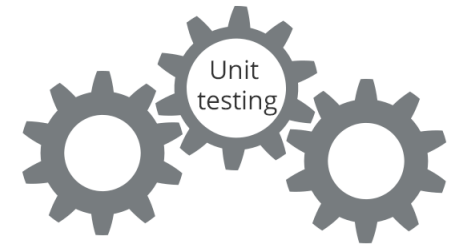


# Testing XSLT



XSLT Development

# Agenda

- Unit testing and XSLT development
- XSpec framework
- Creating test scenarios in Oxygen
- XSLT documentation

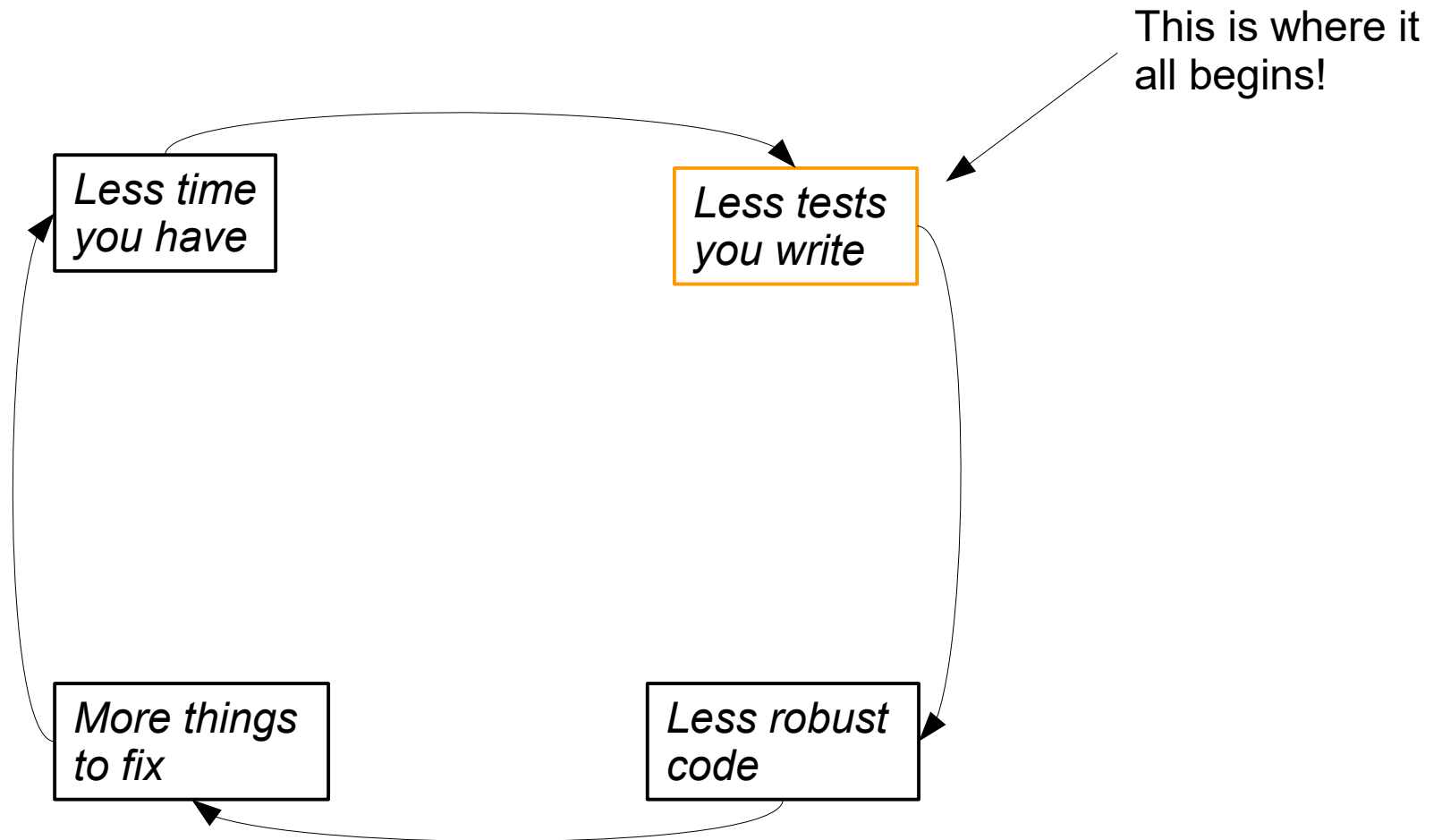
[https://www.oxygenxml.com/events/2017/webinar\\_unit\\_testing\\_xslt\\_with\\_xspec\\_and\\_oxygen.html](https://www.oxygenxml.com/events/2017/webinar_unit_testing_xslt_with_xspec_and_oxygen.html)

