

# Introduction to Test First Development

David Starr

<http://www.pluralsight.com/>



# Outline

Introduction to Developer Testing

Unit Testing Frameworks

Test First Development

More Test First Practices

Introduction to Test First Development

# Introducing Developer Testing



From Developers

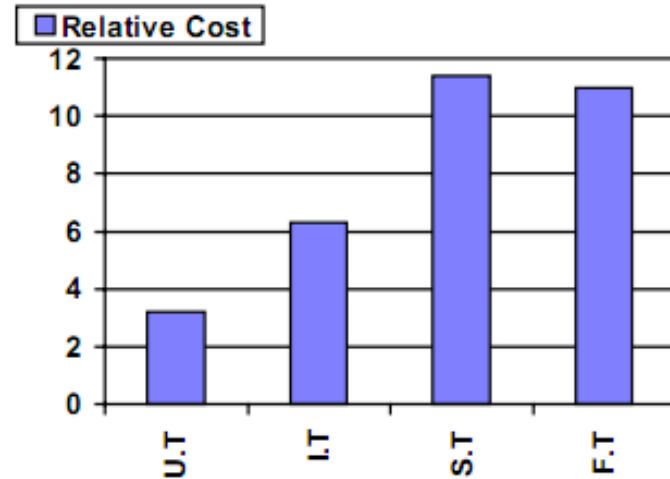
*"I don't test.  
I'm a developer.  
I create."*

From Managers

*"I don't want to pay  
developers to test.  
That's why I pay testers."*

# Benefits

- **Higher quality**
  - Fewer defects
- **Living documentation**
- **Well-crafted code**
- **Automatic regression harness**



***A unit test  
confirms functionality  
of a small unit of functionality  
or component  
in a larger system.***

# Unit Testing

## New Code vs. Existing Code

*Greenfield*

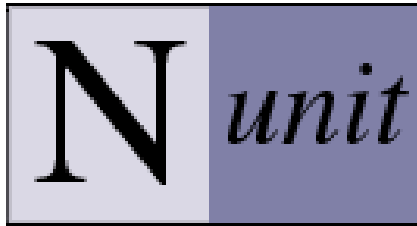
*Brownfield*

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# Unit Test Frameworks



# .NET Unit Testing Frameworks



Currently v2.5.7  
[www.nunit.com](http://www.nunit.com)

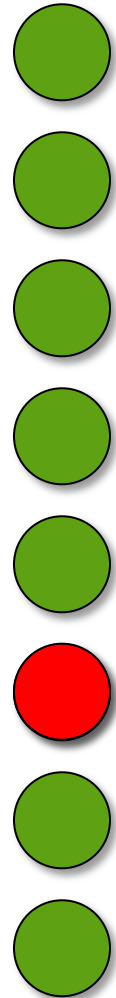
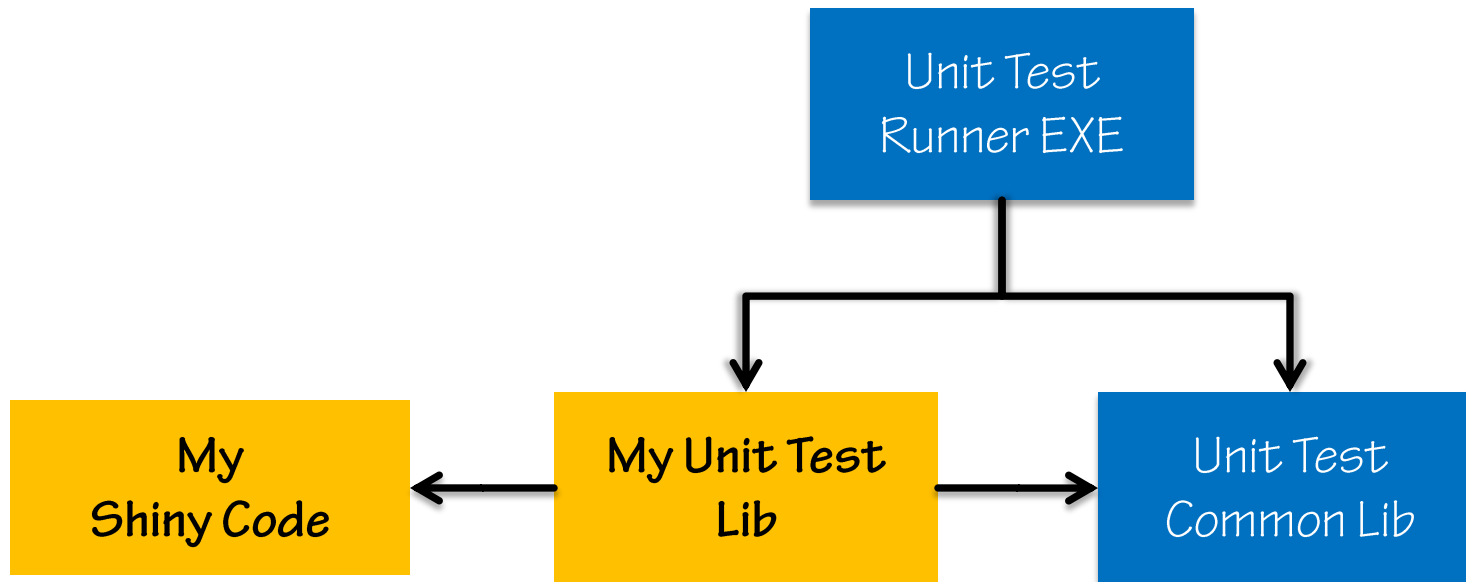


