

Verify is Worth 1000 Asserts

QUICKLY TESTING COMPLEX CODE WITH [APPROVALTESTS.NET](https://approvaltests.net)



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Agenda

Introduction

Complex Code

Golden Master

Approval Tests

Demos

Resources

Assumptions

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 - ❖ xUnit
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 - ❖ Beyond Compare
 - ❖ TortoiseDiff
 - ❖ VS Diff

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 - ❖ VS Diff
- ❖ Out of Scope (except in passing)
 - ❖ Unit vs Integration vs Regression
 - ❖ Moq vs FakeItEasy vs MS Fakes, etc...

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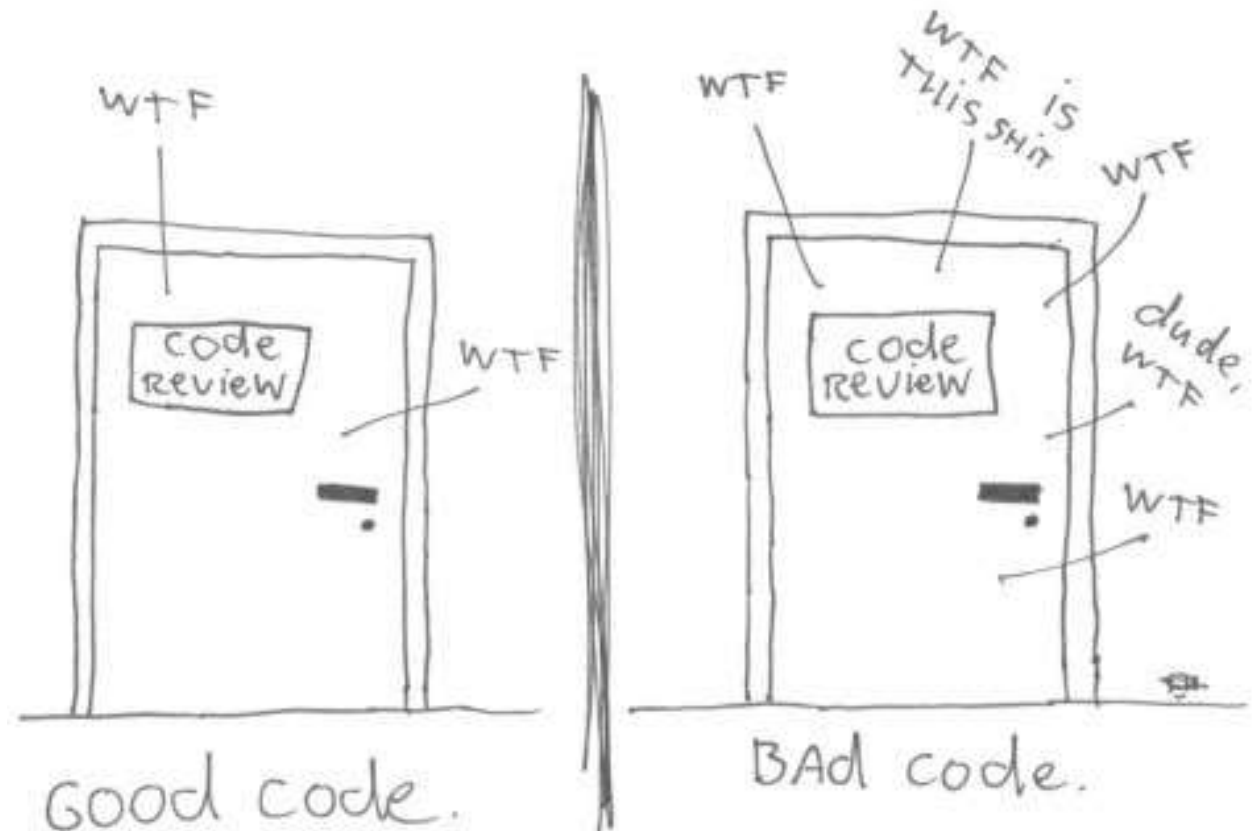
Complex Code