# Why Unit Testing?



XSLT Development

# Why Unit Testing?



# Unit Testing

- More unit tests means less side effects
- Find problems early
- Facilitate changes
- Verifies the behavior of a **small part** of the application
- Quite easy to implement
- When test fails you know exactly where the fault is
- Lessens need of manual QA

# Test Driven Development

- You describe a behavior (a.k.a. write a test)
- You test if the code has that behavior
- If it doesn't, you develop the code until it does (a.k.a. the test passes)
- On the long run you'll have regression tests
  - New functionality will not break the existing one
  - You can refactor (make changes) without fear

# XSLT Test Driven Development

- focus on the expected behavior
  - “when processing a **shortdesc** element, it should create a **p** element”
  - “when processing a **fn** element with a **@label** attribute in *footnote* mode, it should create a **p** element with a **sup** child holding the value of the **@label** attribute”

```
<fn label="Some text">....</fn>  
↓ ↓ ↓  
<p><sup>Some text</sup>...</p>
```

# XSpec framework

- Unit test and BDD (Behavior Driven Development ) framework for XSLT and XQuery

<https://github.com/xspec/xspec/>

- Current version: **0.5.0**
- Written by Jeni Tennison. Maintained by Florent Georges, Sandro Cirulli.



# XSpec framework integration

- bundled inside Oxygen
- support for working on XSpec scenarios
- an XSpec wizard
- built-in transformation scenarios to run XSpec scenarios

# XSpec framework scenario

```
<x:scenario label="Scenario for testing function total">
  <x:call function="f:total">
    <x:param name="books">
      <book>
        <title>The Green Mile</title>
        <author>Stephen King</author>
        <price>18</price>
      </book>
      <book>
        <title>The Catcher in the Rye</title>
        <author>J. D. Salinger</author>
        <price>25</price>
      </book>
    </x:param>
  </x:call>
  <x:expect label="The total price of the books">43</x:expect>
</x:scenario>
```

# Three main types of scenarios

- Matching scenarios
- Named scenarios
- Function scenarios

# Matching scenarios

```
<x:scenario label="when processing a para element">  
  <x:context href="source/test.xml" select="/doc/body/p[1]"/>  
  ...  
</x:scenario>
```

