

Acceptance Test Driven Development with Concordion

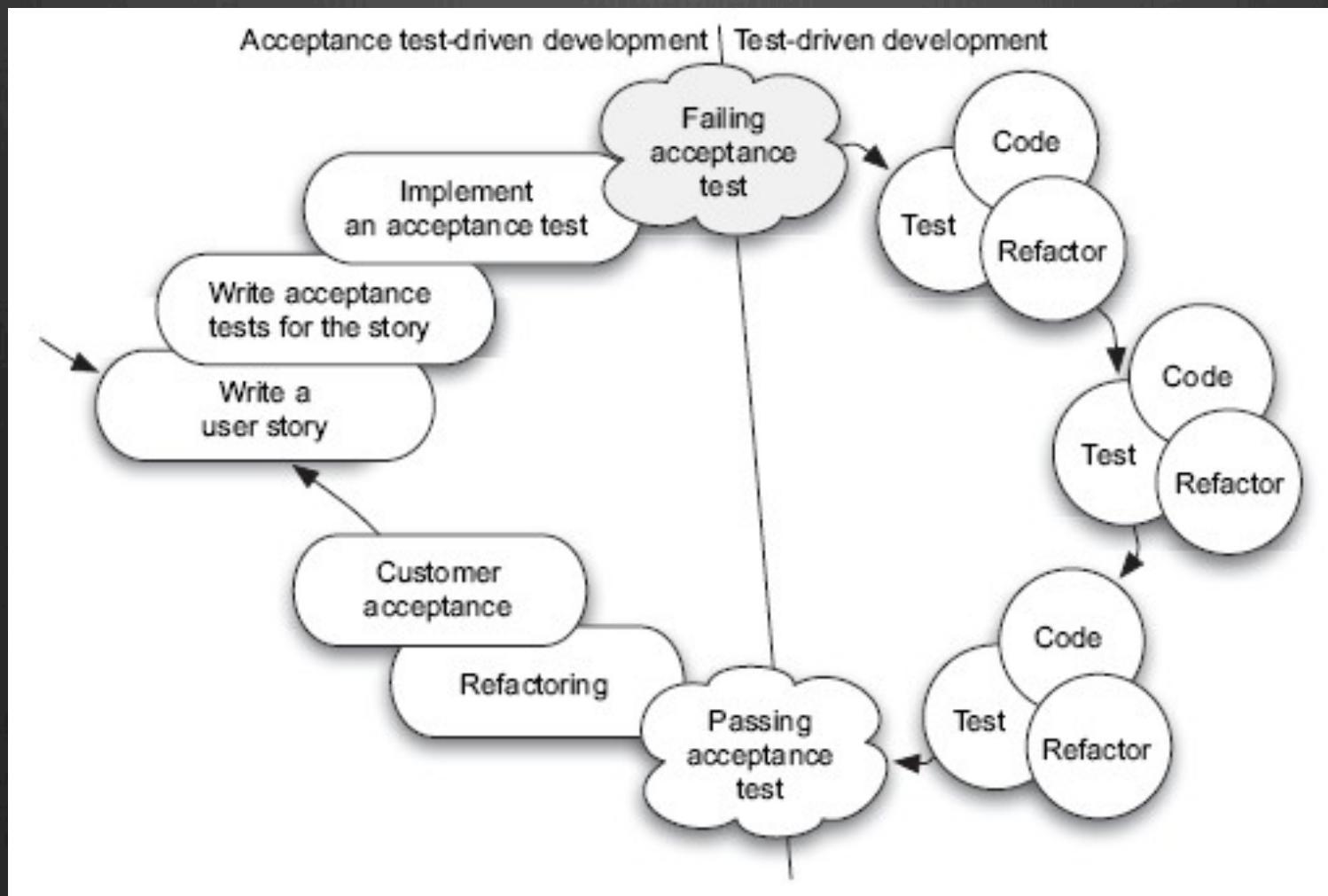
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Acceptance Test Driven Development?