Difficult to Understand

Difficult to Change

Difficult to Test

The ONLY VALID MEASUREMENT
OF CODE QUALITY: WTFs/minute



Complex Code == Legacy Code

Developer Cycle

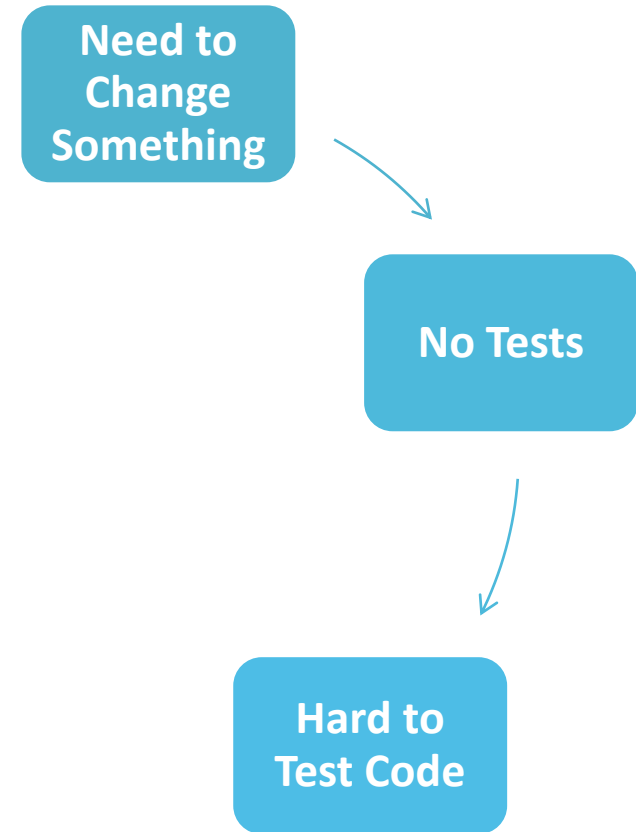
Need to
Change
Something

- Bug Report / Feature Request
- System providing business value

Complex Code == Legacy Code

Developer Cycle of DOOM!