Currently v1.6.1  
[xunit.codeplex.com](http://xunit.codeplex.com)

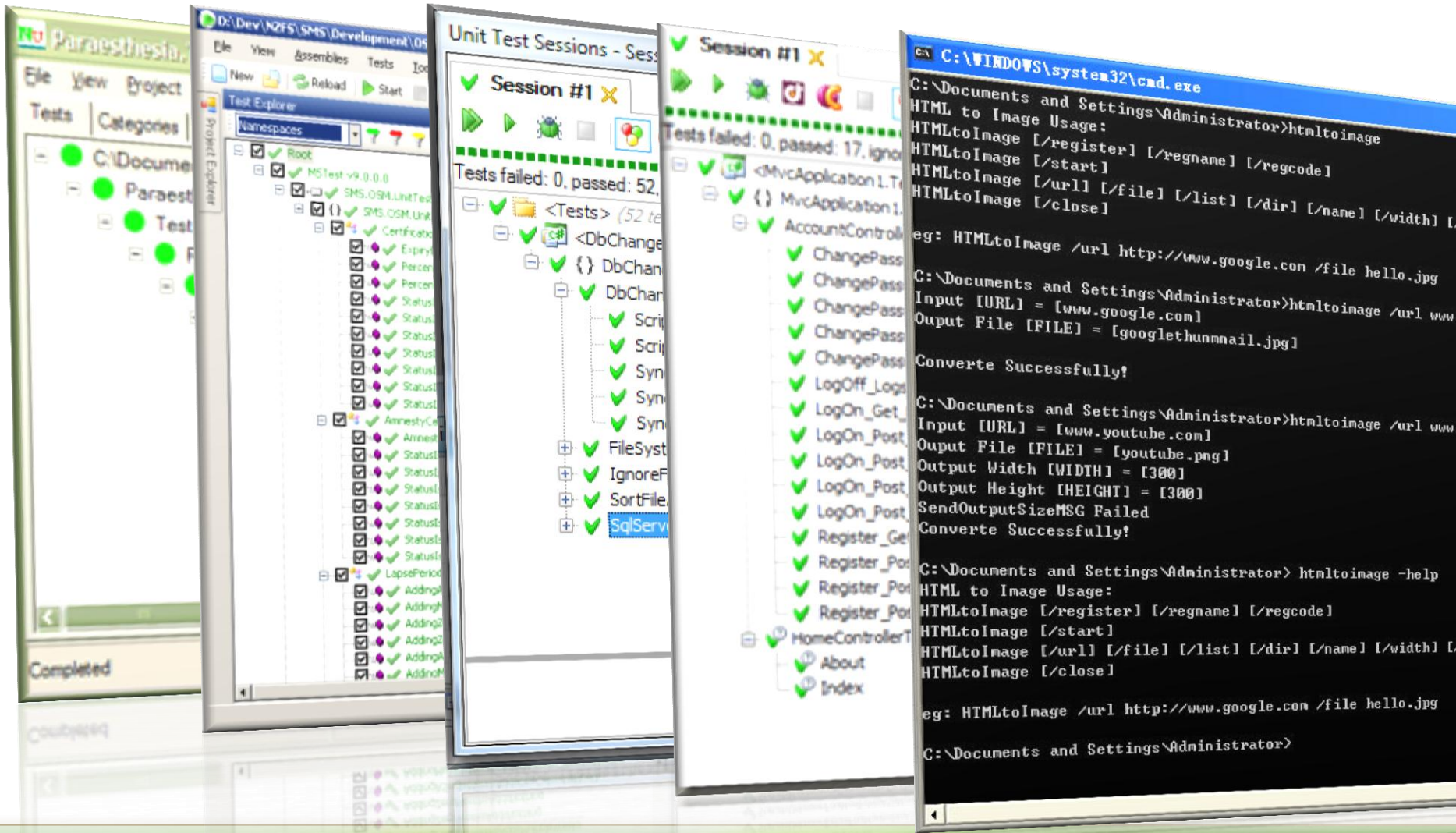


Includes MSTest

# How Unit Test Frameworks Work



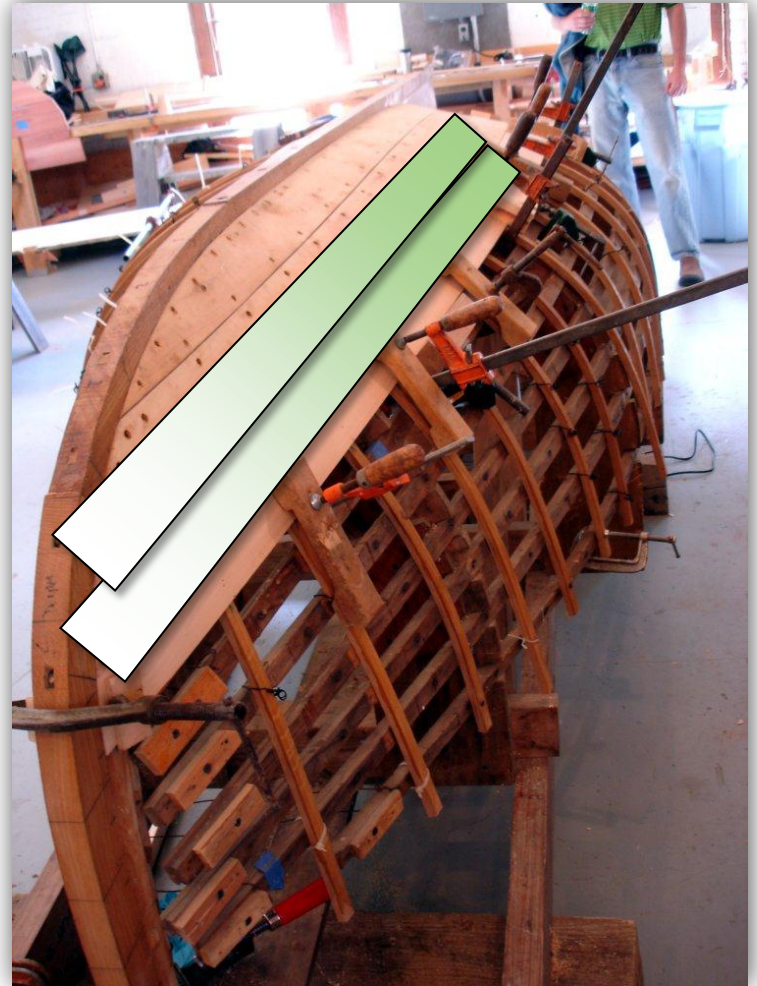
# Unit Test Runners



