

# Changing XML with XSLT and XQuery

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# Overview

Implement Author actions based on XSLT and Xquery Update

XML Refactoring actions based on XSLT and Xquery Update

# XSLT and XQuery Author operations

- Document Type Associations
- Creating and mounting an Author action
- XSLT and XQuery operation parameters

# 1. Use case (XSLT)

## Convert DITA image to figure

```
<image href="../../images/Lilac.jpg" alt="My custom image"/>
```



```
<fig>  
  <title>My custom image</title>  
  <image href="../../images/Lilac.jpg" alt="My custom image"/>  
</fig>
```

## 2. Use case (Xquery Update)

Compute ID of section from title

```
<section>  
  <title>Before we begin</title>  
  .....  
</section>
```



```
<section id="before_we_begin">  
  <title>Before we begin</title>  
  .....  
</section>
```

## 3. Use case (XSLT)

Compute ID of section from title and topic ID:

```
<topic id="introduction">  
....  
  <section>  
    <title>My section title</title>  
    <p>Some text</p>  
  </section>
```



```
<topic id="introduction">  
.....  
  <section id="introduction_my_section_title">  
    <title>My section title</title>  
    <p>Some text</p>  
  </section>
```

# XML Refactoring actions

Actions which allow making repetitive structural changes in XML documents based on specific use cases.

Implemented in XSLT or XQuery.

Use case: Remove all `<p>` tags from `<li>` list item tags.

```
<ol>  
  <li>  
    <p>paragraph text</p>  
  </li>  
</ol>colors and shapes. Both an
```

# Simple use case

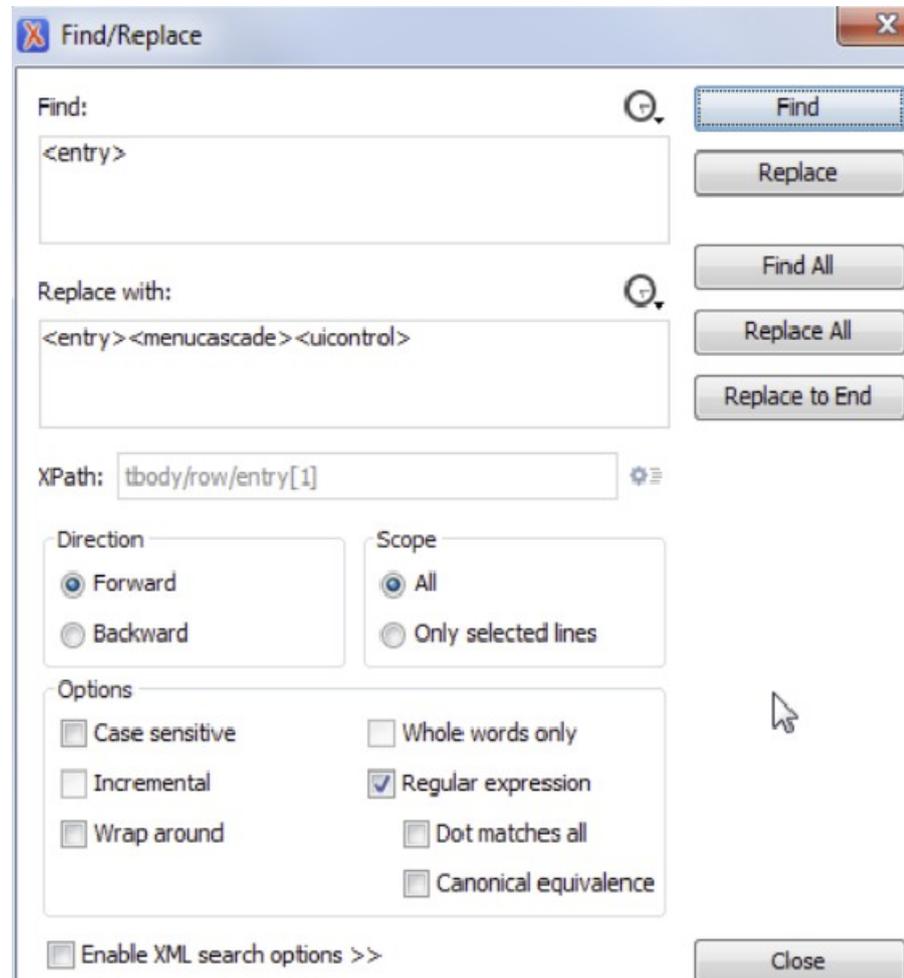
Wrap all text nodes from the first cell in the table row in elements:

```
<table>  
  <tbody>  
    <row>  
      <entry>Button Name</entry>  
      <entry>Description</entry>
```



```
<table>  
  <tbody>  
    <row>  
      <entry><menucascade><uicontrol>Button</uicontrol></menucascade></entry>  
      <entry>Description</entry>
```

