Pragmatic Unit Testing In C

CppCon 2014: Matt Hargett \"Pragmatic Unit Testing in C++\" - CppCon 2014: Matt Hargett \"Pragmatic Unit Testing in C++\" 1 hour, 7 minutes - http://www.cppcon.org — Presentation Slides, PDFs, Source Code and other presenter materials are available at: ...
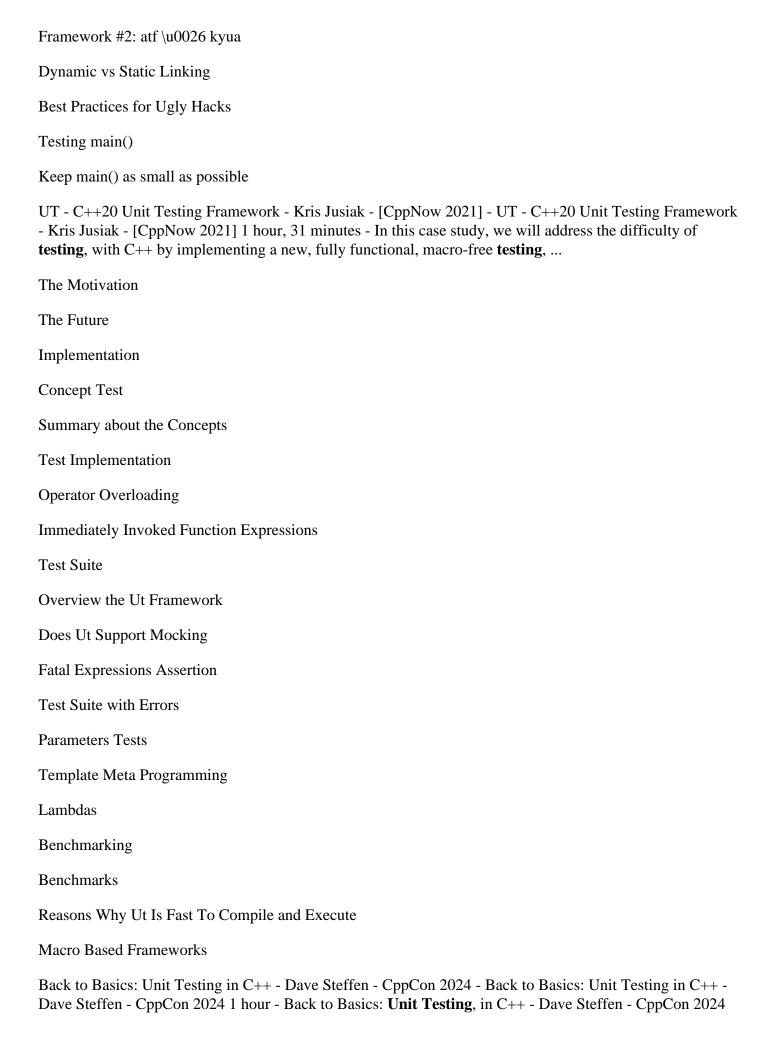
Introduction

Summary

What unit testing is not

Optimize for readability

Readability Example: cgreen

Mocking: Runtime

Mocking: Side-by-side

Breaking Dependencies: Compile Time

Move Body: Template functions

Breaking Dependencies: Preprocessor

Breaking Dependencies: Redefine symbols

Breaking Dependencies: Link time

Breaking Dependencies: Static class

Runtime Performance (cont'd)

CppCon 2015: Matt Hargett "Advanced Unit Testing in C \u0026 C++" - CppCon 2015: Matt Hargett "Advanced Unit Testing in C \u0026 C++" 1 hour - http://www.Cppcon.org — Presentation Slides, PDFs, Source Code and other presenter materials are available at: ...

