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