# Aren't the existing tools enough?

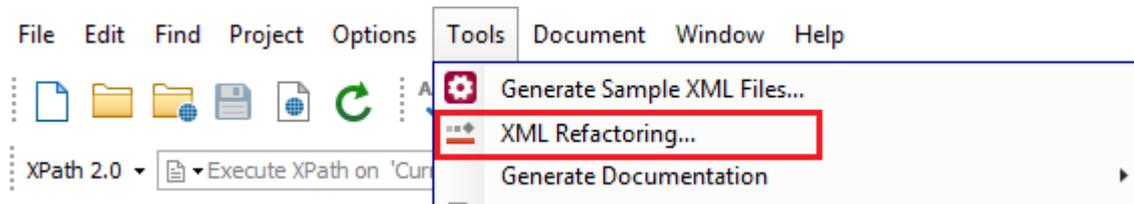


# Where do I find XML refactoring operations?

- Toolbar



- Main menu



- Project view
- DITA Map Manager
- Contextual menu

# Predefined operations

## Attribute operations

- **Add/Change** attribute
- **Delete** attribute
- **Remove** attribute
- **Replace** in attribute value

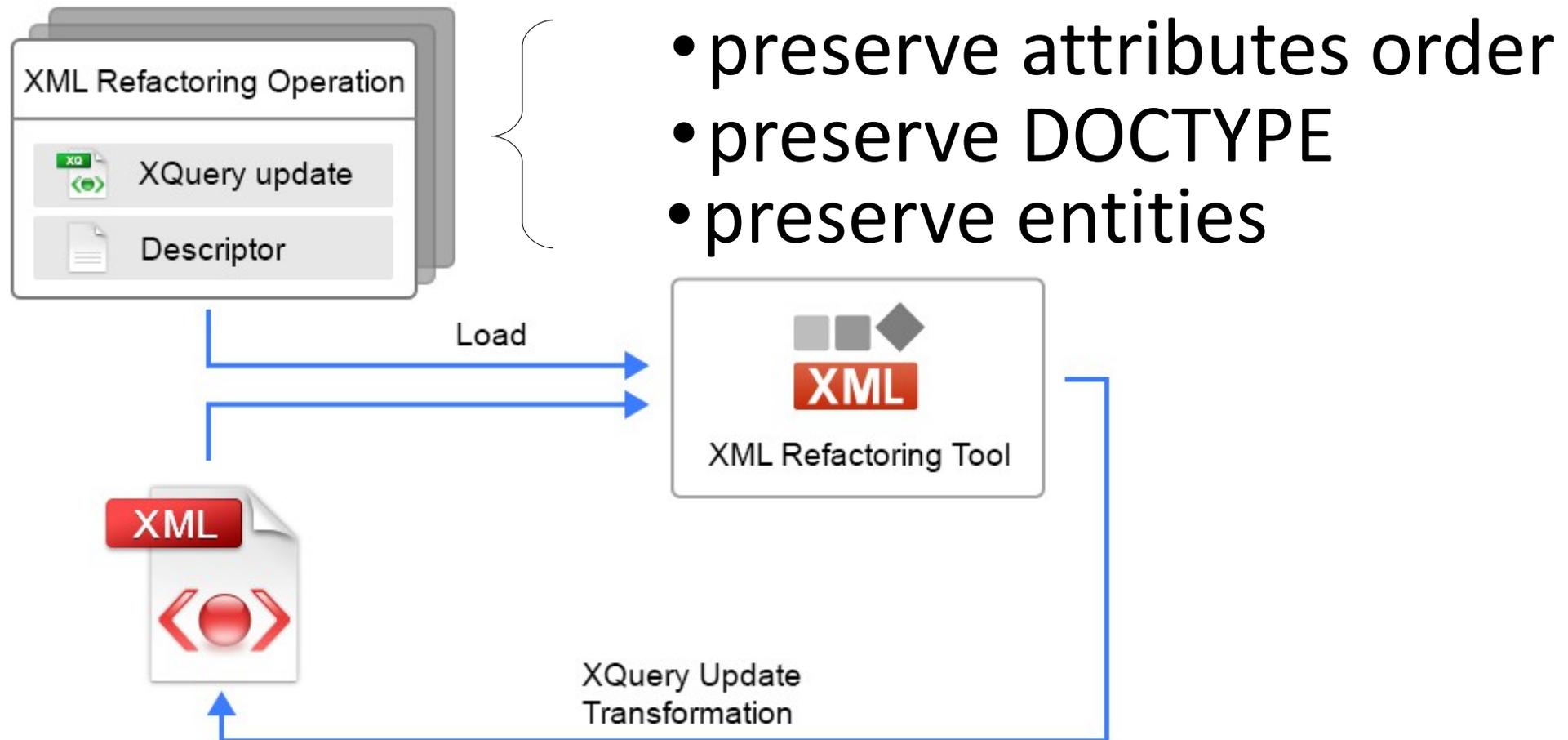
## Element operations

- **Insert** element
- **Rename** element
- **Wrap** element