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# Test First Development

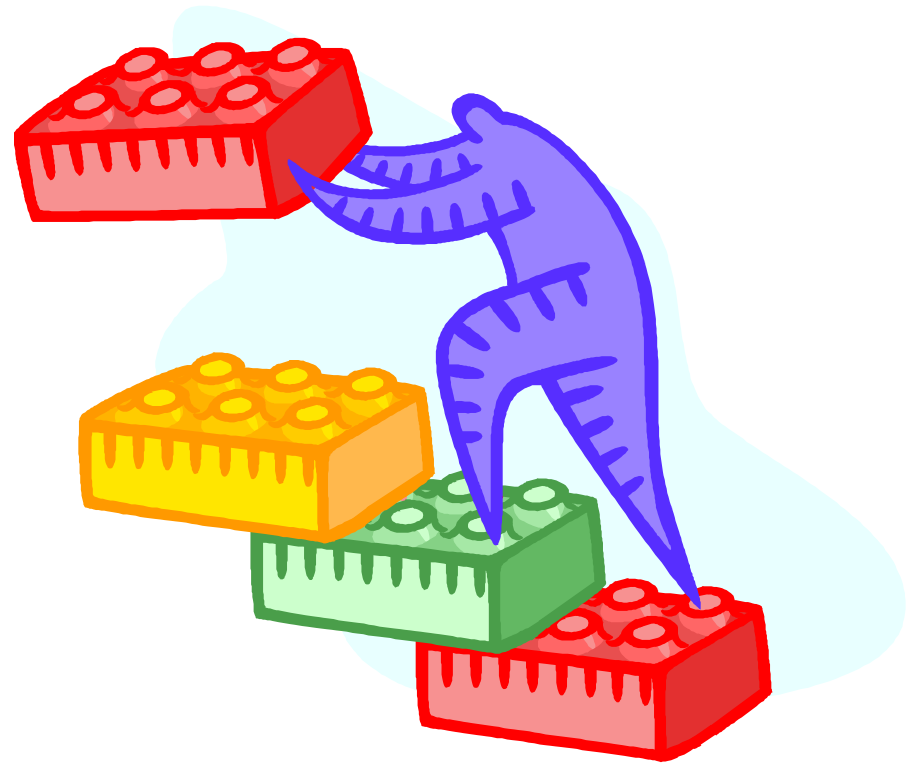
- A Jig is a form upon which something else is built
- The jig is the specification for the thing being built
- Remove the jig when ready to launch