Intro

Summary

Agenda

For multi-taskers

Brief Refresher

Simple Unit Test in C: Start with a Bug

Simple Unit Test in C: Stub collaborators

Simple Unit Test: Running

Simple Unit Test: Mocking Example

Mocking: Link time Cgreen also supplies a mock framework

Mocking: Runtime

Unit Testing Kernel Code

(Linux) Kernel User-land Shim

Note

Mocking stdlib

Our impl and the test we want to write

Satisfying minimal dependencies

Mocking Singletons

Common header, our impl

Link-time mock wraps mockitopp

Mocking Factories

Deep Factory Mocking Example

Deploying a test framework

You Can't Unit Test C, Right? - You Can't Unit Test C, Right? 23 minutes - Benno Rice http://lca2018.linux.org.au/schedule/presentation/114/ **Testing**, is a wonderful thing. Code with good **tests**, is so much ...

Intro

Why is testing awesome?

Automated testing is awesome!

What's a unit?

What else defines a unit test?

Pragmatism \u0026 Coverage

The Mechanics of Automated Unit Testing

Isn't this about C?

Static Compilation

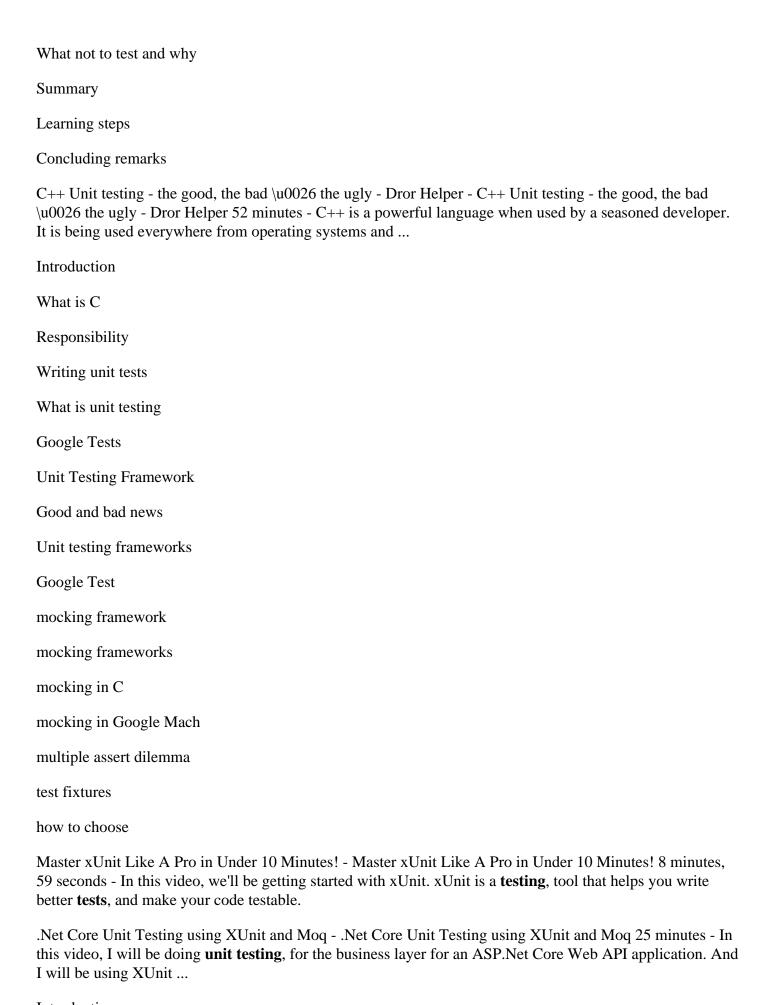Mocking \u0026 Stubbing

Framework #1: check

Framework #2: atf \u0026 kyua

Dynamic vs Static Linking

Best Practices for Ugly Hacks

Testing main()

Keep main() as small as possible

UT - C++20 Unit Testing Framework - Kris Jusiak - [CppNow 2021] - UT - C++20 Unit Testing Framework - Kris Jusiak - [CppNow 2021] 1 hour, 31 minutes - In this case study, we will address the difficulty of **testing**, with C++ by implementing a new, fully functional, macro-free **testing**, ...

