

Unit Testing

CSE 403, Spring 2004
Software Engineering

Types of Tests

- Many things to test
 - individual methods
 - classes
 - modules
 - interaction between modules
 - user interface

Unit Testing

- One type of testing performed on classes
- Typically written by the developer
- Used to ensure that class meets requirements before integration

Test-Driven Development

“The tests should drive you to write the code, the reason you write code is to get a test to succeed, and you should only write the minimal code to do so. Note that test-first-design is more than just unit testing. Unit testing by itself does not change the design of the code. In addition to documenting how code should be used, test-first-design helps you keep the design simple right from the start, and keeps the design easy to change.”

-Test First Guidelines (1/25/2002) for Extreme Programmers

JUnit

- Open source testing framework
- Makes automated unit testing for Java more convenient
- Each tests run without user intervention and produces a simple pass/fail message

Using JUnit

- Create a skeleton in the right package.
- Import `junit.framework.*`
- Import whatever other packages you need
- Create a public class extending `TestCase`
- Add a constructor with a single `String` argument that passes the argument to `super`
- Optionally add a `setUp`
- Optionally add a `tearDown`
- Add a lot of `public void testX(){} using Assertions!`

JUnit Resources

- <http://www.junit.org>
- Tutorials
 - <http://quilt.sourceforge.net/tutorials/junit.html>
 - <http://www.diasparsoftware.com/articles/JUnit/jUnitStarterGuide.html>
 - <http://junit.sourceforge.net/doc/testinfected/testing.htm>

Unit Testing in .NET

- NUnit
 - <http://www.nunit.org>
- Tutorial
 - <http://www.xprogramming.com/xpmag/acsUsingNUnit.htm>