency

Motivation

Performance Is the Currency of Computing

What Is Concurrency

A Memory Allocator

Architecture History

Dennard Scaling

When Should We Be Using Threads

C plus Standard Thread Library

The Standard Thread Library

First Thread Example

Thread Join

Pitfalls of Concurrent Programming

Starvation and Deadlock

Interleaving of Instructions

Data Race

Mutex

Mutual Exclusion

What Happens if the Lock Is Never Returned

Deadlock

Fix Deadlock

Lock Guard

Scope Lock

Condition Variable

Thread Reporter

Unique Lock

Recap

Asynchronous Programming

Async

Buffered File Loading

Thread Sanitizers

Co-Routines

Memory Model

Common Concurrency Patterns

Producer Consumer

Parallel Algorithms

Further Resources

Back to Basics: Concurrency - Arthur O'Dwyer - CppCon 2020 - Back to Basics: Concurrency - Arthur O'Dwyer - CppCon 2020 1 Stunde, 4 Minuten - --- Arthur O'Dwyer is the author of \"Mastering the **C**,++17 STL\" (Packt 2017) and of professional training courses such as \"Intro to ...

Intro

Outline

What is concurrency?

Why does C++ care about it?

The hardware can reorder accesses

Starting a new thread

Joining finished threads

Getting the \"result\" of a thread

Example of a data race on an int

Logical synchronization

First, a non-solution: busy-wait

A real solution: std::mutex

Protection must be complete

A \"mutex lock\" is a resource

Metaphor time!

Mailboxes, flags, and cymbals

condition_variable for \"wait until\"

Waiting for initialization **C**,++11 made the core ...

Thread-safe static initialization

How to initialize a data member

Initialize a member with once_flag

C++17 shared_mutex (R/W lock)

Synchronization with std:: latch

Comparison of C++20's primitives

One-slide intro to C++11 promise/future

The \"blue/green\" pattern (write-side)

ETEC3702 - Class 20 - Concurrency in C and C++ - ETEC3702 - Class 20 - Concurrency in C and C++ 31 Minuten - Learn about **concurrency in C**, and C++. Learn about POSIX Threads and using the pthreads library for creating and managing ...

Create a thread

Join a thread

Pthreads example

Example Output

Pthreads Synchronization

Pthreads mutexes

Pthreads condition variables (wait)

Pthreads condition variables (signal)

Simple Threading in C++11

Synchronization in C++11

Other Concurrency Features in C++11 and beyond...

Threading Tutorial #1 - Concurrency, Threading and Parallelism Explained - Threading Tutorial #1 - Concurrency, Threading and Parallelism Explained 11 Minuten, 34 Sekunden - In this threading tutorial I will be discussing what a thread is, how a thread works and the difference and meaning behind ...

Intro

What is threading

One Core Model

Suchfilter

Tastenkombinationen

Wiedergabe

Allgemein

Untertitel

Sphärische Videos

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