

Unit Testing Reference

Frameworks:

- NUnit: <http://www.nunit.org/index.php?p=download>
NUnit-2.5.3.9345.msi
- Rhino Mocks: www.ayende.com/projects/rhino-mocks/downloads.aspx
Rhino Mocks 3.5 – For .NET 3.5

Naming conventions:

Project	[ProjectUnderTest].Test
Class	[ClassName]Tests
Method	[MethodName]_[StateUnderTest]_[ExpectedBehavior]

Attributes:

[TestFixture]	Class holds automation testing
[TestFixtureSetUp]	Allow setting up state once before all tests.
[TestFixtureTearDown]	Allow clearing up after all tests have ran.
[Test]	Method contains automated test to invoke
[SetUp]	Setting up the state before tests. Runs each time before a test
[TearDown]	Clearing out the state after tests. Runs each time after a test
[Category("Fast test")]	To set up your tests to run under specific test categories ex fast tests, slow tests

Basic Test:

```
[Test]
[Category("Default tests")]
public void IsValidSongFile_validFile_ReturnsTrue()
{
    bool blResult = mySongController.IsValidSongFile("test.xml");
    Assert.IsTrue(blResult, "filename sould be valid. xml is supported");
}
```

Test with exception:

```
[Test]
[ExpectedException(typeof(ArgumentException), ExpectedMessage =
"Exceptionmessage!")]
Public void IsValidMethod_InvalidInput_ThorwsException()
{
    myObject.DevideByZero(15);
}
```

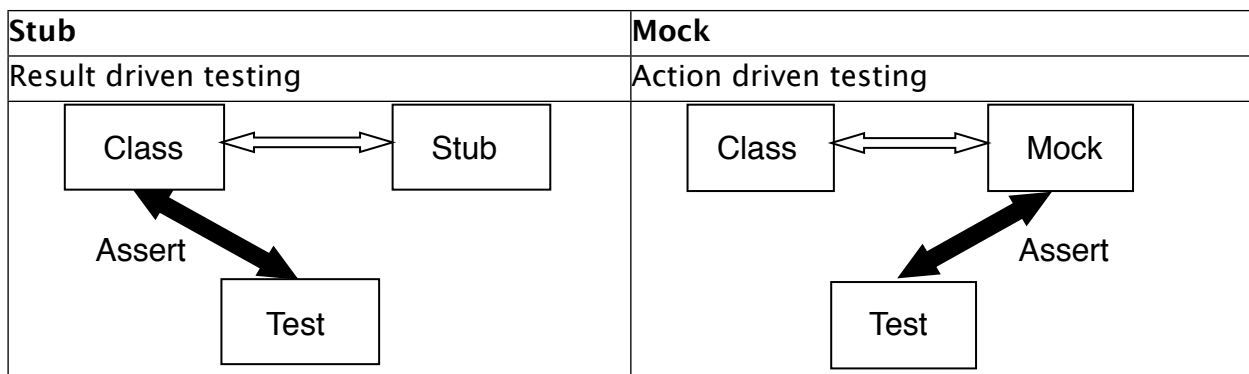
Refactoring:

- Extract an interface to allow replacing underlying implementation.
- Inject stub implementation into a class under test.
- Receive an interface at the contructor level. (= constructor injection)
- Receive an interface as a property get or set.

Hiding Seams:

Methods	[System.Diagnostics.Conditional("DEBUG")]
Other	#if DEBUG #endif

Stubs vs Mocks:



Definitions:

Unit test	A unit test is a piece of a code (usually a method) that invokes another piece of code and checks the correctness of some assumptions afterwards. If the assumptions turn out to be wrong, the unit test has failed. A “unit” is a method or function.
Refactoring	The act of changing the code’s design without breaking existing functionality
Seams	Places in your code where you can plug in different functionality. (cf.stub)
Stub	A Controllable replacement for an existing dependency (or collaborator) in the system.
Interaction testing	Testing how an object sends input to or receives input from objects
Mock object	Fake object in the system that decides whether the unit test has passed or failed. It does so by verifying whether the object under test interacted as expected with the fake object. Normally one mock / test.