- **Wrap** element content
- **Unwrap** element
- **Delete** element
- **Delete** element content

## XML fragment operations

- **Insert** XML fragment
- **Replace** element with XML fragment
- **Replace** element **content** with XML fragment

# XML Refactoring process



# Custom XML Refactoring operations

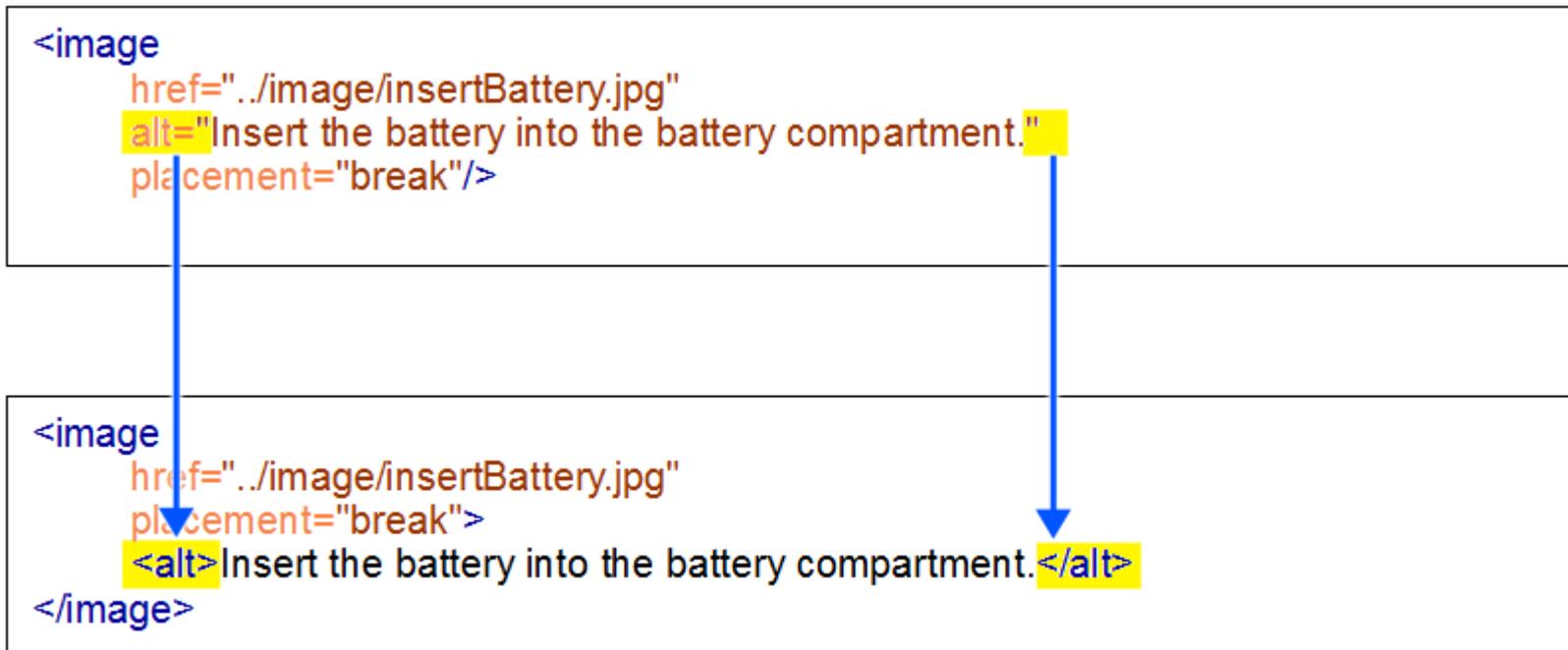
- Based on XSLT or XQuery update
- Have XML descriptor file which configures action name, description and parameters