# Building the Jig Only a Moment Ahead

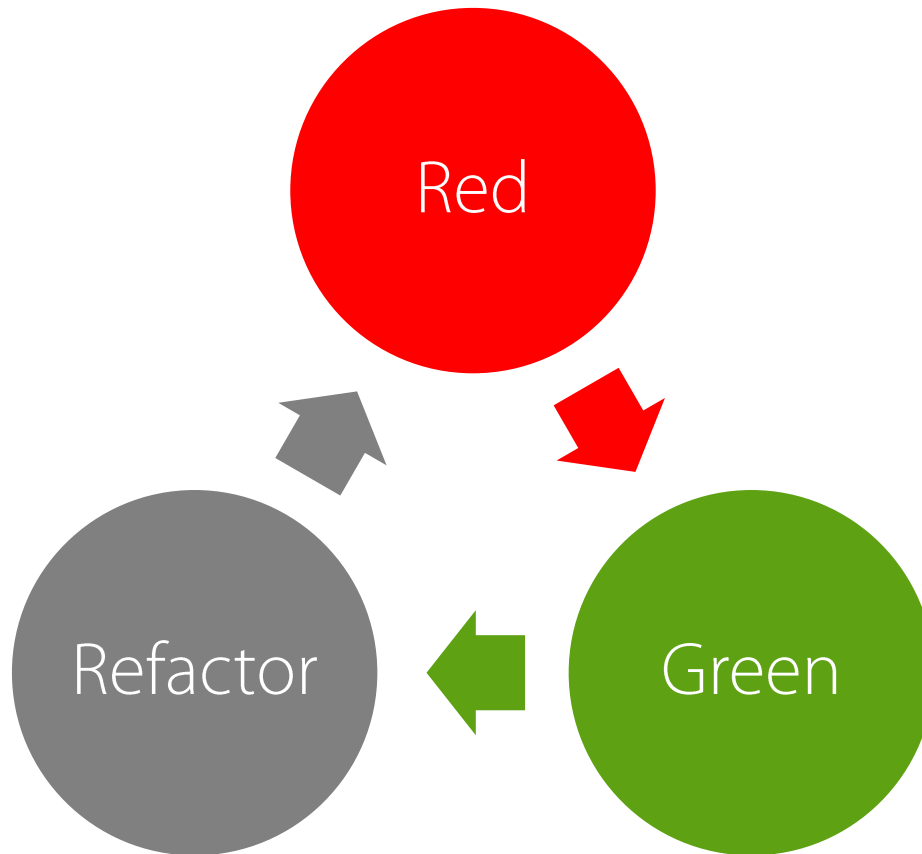
Software is often  
shaped as it is created

Therefore the jig is  
often built only  
moments ahead of  
being used.





# Test Driven Development



1. Create a failing test

*Red*

2. Make the test pass

*Green*

3. Refactor

*Improve the internal implementation without changing the external contract or behavior*

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## **More Test First Practices**

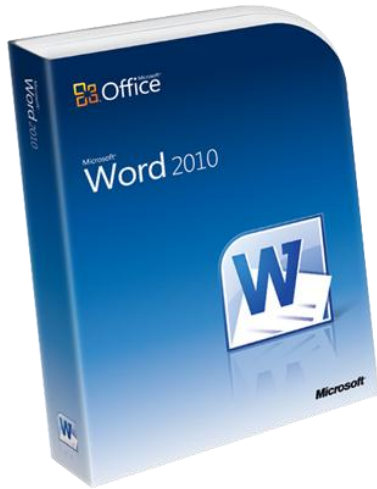


# More Test First Techniques

- **ATDD**  
Acceptance Test Driven Development
- **BDD**  
Behavior Driven Development



# The Tests are the Specs



- ✓ AnimalSpecs
  - [-] ✓ When\_telling\_a\_dog\_to\_bark
    - ✓ The\_dog\_barks\_once\_for\_1\_treat
    - ✓ The\_dog\_doesnt\_bark\_for\_no\_treats

# Summary

Introduction to Developer Testing

Unit Testing Frameworks

Test First Development

More Test First Practices

- **Boris Beizer, *System Testing and Software Quality Assurance*, Boris Beizer, International Thomson Computer Press, 1996**
- **Barry W. Boehm, *Software Engineering Economics*, Prentice Hall, Inc., 1991**
- ***Test Driven Development by Example*, Kent Beck, 2002**

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