



deliver more than expected

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DEALING WITH THE PIT OF DESPAIR

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TELERIK

DELIVER MORE THAN EXPECTED

One-stop shop for .NET tools & UI components



UI Components

Developer Tools

QA/PM Tools



www.telerik.com

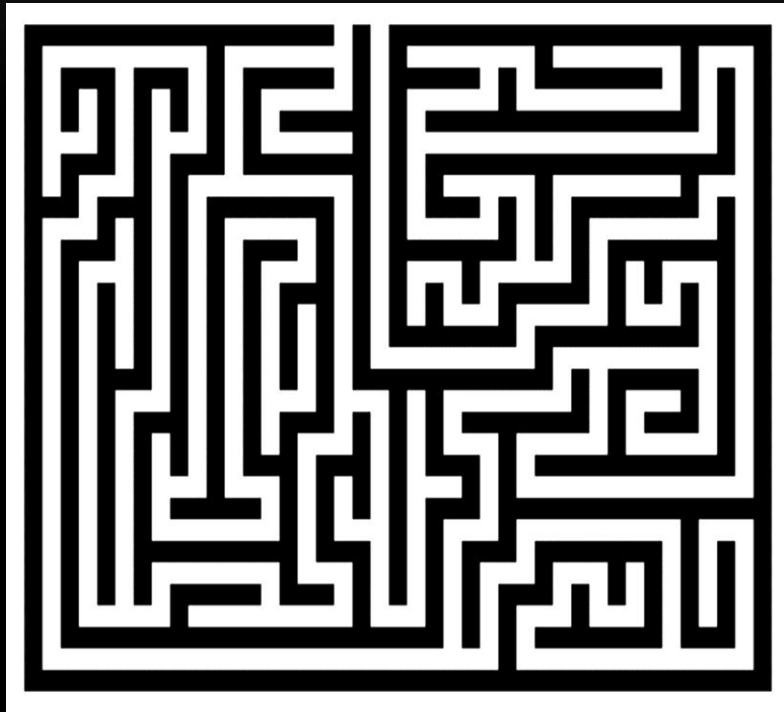
Plan. Build. Test.

PHIL.TOSTRING()

- Agile Practices Evangelist, Telerik, Inc.
- Microsoft MVP
- MCSD, MCDBA, CSM, CSP
- Developer().Speaker().Writer()
- Lead Director, Cincinnati .NET User's Group
- Founder, Agile Conferences, Inc.
- Columnist, Developer.com



