

Agile Test Management in Team System 2008

David Starr

Microsoft Team System MVP

Pluralsight Trainer and Consultant

Pre-requisites for this presentation:

1. Understand Unit Testing
2. Know what a mock object is will help
3. Groking TDD in your soul is a bonus

Level: **Intermediate to Advanced**



David Starr

- Pluralsight Trainer and Consultant
- Microsoft MVP in Team System
- Founder of ElegantCode.com and the ElegantCode Cast podcast
- Agile Guy
- @elegantcoder

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Overview

This is a discussion about developer testing

- What we mean by “Agile” testing
- Expressing Desirements Well
- Making Specifications from Desirements
- Going Further



Because the term isn't already overloaded quite enough

WHAT WE MEAN BY “AGILE” TESTING

Agile Testing

- Testing from the user point of view
- Testing early and often
- Passing tests accompany each incremental delivery of product

How to Achieve It

- Keep these things simple
 - Specifications
 - Tests
 - System design
- Use a grammar that joins everything together
 - User stories
 - With scenarios

Executable Specifications - The Holy Grail

1. Customer or business analyst writes a specification
2. That specification is (or generates) a failing test
3. The test is made to pass

Desirements are not Specifications

- Sentences in Word documents are not programmatically enforceable
- Desirements are what someone wants the software to do
- Specifications are the desirable things the software actually does
- Specifications change right to the end

The Tests are Specifications

- Tests are proof desirements have been met
- Tests are not proof bugs do not exist
- Every passing test is a Specification



First things first

EXPRESSING DESIREMENTS WELL

User Stories

As a <role>
I want <some feature>
so that <benefit>.

The Community Recipe Box

- As a recipe recorder I want to tag my recipes so I can find them via ad-hoc tags
- As a recipe seeker I want to search by tag values so I can find recipes via ad-hoc tags
- As a recipe seeker I want to search by recipe ingredient so I can find recipes for the ingredients I have on hand.

Scenarios

Given <some context>
when <something happens>
then <this happens>.

A Complete User Story

Title: Recipe Tagging

As a recipe recorder I want to tag my recipes so I can find them via ad-hoc tags

Scenario: 3 character minimum

- Given a tag value of less than 3 characters, when it is entered then it is not saved and the user is alerted about tag length

Scenario: No spaces

- Given a tag with spaces is entered, when it is entered saved then spaces are removed and the tag is camel cased

Some Levels of Specification

User Goals

- **As a** recipe keeper, **I want** an online recipe box **so that** I can always have access to my favorite recipes.



User Interaction

- **As a** user searching for recipes, **I want** results based on ingredients **so that** I can search for a recipe via an ingredient in it.

System Interaction

- **As a** Recipe Box web application, **I want** a service to handle persistence **so that** I don't have to worry about it.

Class

- **As a** View for a recipe entry form, **I want** a presenter to fetch all my data and validate it **so that** I can stay ignorant of the persistence model.

Start by Drawing if Possible

Recipe Box

http://vslive.myrecipebox.com

Home Add New Recipe List My Recipes

Recipe Title

Amount	Unit	Ingredient Name
1	cup	salsa
2	tsp	beer
5	slices	bread

Cook's Notes

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- We can all speak UI
- Almost all user experiences are through the UI
- The UI provides great common ground for discussing desirements

Then Add User Stories

As a recipe saver, I want to add an ingredient to a recipe so that it is retained as part of the recipe

- Given a new ingredient is entered when it is added then the text is parsed and the ingredient is added to the list.

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Amount	Unit	Ingredient Name
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Cook's Notes

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Since we can't compile MSWord to IL

MAKING SPECIFICATIONS FROM DESIREMENTS

Complete User Stories

- Now you are speaking a common language with the person who wants the software
- The conversation drives out the domain model and business logic
- Programmatically enforceable desirements

As a
I want
So that

Given
When
Then

Given
When
Then

Given
When
Then

Creating Specifications

1. Create a Visual Studio Specification Project
 - Known as a “Test Project” in some circles
2. Create a failing unit test for the scenario and name it similarly
3. Viola. Unmet specifications
4. Turn the specifications green

