Unit testing with JUnit

CSE 403

Outline

- Unit testing vs. main() testing
- Unit test demo
- Fixture demo

Resources

- Test Infected: Programmers Love Writing Tests
- JUnit Cookbook
- "Testing with JUnit" chapter from "Java Development with Ant"
- Testing: Cactus and JUnit chapter from "Jakarta Pitfalls"
- And more (see Useful Resources)

Unit testing

- Alternative to testing in main()
- Explicit concept of test pass/fail
- Geared towards testing public interface
- Mechanism for collecting results in structured fashion
- Replicability
- "code a little, test a little, code a little, test a little"

A unit test

- Tests that code accurately reflects *one intention*
- Demo

Multiple unit tests

- Set of objects tested is a **fixture**
- To test with the same fixture:
  - Extend TestCase
  - Create instance variable for each part of fixture
  - Override setUp(), tearDown()
- Demo

Good practices

- Test first
- Improve existing test cases to reflect newly found bugs
- Give asserts good names
- Avoid side effects in test cases