The Motivation

The Future

Implementation

Concept Test

Summary about the Concepts

Test Implementation

Operator Overloading

Immediately Invoked Function Expressions

Test Suite

Overview the Ut Framework

Does Ut Support Mocking

Fatal Expressions Assertion

Test Suite with Errors

Parameters Tests

Template Meta Programming

Lambdas

Benchmarking

Benchmarks

Reasons Why Ut Is Fast To Compile and Execute

Macro Based Frameworks

Back to Basics: Unit Testing in C++ - Dave Steffen - CppCon 2024 - Back to Basics: Unit Testing in C++ - Dave Steffen - CppCon 2024 1 hour - Back to Basics: **Unit Testing**, in C++ - Dave Steffen - CppCon 2024

--- **Unit Testing**, is a big, complicated subject. With good advice ...

Vladimir Khorikov — Pragmatic unit testing - Vladimir Khorikov — Pragmatic unit testing 59 minutes - Unit testing, is a vast topic. The industry has accumulated a huge amount of information about it during the past two decades.

About Myself

What's the Goal of Unit Testing

Important Benefit of Having a Unit Test Suite

Coverage Metrics

The Pragmatic Approach to Doing Testing

Protection against Regressions

Resistance to Refactoring

False Positive

What Causes False Positive

Maintainability

End-to-End Tests

Brittle Tests

Test Pyramid

Types of Unit Testing

Types of Unit Testing

State Based Testing

Collaboration Based Testing

Output Based Testing

Observable Behavior

Observable Behavior of the Application Services Layer

Maintaining Backward Compatibility

Examples

Three Types of Unit Testing

General Guideline

Sample Project
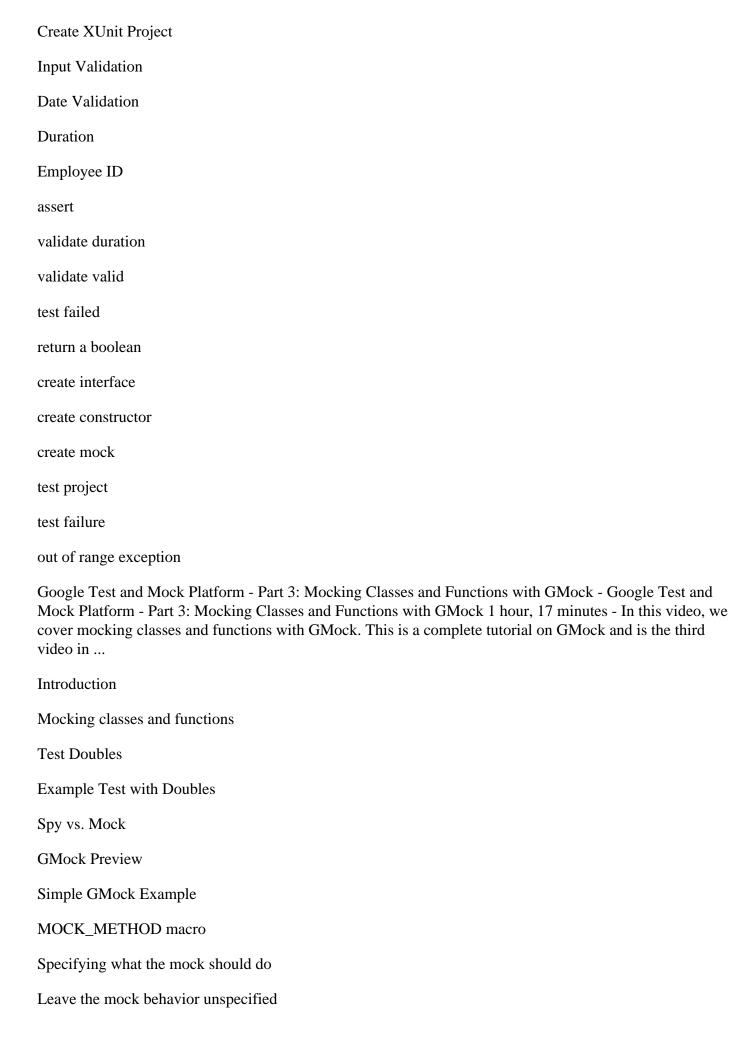
Main View Model

Overall Architecture

Components of Available Tests

The Unit Tests Strike Back: Testing the Hard Parts - Dave Steffen - CppCon 2021 - The Unit Tests Strike Back: Testing the Hard Parts - Dave Steffen - CppCon 2021 1 hour, 1 minute - But in real life, it's rarely possible to meet all these goals at the same time, and some situations make writing **unit tests**, difficult or ...