# Convert an attribute to an element

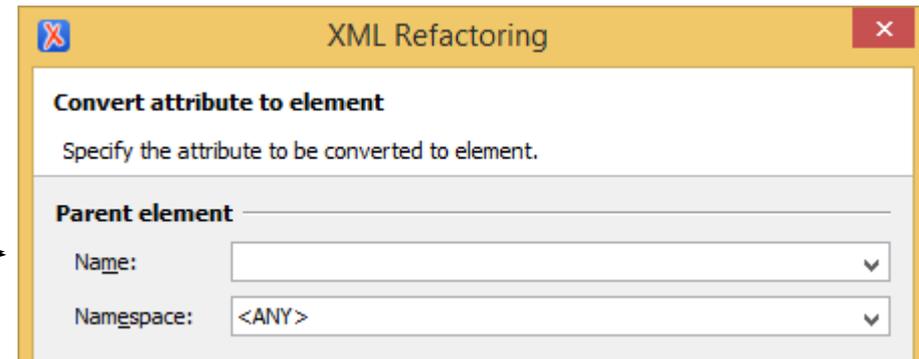
**Q:** How to convert the **alt** attribute to an element with the same name?

**A:** By creating a **custom operation**



# Descriptor

```
<refactoringOperationDescriptor
  name="Convert attribute to element">
  <description>Converts the specified attribute....</description>
  <parameters>
    <description>Specify the attribute...</description>
    <section label="Parent element">
      <elementParameter id="elemID">
        <localName
          label="Name"
          name="element_localName">
        </localName>
        <namespace
          label="Namespace"
          name="element_namespace">
        </namespace>
      </elementParameter>
    </section>
  </parameters>
</refactoringOperationDescriptor>
```



# XQuery Script

(: Local name of the attribute's parent element. :)

```
declare variable $element_localName  
as xs:string external;
```

(: Namespace of the attribute's parent element. :)

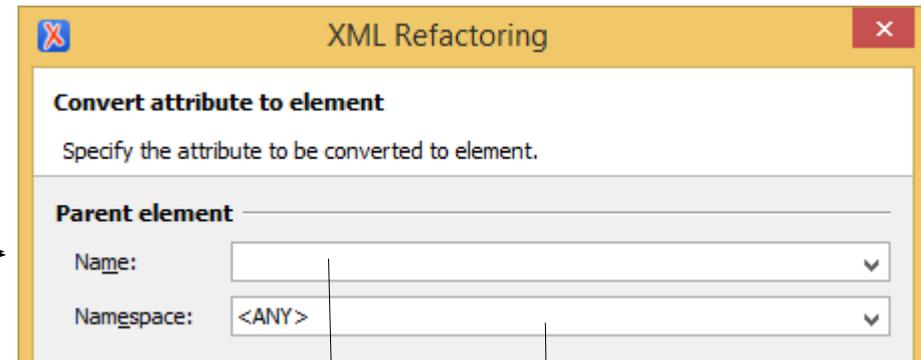
```
declare variable $element_namespace  
as xs:string external;
```

```
<refactoringOperationDescriptor  
  name="Convert attribute to element">  
  <description>Converts the specified attribute....</description>  
  <parameters>  
    <description>Specify the attribute...</description>  
    <section label="Parent element">  
      <elementParameter id="elemID">  
        <localName  
          label="Name"  
          name="element_localName">  
        </localName>  
        <namespace  
          label="Namespace"  
          name="element_namespace">  
        </namespace>  
      </elementParameter>  
    </section>  
  </parameters>  
</refactoringOperationDescriptor>
```