LEGACY CODE



- Any Code Not Under Test – Martin Fowler
- High Technical Debt
- Icky



WHEN TO CHANGE SOFTWARE



- Fixing Defects
- Adding Features
- Optimizing Resources
- Removing FUD



MAKE ONE CHANGE AT A TIME



- Fix or Add
- Test after every change
- Commit after every test



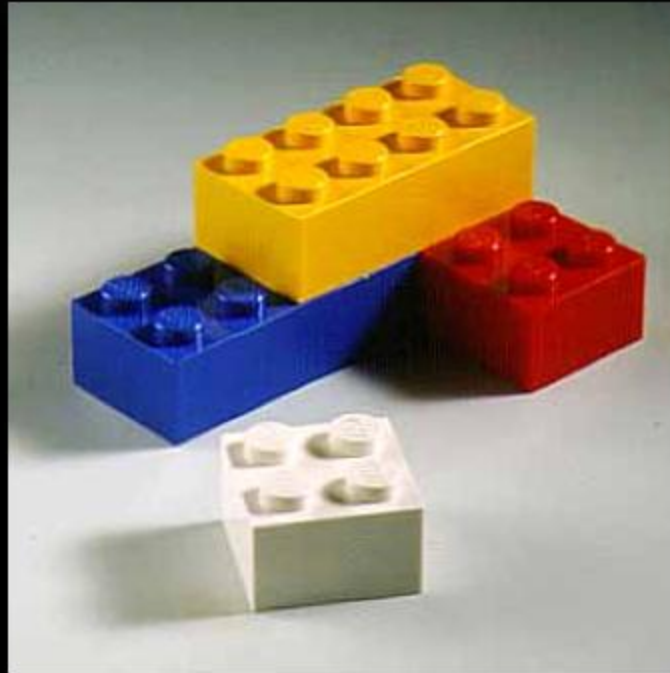
TOOLS OF THE TRADE



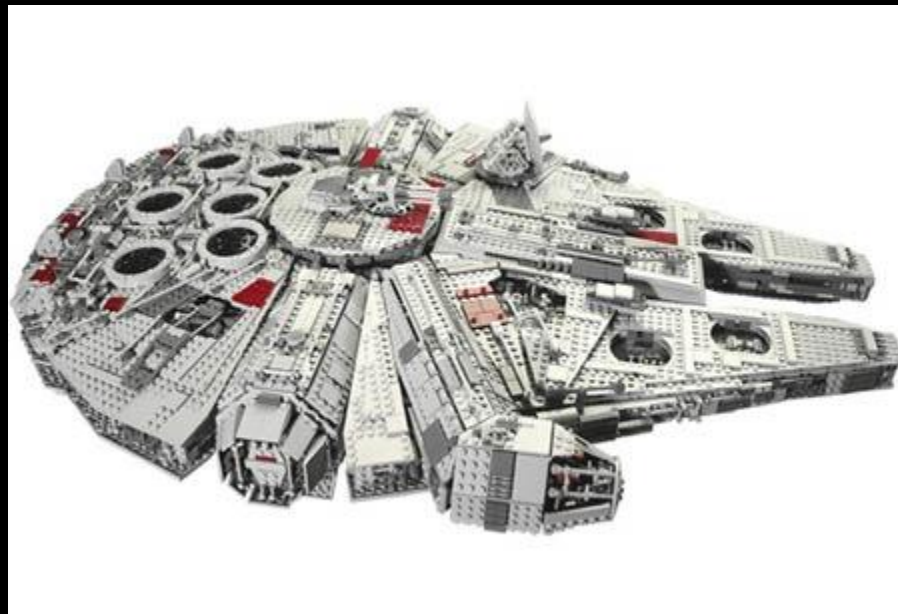
- TDD
- BDD
- Mocking
- Dependency Inversion
- UI Testing



TEST DRIVEN DEVELOPMENT



BEHAVIOR DRIVEN DEVELOPMENT



FAKES, STUBS, AND MOCKS



- Fakes have working implementations
 - Hardcoded, not suitable for production
- Stubs provide canned answers
- Mocks pre-programmed with expectations
 - Create a specification
 - Record behavior



DEPENDENCY INVERSION



USER INTERFACE TESTING

- Typically Manual
- Often tested by customers
- Tools becoming better





DEMO

NUnit – TDD Framework

MSpec – BDD Framework

JustMock – Mocking Framework

Test Studio – User Interface Testing Framework



SAFETY FIRST!



- Remember:
Only you can prevent
bugs!



“INTEGRATION” TEST

Safety blanket



Ai has one

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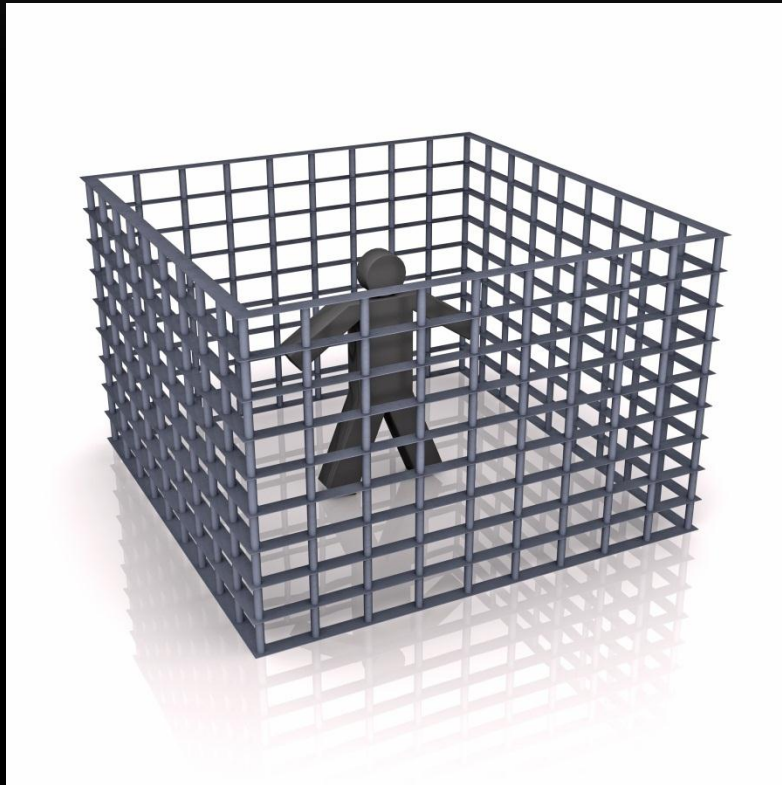