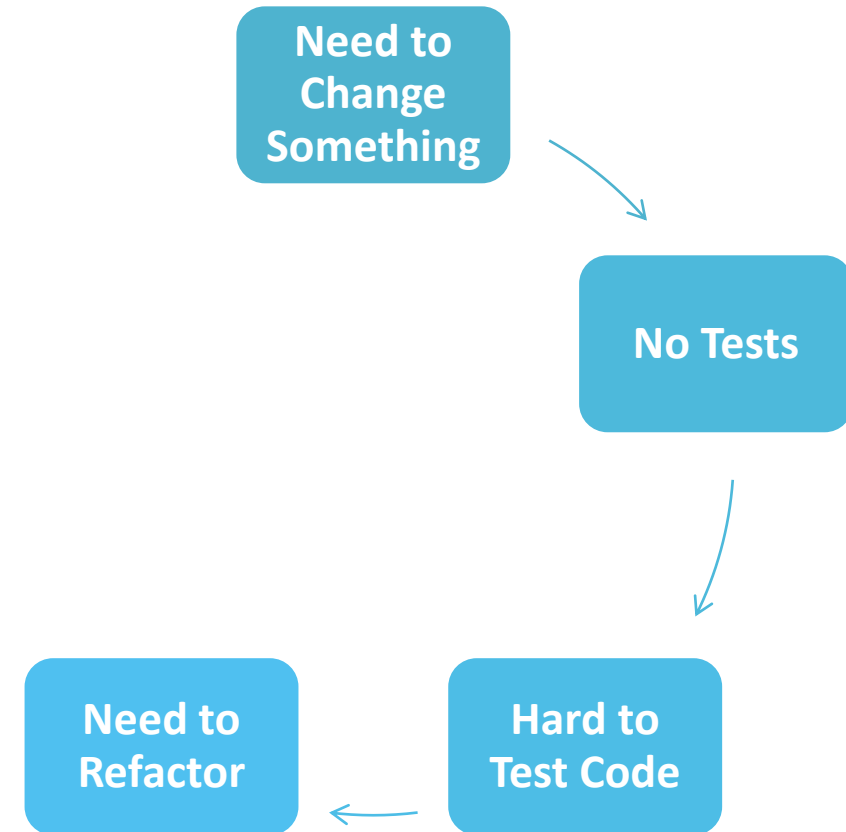
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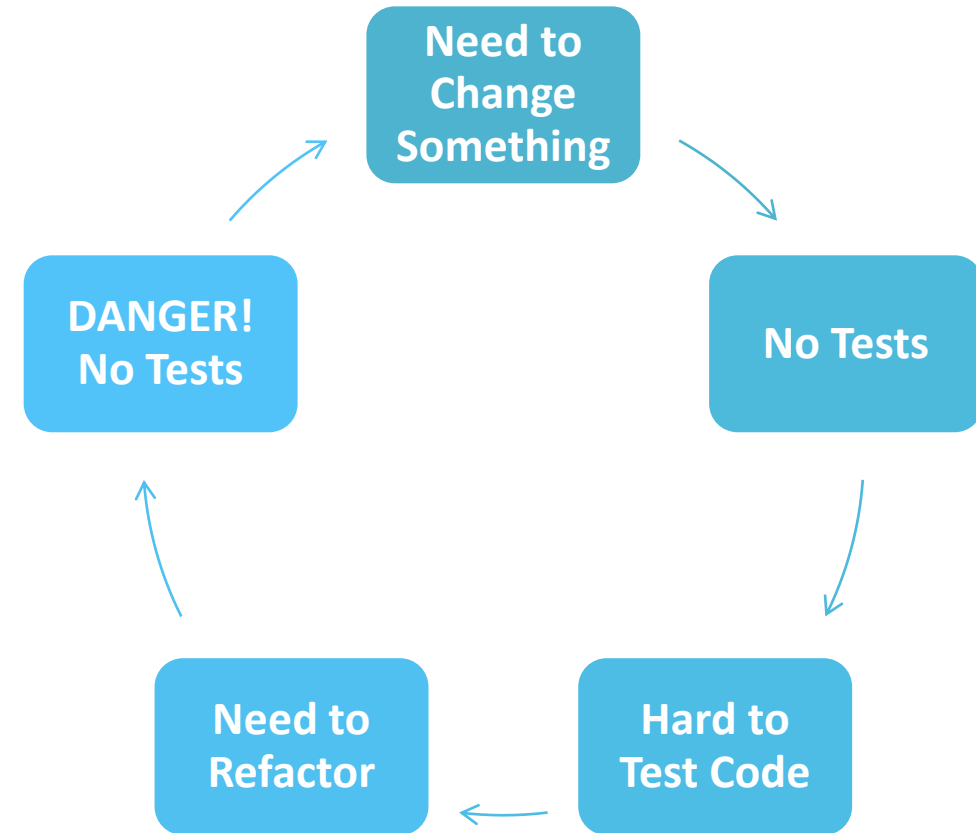
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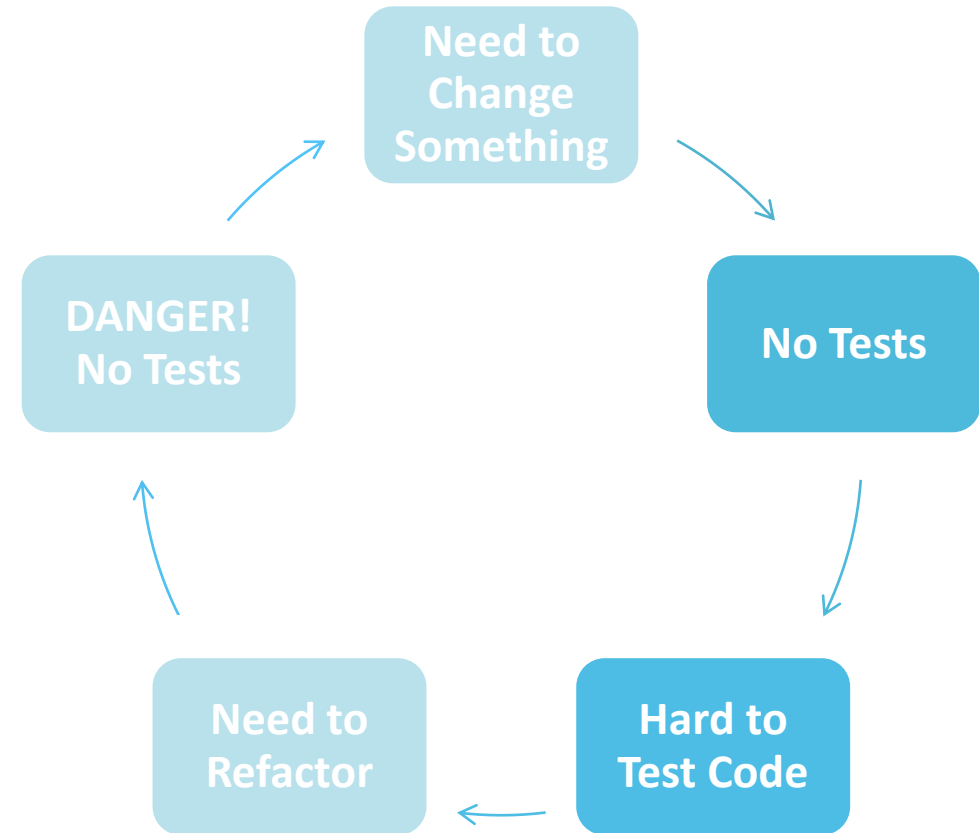
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Pin Down the Behavior