Intro

Overview

Plan A Fails

The Problem

Buggy Nondeterminism

Plan B

Plan C

Summary

Fix the interface

Design mistake

Whitebox test

Friend class

How did we get here

What is Plan Omega

Conclusion

QA

Unit Testing Exceptions in C# [EN] - Unit Testing Exceptions in C# [EN] 11 minutes, 33 seconds - Using **unit tests for**, exceptions in C# **Unit Tests**,: https://www.youtube.com/watch?v=bhgEYLahrAk Repository: ...

Cantata - The Unit Testing Tool for C/C++ - Cantata - The Unit Testing Tool for C/C++ 52 minutes - Cantata provides advanced high productivity techniques, allowing developers to dynamically prove their code with intelligent **unit**, ...

Introduction

Software Development Lifecycle

Open Source Tools

Cantata on Host and Target

What Makes Cantata Different

Unit Isolation

stub

wrappers

main differences

integrated code coverage

legacy test cases

autotest parse

certification

generating test scripts

test script manager

account interface

console output

Wrapper

Before After

Whats next

Back to Basics: C++ Testing - Amir Kirsh - CppCon 2022 - Back to Basics: C++ Testing - Amir Kirsh - CppCon 2022 1 hour, 2 minutes - Proper developer **testing**, is one of the most important steps in software development, and yet sometimes tend to be neglected, ...

The Science of Unit Tests - Dave Steffen - CppCon 2020 - The Science of Unit Tests - Dave Steffen - CppCon 2020 55 minutes - But what are the fundamentals that lie beneath all the good advice? What principles should guide our **testing**,? This talk will start ...

Introduction

Previous CppCon talks

Properties of Unit Tests

Common Solutions

Whitebox Testing

BehaviorDriven Testing

The Luminiferous Ether

Empirical Science

Experimental Science

Experimental Setup

Precision

Alternative Solutions

Accuracy

Conclusion

How to write a simple mock class in C++ using GMock framework - How to write a simple mock class in C++ using GMock framework 17 minutes - This is a very short tutorial of how to write a simple mock class in C++ using Google GMock framework and how to simple use it in ...

Test Driven C++ - Phil Nash - CppCon 2020 - Test Driven C++ - Phil Nash - CppCon 2020 1 hour, 1 minute - We know that **testing**, is important, but writing **tests**, is hard and takes time - and can be demotivating when you want to hack out ...

Mocking in C# Unit Tests - How To Test Data Access Code and More - Mocking in C# Unit Tests - How To Test Data Access Code and More 1 hour, 2 minutes - Unit tests, are great, but how do you test your data access? You sure don't want to actually delete records when you are testing the ...

Intro

Getting started: demo application code and setup

Problems with testing methods that manipulates with external stuff (database edits, e-mail senders etc)

Mocking explained

Writing tests with mocking

Adding references for testing with MOCK

Using statement

AutoMock.GetLoose() vs AutoMock.GetStrict()

Using AutoMock: Writing the Unit Test with mocking

Refactoring method that's under a UnitTest

Checking data: comparing two objects

Testing method that returns void

Testing SQl call modification

Recap

Advice for beginners

What not to test and why

Summary

Learning steps

Concluding remarks

C++ Unit testing - the good, the bad \u0026 the ugly - Dror Helper - C++ Unit testing - the good, the bad \u0026 the ugly - Dror Helper 52 minutes - C++ is a powerful language when used by a seasoned developer. It is being used everywhere from operating systems and ...