# Named scenarios

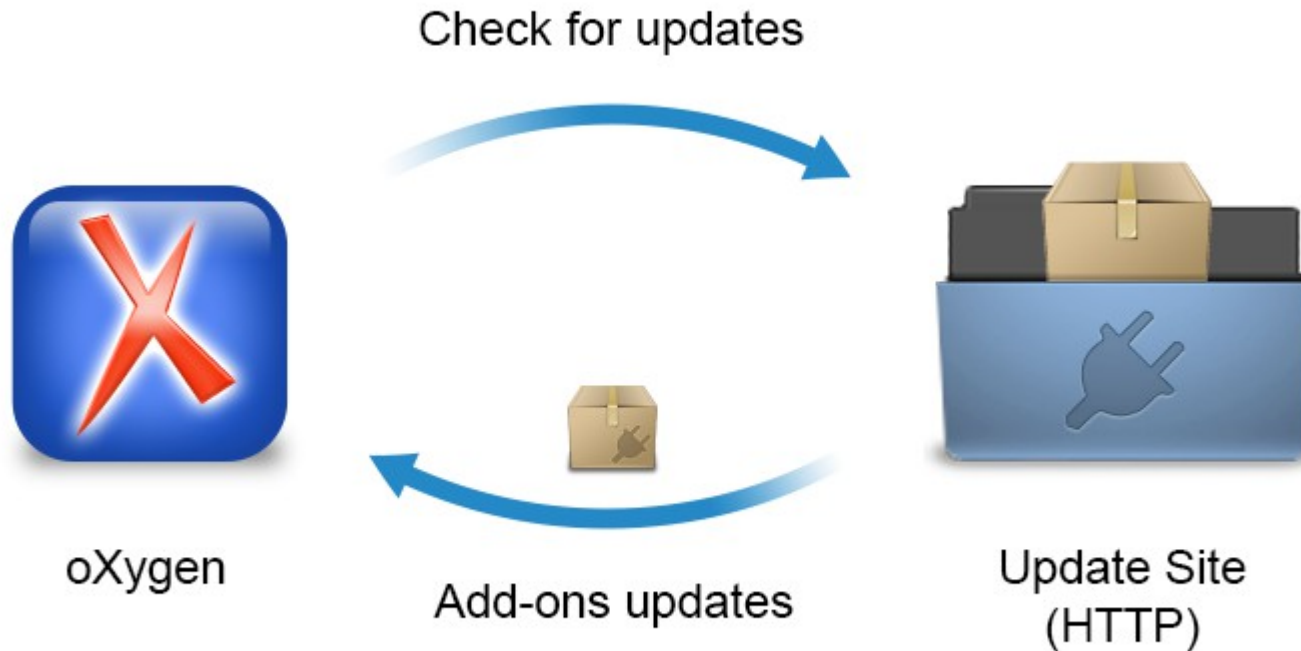
```
<x:scenario label="when creating a table with two columns containing three values">  
  <x:call template="createTable">  
    <x:param name="nodes">  
      <value>A</value>  
      <value>B</value>  
      <value>C</value>  
    </x:param>  
    <x:param name="cols" select="2"/>  
  </x:call>  
  ...  
</x:scenario>
```

# Function scenarios

```
<x:scenario label="when capitalising a string">
  <x:call function="eg:capital-case">
    <x:param select="an example
string"/>
    <x:param select="true()"/>
  </x:call>
  ...
</x:scenario>
```

# XSpec Test Results (Add on)

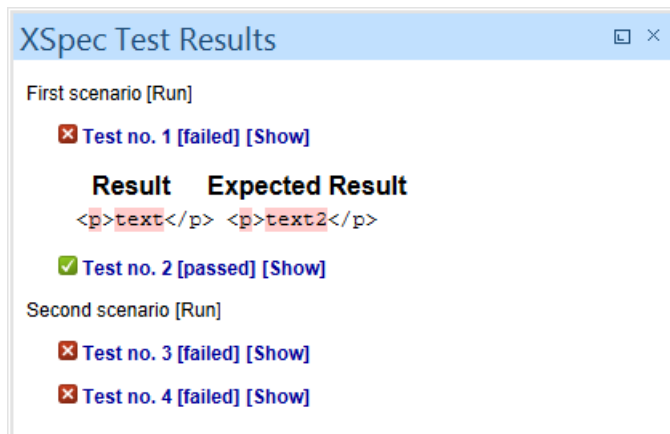
[https://raw.githubusercontent.com/xspec/oxygen-XML-editor-xspec-support/master/build/update\\_site.xml](https://raw.githubusercontent.com/xspec/oxygen-XML-editor-xspec-support/master/build/update_site.xml)



<https://github.com/xspec/oxygen-XML-editor-xspec-support>

# XSpec Test Results View

- Customizable through:
  - XSLT
  - HTML
  - Javascript
    - Interacts with Oxygen through a Javascript→Java bridge





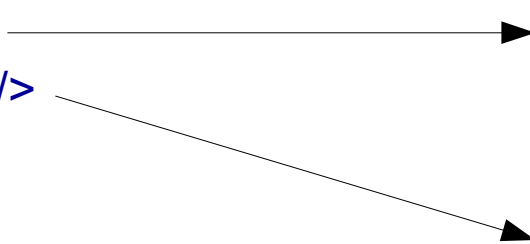
# XSLT documentation. Why?

- An XSLT may be written only **once**, but is read **many** times:
  - When debugging
  - When adding additional functionality
  - When refactoring
  - When others try to understand or use your code

# XSLT documentation

```
<xsl:function name="f:total">  
  <xsl:param name="books"/>
```

```
.....  
</xsl:function>
```



Total of what?

Should this be one <books>  
element or a sequence of <book>  
elements?

# Thank you!

Questions?