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Plan. Build. Test.

<http://icanhascheezburger.com/2008/10/22/funny-pictures-safety-blanket-ai-has-one/> 18

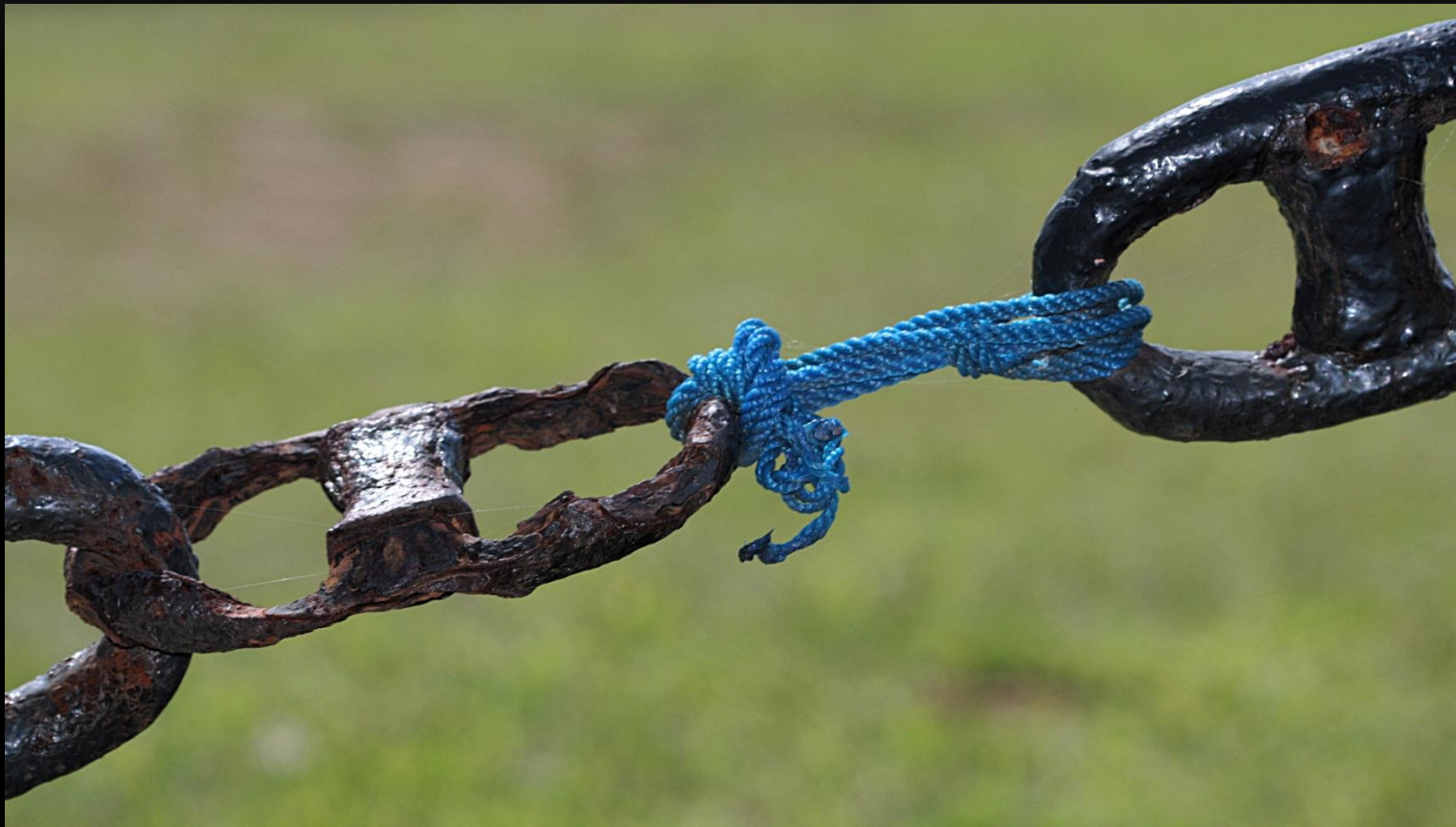
CODE ISOLATION AND REFACTORIZING



```
10: FindChangePoint()  
20: CreateASeam()  
30: AddNewTest()  
40: Refactor()  
50: If !Isolated GOTO 20  
60: FixTargetIssue()  
70: HappyHour()
```



