Re-Thinking Unit Testing

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How Did We Get Here?

.NET 1.0 released in January 2002

NUnit 2.0 released in October 2002

.NET 2.0 released in November 2005

Years as practitioners, advocates, and coaches

Millions of real-world unit tests written

What is the simplest thing we can do?

Always prefer the language and framework
Attributes are metadata, not control flow
Leverage the runners we already use
Focus on the core, offer extensibility

The T in TDD is Wrong

Replaced
[Test]
with
[Fact] and [Theory]

Be Flexible

Removed [TestFixture]
Static test methods
Private test methods

Be Safe

Create a new instance for each test
Tests are run in a random order – on purpose!

Be Self-Contained

Removed [SetUp] and [TearDown]
Prefer per-test setup and cleanup
Prefer aspect-like pre- and post-test operations
Use constructor and Dispose as a last resort

Be Sure

Removed [ExpectedException]

[ExpectedException]

```
[Test, ExpectedException(typeof(ArgumentException))]
public void WriteTextThrowsForNullText()
{
    var file = new TempFile(@"C:\Foo\bar.txt");

    file.WriteText(null);
}

[Fact]
public void WriteTextThrowsForNullText()
{
    var file = new TempFile(@"C:\Foo\bar.txt");

    var ex = Record.Exception(() => file.WriteText(null));

    Assert.IsType<ArgumentException>(ex);
}
```

[ExpectedException]

```
[Test, ExpectedException(typeof(ArgumentException))]
public void WriteTextThrowsForNullText()
{
    var fileSystem = new Mock<IFileSystem>();
    // Set up stubs and expects, etc.
    var file = new TempFile(fileSystem.Object);

    file.WriteText(null);

    fileSystem.Verify();
}
```

Be a Good Neighbor

Primary runners: TD.NET, ReSharper, MSBuild
Secondary runners: Console, WinForms GUI
Coming soon: Visual Studio Team Editions

Supports ASP.NET MVC (Preview 3+)

Be Extensible

Override how built-in assertions work
Add pre- and post-test operations
Redefine how to run a test method
Redefine what a test class is
Version independent test runner API

Be Our Own Audience

Built for TDD, with TDD
Boot-strapped (xUnit.net tests itself)
Automated acceptance tests

Code!