As a
I want
So that

Given
When
Then

Given
When
Then

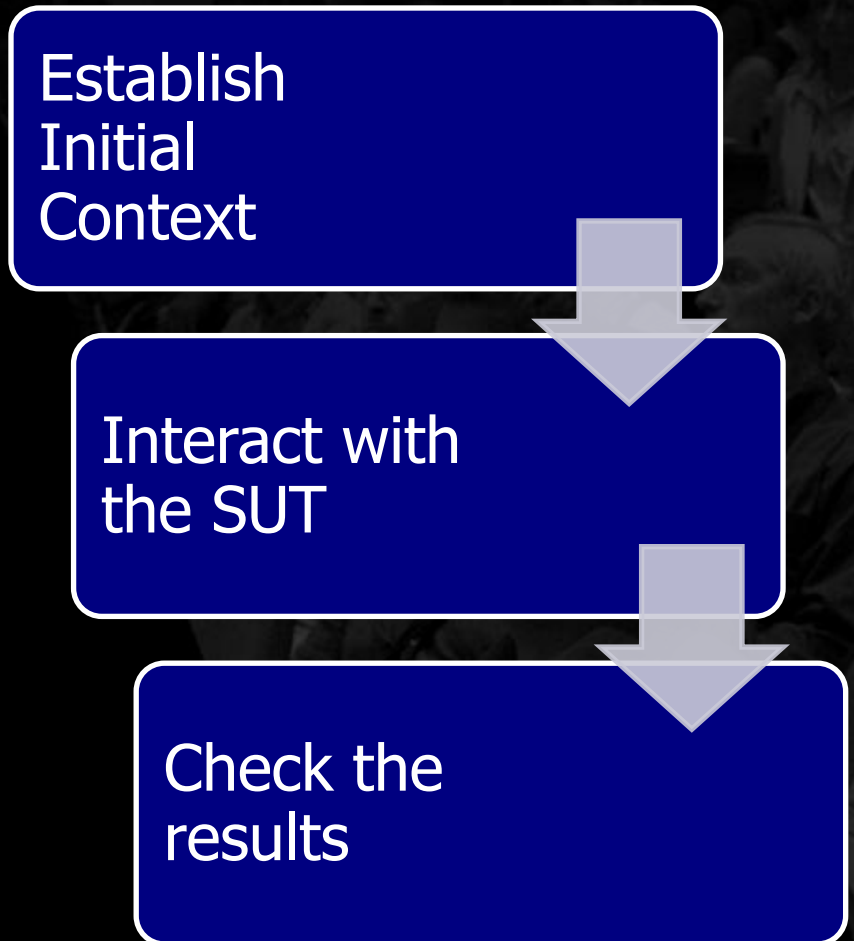
Given
When
Then

Behavior Driven Development

- The next level of Test Driven Development
 - Introduced by Dan North
 - Lots of varying opinion on the “right way”
- Focus on the language and context, not the framework

Variations on a Theme

- AAA
 - Arrange
 - Act
 - Assert
- GWT
 - Given
 - When
 - Then
- Context / Specification
 - Context
 - Begin
 - Assert





Stretching out the funky new idea

GOING FURTHER

Pretending to be the Domain

- Things exist beyond the user's knowledge
- Developers must contend with them
- This technique can apply to lower level concepts

Pretending to be the Domain

- **As a** UI presenter **I want** RecipeAssembler to create a RecipeDTO from a RecipeBusinessObject **so that** I can use it within the UI.
 - **Given** the RecipeBusinessObject RecipeName is null or empty **when** the RecipeAssembler receives the RecipeBusinessObject, **then** it raises an appropriate exception



More Unit Testing Tools

- Supporting BDD and Context/Specification frameworks
 - NBehave (MSTest support)
 - StoryQ
 - MSpec (Built on NAnt)
 - Others
- Handy extension methods
 - NetSpec
 - Roll your own



Summary

- Finding and speaking the common language
- Build and use complete user stories
- Find a 3 step test technique
 - GWT
 - AAA
 - Context / Specification
- Turn desirements into specifications with unit testing

References

- David Starr
 - Pluralsight.com | ElegantCode.com
 - david@elegantcode.com
 - @elegantcoder

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