FIND A CHANGE POINT



CREATE A SEAM

- Dependency Injection
- Commercial Mocking



ADD A TEST

- TED Style



REFACTOR



- Extract Methods
- Reduce Complexity
- DRY
- SOLID



LATHER, RINSE, REPEAT



- Continue to drill down



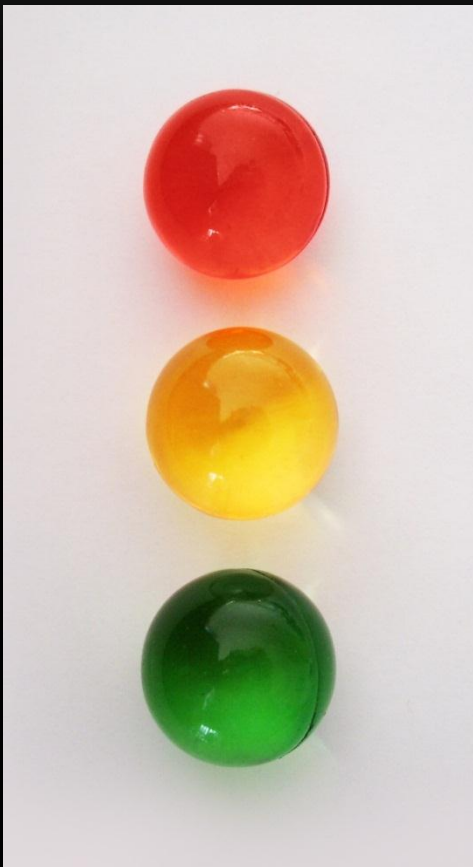
ENTER THE DRAGON



- Code is isolated
- Tests are in place
- Switch to T/BDD



TEST/BEHAVIOR DRIVEN DEVELOPMENT



- Write a failing test
- Make the test pass
- Refactor
 - Remove magic code
 - Add use cases



HAPPY HOUR



- Wave to your coworkers as they struggle...



RESOURCES – UNIT TESTING

- Unit Testing Frameworks
 - NUnit – <http://www.nunit.org>
 - NUnit.Should – <http://www.tinyurl.com/nunit.should>
- Behavior Driven Development Frameworks
 - MSpec – <http://tinyurl.com/mspec>
 - <http://github.com/machine/machine.specifications>
- Mocking Frameworks
 - JustMock Free Edition – <http://telerik.com/mocking>
 - <http://www.telerik.com/products/mocking.aspx>



RESOURCES – TESTING USER INTERFACES

- Unit Testing Frameworks
 - MbUnit/Gallio
 - <http://www.gallio.org>
- Test Studio Framework
 - <http://www.telerik.com/community/download-free-products.aspx>



CONTACT ME

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Active Refactoring

