





# xUnit Expanded

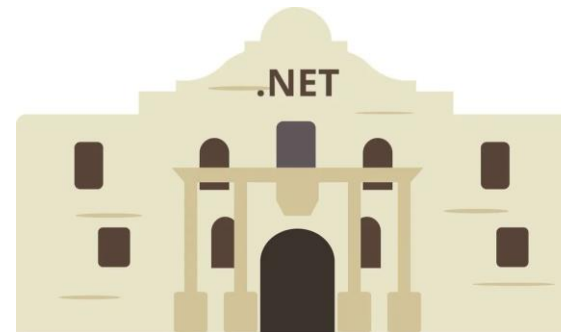
Better Testing with xUnit

Daniel Ward

Slides and source code at [daninacan.com](http://daninacan.com)

# Me

- ▶ Software consultant  LEAN TECHNIQUES
- ▶ Lean TECHniques
- ▶ Organizer of the San Antonio .NET User Group (SADNUG)
- ▶ Blog: [daninacan.com](http://daninacan.com)
- ▶  Twitter : @danielwarddev
- ▶  LinkedIn: [daniel-ward-dev](https://www.linkedin.com/in/daniel-ward-dev)



# Overview

- ▶ Why?
- ▶ Libraries
- ▶ Parallelism in xUnit
- ▶ Coding demo
  - ▶ Testing philosophy (naming, test structure, and more)
  - ▶ Setup tips
  - ▶ Assertion tips
  - ▶ Testing data tips
  - ▶ Testing with databases

Slides and source code at [daninacan.com](http://daninacan.com)

# Why?

“Always code as if the guy who ends up maintaining your code will be a violent psychopath who knows where you live.” - John F. Woods

- ▶ Lots of opinions online around testing
- ▶ Need to know what to look for to search for something
- ▶ Learned experience
- ▶ New to testing can be a short primer with some patterns
- ▶ Experienced testers can pick up at least one thing

# Libraries

- ▶ xUnit
- ▶ NSubstitute
- ▶ AutoFixture
- ▶ RichardSzalay.MockHttp
- ▶ FluentAssertions
  - ▶ `actualValue.Should().BeEquivalentTo(expectedValue)`
  - ▶ <https://fluentassertions.com/objectgraphs/>
- ▶ Testcontainers + Respawn

# Parallelism in xUnit

- ▶ Test collections
- ▶ By default, each class is a test collection
  - ▶ Tests within a collection run in sequence
  - ▶ Collections run parallel with one another
- ▶ Shared state
  - ▶ `IClassFixture<T>`
  - ▶ `[CollectionDefinition] + ICollectionFixture<T> + [Collection]`
- ▶ <https://xunit.net/docs/shared-context>
- ▶ <https://xunit.net/docs/running-tests-in-parallel>

Slides and source code at [daninacan.com](http://daninacan.com)

# Coding demo

Slides and source code at [daninacan.com](http://daninacan.com)




# Recap

- ▶ xUnit parallelism
- ▶ xUnit, Nsubstitute, Autofixture, FluentAssertions, RichardSzalay.MockHttp
- ▶ Testing philosophy + patterns
- ▶ CombinatorialData
- ▶ MemberData, TheoryData, ClassData
- ▶ BeEquivalentTo + extension method
- ▶ Testcontainers + Respawn

Slides and source code at [daninacan.com](http://daninacan.com)



# Thank you!

- ▶ [daninacan.com](https://daninacan.com)
- ▶   @danielwarddev
- ▶  daniel-ward-dev