Introduction

What is C

Responsibility

Writing unit tests

What is unit testing

Google Tests

Unit Testing Framework

Good and bad news

Unit testing frameworks

Google Test

mocking framework

mocking frameworks

mocking in C

mocking in Google Mach

multiple assert dilemma

test fixtures

how to choose

Master xUnit Like A Pro in Under 10 Minutes! - Master xUnit Like A Pro in Under 10 Minutes! 8 minutes, 59 seconds - In this video, we'll be getting started with xUnit. xUnit is a **testing**, tool that helps you write better **tests**, and make your code testable.

.Net Core Unit Testing using XUnit and Moq - .Net Core Unit Testing using XUnit and Moq 25 minutes - In this video, I will be doing **unit testing**, for the business layer for an ASP.Net Core Web API application. And I will be using XUnit ...

Introduction

Create XUnit Project

Input Validation

Date Validation

Duration

Employee ID

assert

validate duration

validate valid

test failed

return a boolean

create interface

create constructor

create mock

test project

test failure

out of range exception

Google Test and Mock Platform - Part 3: Mocking Classes and Functions with GMock - Google Test and Mock Platform - Part 3: Mocking Classes and Functions with GMock 1 hour, 17 minutes - In this video, we cover mocking classes and functions with GMock. This is a complete tutorial on GMock and is the third video in ...

Introduction

Mocking classes and functions

Test Doubles

Example Test with Doubles

Spy vs. Mock

GMock Preview

Simple GMock Example

MOCK_METHOD macro

Specifying what the mock should do

Leave the mock behavior unspecified

What is ON_CALL macro

What is EXPECT_CALL macro

Cardinality in EXPECT_CALL

Uninteresting calls

NiceMock and StrictMock

Unexpected vs uninteresting calls

Sequencing in EXPECT_CALL

GMock Actions

GMock Actions: Return a value

GMock Actions: Side effects

GMock Actions: Invoke a function

Custom GMock Actions

Sticky rules in GMock

Checkpoints

Mocking Private Methods

Mocking Overloaded Methods

Mocking Template Classes

Mocking Non-Virtual Classes

Mocking Free Functions

Delegating to Fake and Real in GMock

Pragmatic Testing in iOS - 13: Implementing APR Calculation Fails for SSN with no Credit Score - Pragmatic Testing in iOS - 13: Implementing APR Calculation Fails for SSN with no Credit Score 14 minutes, 9 seconds - ... **unit test**, because we are actually you know stubbing everything out uh the next part is we also need to do integration testing and ...

Pragmatic Unit Testing in Java 8 with JUnit - Pragmatic Unit Testing in Java 8 with JUnit 1 minute, 53 seconds - From www.pragprog.com: The **Pragmatic**, Programmers classic is back! Freshly updated for modern software development, ...

Effective Unit Testing by Eliotte Rusty Harold - Effective Unit Testing by Eliotte Rusty Harold 48 minutes - You've been bitten by the **testing**, bug, are thoroughly **test**, infected. Excellent! You're undoubtedly producing more robust, less ...

Intro

Why do we write unit tests?

Eliminate everything that makes input or output unclear or contingent

Why Unit Tests?

Tests and Thread Safety

The Two Least Known Facts of Unit Testing

1. Tests do not share instance data

2. You can have many test classes per model class.

Speed

Passing tests should produce no output

Failing tests should produce clear output

Flakiness

System Skew

Avoid Conditional Logic in Tests

Refactoring

Development Practices

Final Thoughts

Test Driven Development for Embedded C (Pragmatic Programmers) - Test Driven Development for Embedded C (Pragmatic Programmers) 3 minutes, 36 seconds - Get the Full Audiobook for Free: https://amzn.to/4g4c6Cf Visit our website: http://www.essensbooksummaries.com \"**Test**, Driven ...

C# Unit Testing - Full Course - Write Unit Tests in C# like a pro! - C# Unit Testing - Full Course - Write Unit Tests in C# like a pro! 1 hour, 22 minutes - Want to TEST your SOFTWARE LIKE A PRO? The industry standard would be this! **Unit testing**, is THE way to professionally ...