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Golden Master

```
22 [Fact]
23 public void TestSomeComplexFunction()
24 {
25     string expected = string.Empty;
26     string actual = ComplexFunction(someInput: "some input");
27     Assert.Equal(expected, actual);
28 }
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28 }
```

```
29 // assert
30 Assert.Equal(expected, actual);
31 }
```

expected = "", actual = "That was SOME INPUT!"

actual 🔍 "That was SOME INPUT!" ➡

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ApprovalTests

- ❖ Cross-Platform Framework (.NET, Java, Python, C++, NodeJS...)
- ❖ Open Source - Apache License, Version 2.0
- ❖ Actively Maintained – 7 + years, 900 + commits
- ❖ Core and Extensions Installable From NuGet

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What's Next?

- ❑ Reporters
 - ❑ FileLaunchReporter
 - ❑ ImageReporter
 - ❑ InLineTextReporter
 - ❑ QuietReporter
- ❑ Scrubber
 - ❑ ScrubberUtils.RemoveLinesContaining
 - ❑ HtmlScrubbers.ScrubAspViewState
- ❑ Extensions

	ApprovalTests by Llewellyn Falco & Dan Galkerson & Simon Cropp, 970K downloads A picture's worth a 1000 tests. Unit testing asserts can be difficult to use. Approval tests simplify this by taking a snapshot of the results, and confirming that they have not changed.	v4.5.0
	ApprovalUtilities by Llewellyn Falco & Dan Galkerson & Simon Cropp, 949K downloads Common helper classes developed with ApprovalTests	v4.5.0
	ApprovalTests.Wpf by Llewellyn Falco & Dan Galkerson, 3.61K downloads WPF extensions for ApprovalTests.	v4.0.0
	ApprovalTests.StatePrinter by Llewellyn Falco & Dan Galkerson, 2.68K downloads Utilities for approval object using StatePrinter (https://github.com/kbilsted/StatePrinter). For example: <code>StatePrinterApprovals.Verify(turtle);</code>	v3.0.18
	ApprovalTests.EntityFrameworkUtilities by Llewellyn Falco & Dan Galkerson, 1.22K downloads Utilities to use at runtime with EntityFramework to enable more testable code. Use the ApprovalTests.EntityFramework nuget in your tests.	v3.0.18
	ApprovalTests.Asp by Llewellyn Falco & Naveen Kumar Lokesh, 2.85K downloads Utilities for unit testing Asp and Asp.Mvc views and routes.	v1.2.0
	ApprovalTests.Rdlc by Llewellyn Falco & Dan Galkerson, 1.64K downloads Utilities for approval testing Rdlc Reports. Allows Rdlc image verification and utilities to populate datasets. For example:	v3.0.18
	ApprovalTests.WinForms by Llewellyn Falco & Dan Galkerson, 1.39K downloads Utilities for approval testing Windows Forms. Allows screenshot verification of Windows Forms. For example:	v3.0.18
	ApprovalTests.EntityFramework by Llewellyn Falco & Dan Galkerson, 1.18K downloads Easy way to tests queries generated by EntityFramework.	v3.0.18

Resources

Primary Site:

<https://approvaltests.com/>

- Documentation
- F.A.Q.
- Blog
- Tutorials

Creator Llewellyn Falco's YouTube Series – Getting Started with ApprovalTests.Net:

<http://bit.ly/ApprovalsPlaylist>

Pluralsight Course - Approval Tests for .NET by Jason Roberts:

<http://bit.ly/PluralsightApprovalTests>



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Thank You!