- ATDD is TDD applied at a coarse grain level.
- With ATDD your focus is on verifying behavior that is visible to customers
- The emphasis is on creating *executable specifications* (user stories, use cases, etc.)
- Like TDD, you define your behavior first, write a failing test, and then write the code.

ATDD & TDD



What we wanted

- Java-based framework
- Easily integrated with Maven and Hudson
- Provided traceability
- Publish requirements/test results

Concordion

- An open source Java framework built on JUnit
- HTML-based specifications

How Concordion Works

Specification



Instrumentation (hidden in HTML)

Fixture

public void setUserInformation(**User** user) {
 this.user = user;
 this.user.setAddress(**this**.address);
 this.user.setPhone(**this**.phone);
 this.user.setEmail(**this**.email);
}

public void setAddress(**Address** address) {
 this.address = address;
}

public void setPhone(**Phone** phone) {
 this.phone = phone;
}

public void setEmail(**Email** email) {
 this.email = email;
}

public void setUser(**User** user) {
 this.user = user;
}

public void setAddress(**Address** address) {
 this.address = address;
}

public void setPhone(**Phone** phone) {
 this.phone = phone;
}

public void setEmail(**Email** email) {
 this.email = email;
}

System Under Test

How Concordion Works

```
<html>
<head><title>Record Type Code</title></head>
<body>
    <h1>00001 - Record Type Code</h1>
    <p>The following record type codes are valid. All other codes will cause a record to be rejected.</p>
    <div class="example">
        01 = Separation
        02 = Transfer
        03 = At Retirement
        04 = Death in Service
        05 = FERS Election
        06 = Preliminary Disability Retirement
        07 = Re-employed Annuitant
    </div>
    <div class="example">
        <h3>Acceptance Criteria</h3>
        <table>
            <tr>
                <th>Record Type</th>
                <th>Record Type Code</th>
                <th>Is Valid?</th>
            </tr>
            <tr>
                <td>ElectronicRetirementRecord</td>
                <td>00</td>
                <td>false</td>
            </tr>
        ...
    </div>
</body>
</html>
```

How Concordion Works

[RSM](#) > [Guide to Retirement Data Validations \(GRDV\)](#) > [1 - Individual Validations](#) >

00001 - Record Type Code

The following record type codes are valid. All other codes will cause a record to be rejected.

01 = Separation 02 = Transfer 03 = At Retirement 04 = Death in Service 05 =
FERS Election 06 = Preliminary Disability Retirement 07 = Re-employed
Annuitant

Acceptance Criteria

Record Type	Record Type Code	Is Valid?
ElectronicRetirementRecord	00	false
ElectronicRetirementRecord	01	true
ElectronicRetirementRecord	02	true
ElectronicRetirementRecord	03	true
ElectronicRetirementRecord	04	true
ElectronicRetirementRecord	05	true
ElectronicRetirementRecord	06	true
ElectronicRetirementRecord	07	false
ElectronicRetirementRecord	08	false

Advantages

- No requirements document
- Requirements, code, tests versioned together
- Allows for a variety of requirements styles
- Customers can easily see which requirements are passing
- Customers don't need to learn a new requirements style
- Works great with Build Pipelines

Things to Consider

- Still need to write an Application Driver
- Requirements written in HTML

Concordion Alternatives

- Tabular Style Requirements
 - Fit
 - FitNesse
- Behaviour Driven Development
 - easyb
 - JBehave

Further Reading

- Concordion, <http://www.concordion.org>
- Acceptance TDD Explained, <http://bit.ly/9eRyXq>
- Books
 - *Test Driven: Practical TDD and Acceptance TDD for Java Developers*, by Lasse Koskela, <http://www.manning.com/koskela>
 - *Growing Object Oriented Code, Guided by Tests*, by Steve Freeman and Nat Pryce, <http://www.amazon.com/Growing-Object-Oriented-Software-Guided-Tests/dp/0321503627>

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