Welcome to this 1.5 Hour C# Unit Testing course!

Introduction to unit testing

What is unit testing

Our first test

Refactoring and adding domain project

Our ALL ACCESS Subscription

Adding Web API Project

Test first approach

Assertion Message

Fluent Assertions

Test Conditions and prerequisites

Setting up flight project

Translating a scenario to test

Red green Refactor

Given When Then Pattern and Avoid Overbooking Scenario Discovery

Avoid Overbooking Scenario

Unit Testing C# Code - Tutorial for Beginners - Unit Testing C# Code - Tutorial for Beginners 44 minutes - 00:00 What is Automated **Testing**, 02:42 Benefits of Automated **Testing**, 05:20 Types of **Tests**, 09:22 **Test**, Pyramid 12:18 The Tooling ...

What is Automated Testing

Benefits of Automated Testing

Types of Tests

Test Pyramid

The Tooling

Source Code

Writing Your First Unit Test

Testing All the Execution Paths

Refactoring With Confidence

Using NUnit in Visual Studio

What is Test-Driven Development

Course Structure

Summary

LS33.2 - C - Unit Testing Introduction with Google Test - LS33.2 - C - Unit Testing Introduction with Google Test 11 minutes, 43 seconds - Press ENTER or type command to continue bash support/**test**,/**unit** ,/make.sh The **C**, compiler identification is GNU 7.4.0 The cxx ...

Unit Testing CQRS Handlers With Moq, Fluent Assertions, and xUnit - Unit Testing CQRS Handlers With Moq, Fluent Assertions, and xUnit 13 minutes, 53 seconds - In this video, I'm going to show you how to **unit test**, your CQRS command handlers. **Unit testing**, command handlers is very easy ...

What are we writing tests for?

Writing the first unit test

Accessing internal members in unit tests

Mocking dependencies with Moq

Writing assertions with FluentAssertions

Setting up mock methods

Writing the second unit test

Writing our third unit test

Writing our fourth unit test

What is Unit Testing? Why YOU Should Learn It + Easy to Understand Examples - What is Unit Testing? Why YOU Should Learn It + Easy to Understand Examples 10 minutes, 43 seconds - If you haven't come across **unit testing**, and wondering what it's all about then take some time and watch this video. It's a quick ...

C# Unit Testing Best Practices for Great Code Coverage - C# Unit Testing Best Practices for Great Code Coverage 17 minutes - In this video, I will show you how to **unit**,-**test**, domain services. **Unit testing**, domain services is easy since most dependencies will ...

Principles of Unit Testing With C++ - - Principles of Unit Testing With C++ - 1 hour, 15 minutes - Dave Steffen and Kris Jusiak present on the principles of **unit testing**, in C++. Don't miss this presentation where they will use Kris ...

Principles of Unit Testing

Outline

Properties of Good Tests: Correctness

Properties of Good Tests: Readability How do you test your unit tests?

Properties of Good Tests: Completeness

Properties of Good Tests: Demonstrability

Properties of Good Tests: Resilience

Testing Classes

The \"Black Box Conundrum\"

Common Solutions

Kevlin's Solution: \"Behavior Driven Testing\"

How does it work?

Behavior not Implementation

Unit Tests and Test Doubles like Mocks, Stubs \u0026 Fakes - Unit Tests and Test Doubles like Mocks, Stubs \u0026 Fakes 17 minutes - Rebranding - An Insightful Techie We can't touch, smell or feel the software to ascertain its quality. We have to rely on **Tests**, ...

Let's learn about Unit Tests Why?

Unit Tests, Mocks, Fakes, Stubs ??? What, How \u0026 Why

Why Write Unit Test??

What is meant by the Unit in Unit Testing ?

What is meant by the code that can execute Independently?

Unit Test are

Writing Unit Tests Arrange - Act - Assert (AAA)

Test Doubles

Mocks - Mocks replaces external interface

STUBS - Generates Predefined Outputs

THANK YOU For Learning about Unit Tests

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