# Working together

```

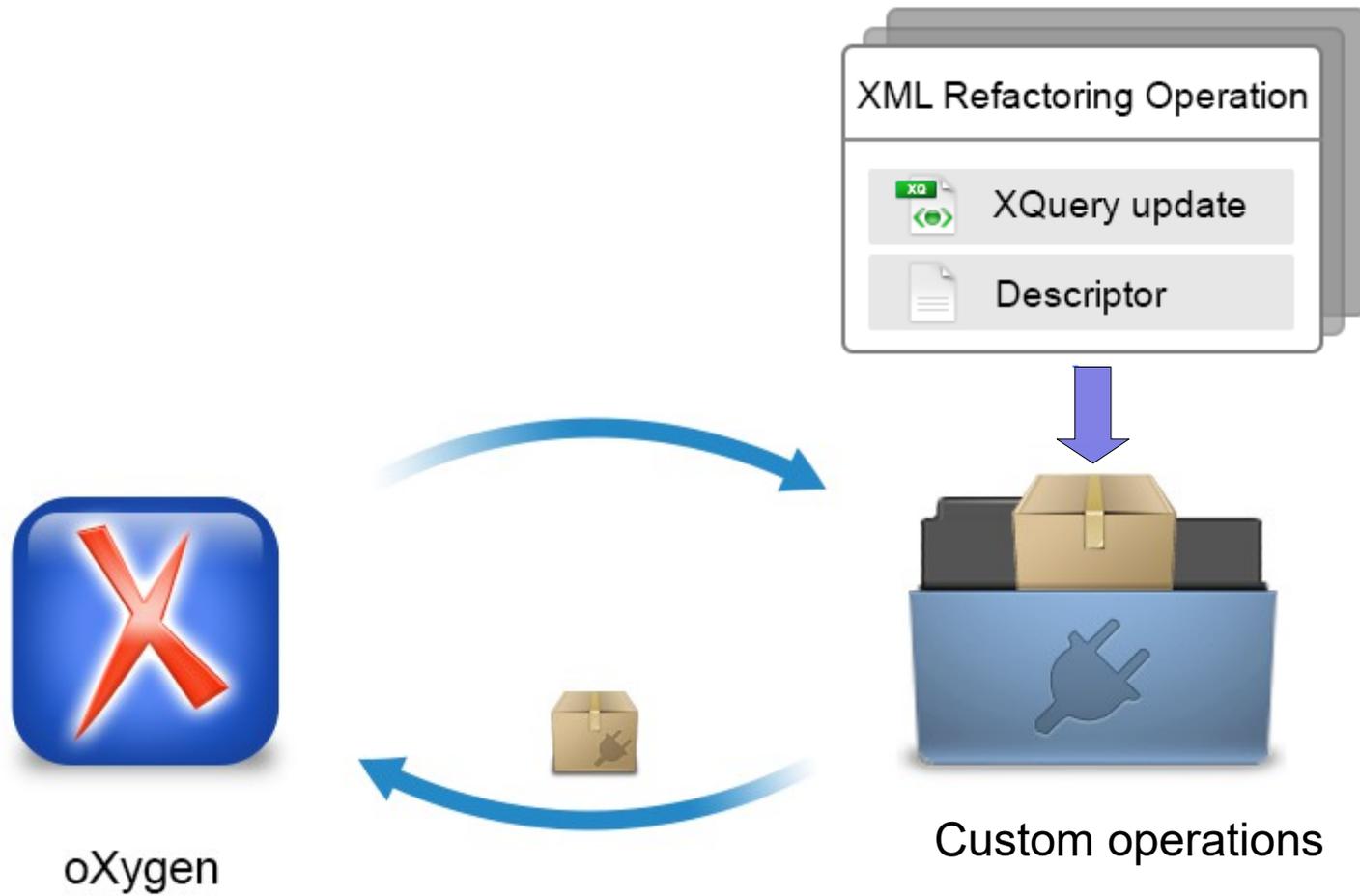
<refactoringOperationDescriptor
  name="Convert attribute to element">
  <description>Converts the specified attribute....</description>
  <parameters>
    <description>Specify the attribute...</description>
    <section label="Parent element">
      <elementParameter id="elemID">
        <localName
          label="Name"
          name="element_localName">
        </localName>
        <namespace
          label="Namespace"
          name="element_namespace">
        </namespace>
      </elementParameter>
    </section>
  </parameters>
</refactoringOperationDescriptor>
    
```



