

Test-Driven Development

Building better software one test at a time.

Gary Brown

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Test-Driven Development

- What is Test-Driven Development?
- Origins of TDD
- Better code
- In less time
- With no defects

Unit Testing Frameworks

- What are Unit Testing Frameworks?
- Examples of UTFs
- Costs
- Where to get them
 - www.junit.org
 - www.nunit.org
 - www.xprogramming.com

Characteristics of UTFs

- Most UTFs target OO and web languages
- UTFs encourage separation of business and presentation logic
- Tests written in same language as the code
- Tests are written against the business logic
- GUI and command line test runners
- Rapid feedback

Mechanics of TDD

- Always start with a failing test
- Quickly write the simplest code needed to pass the test
- Remove duplication (AKA Refactor)
- Repeat as needed to meet requirements
- Test everything that could possibly break

What can be tested?

- Valid inputs
- Invalid inputs
- Errors, exceptions, and events
- Boundary conditions
- Everything that could possibly break!

TDD Benefits for Developers

- Much less debug time
- Code proven to meet requirements
- Tests become Safety Net
- Eliminate Bug Pong
- Rhythm of Success

TDD Benefits for Business

- Shorter development cycles
- Near zero defects
- Tests become an asset
- Tests are documentation
- Competitive advantage!

Getting started with TDD

- Get some training
- Start with a small visible project
- Shoot for 100% test coverage
- Don't expect to be perfect
- Expect to improve dramatically in time
- Measure the results

TDD in Legacy Code

- Go Hunting for Bear
- Build the Safety Net
- Work in small increments
- Expect to slow down, then speed up
- Measure the results

Got Bugs?

- Go after your most painful defect
- Write a test to expose it
- Write code needed to fix it
- Refactor
- Repeat
- Measure the results

Tips for Success

- TDD is a skill
- Just Do It
- Insist on achieving 100% coverage
- Measure and Review
- Make Results Visible
- Just Keep Doing It

How we can help

- Basic TDD Training
- Advanced TDD Training
- Acceptance Testing (QA) Training (soon)
- Post-training Follow-ups
- Project Mentoring
- Process Consulting
- Software Testability Analysis

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Questions???

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TDD Demonstration

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