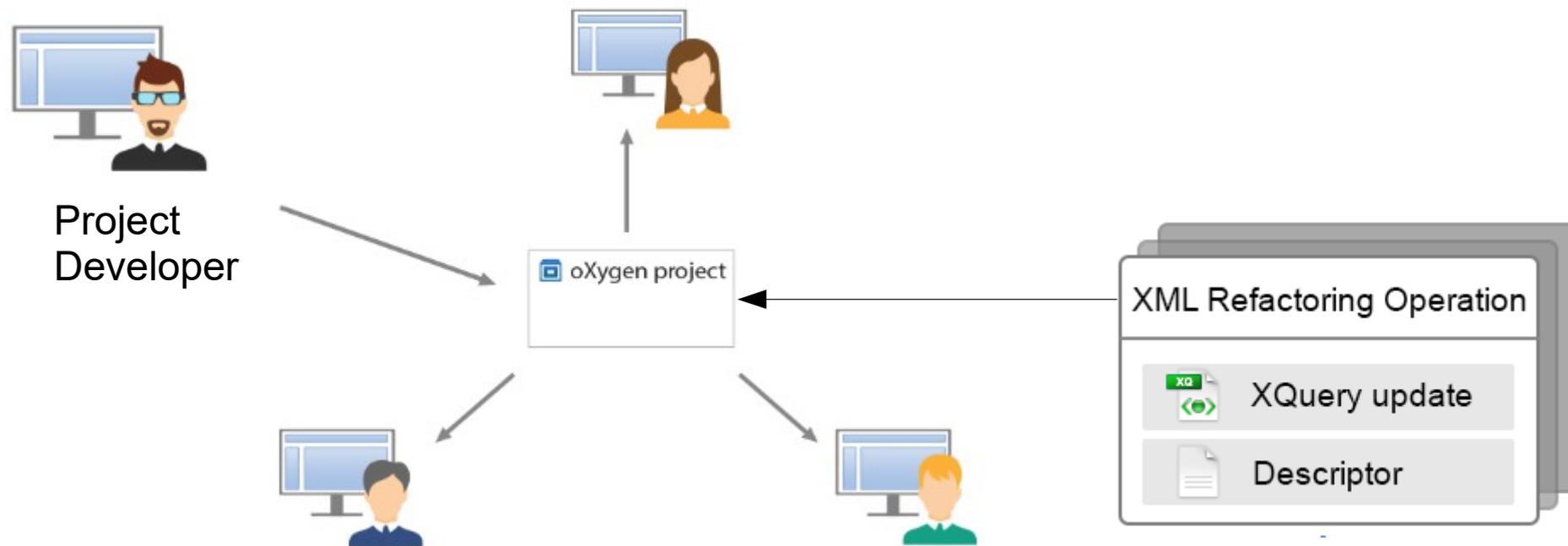
(: Local name of the attribute's parent element. :)  
 declare variable **\$element\_localName** as xs:string external;

(: Namespace of the attribute's parent element. :)  
 declare variable **\$element\_namespace** as xs:string external;

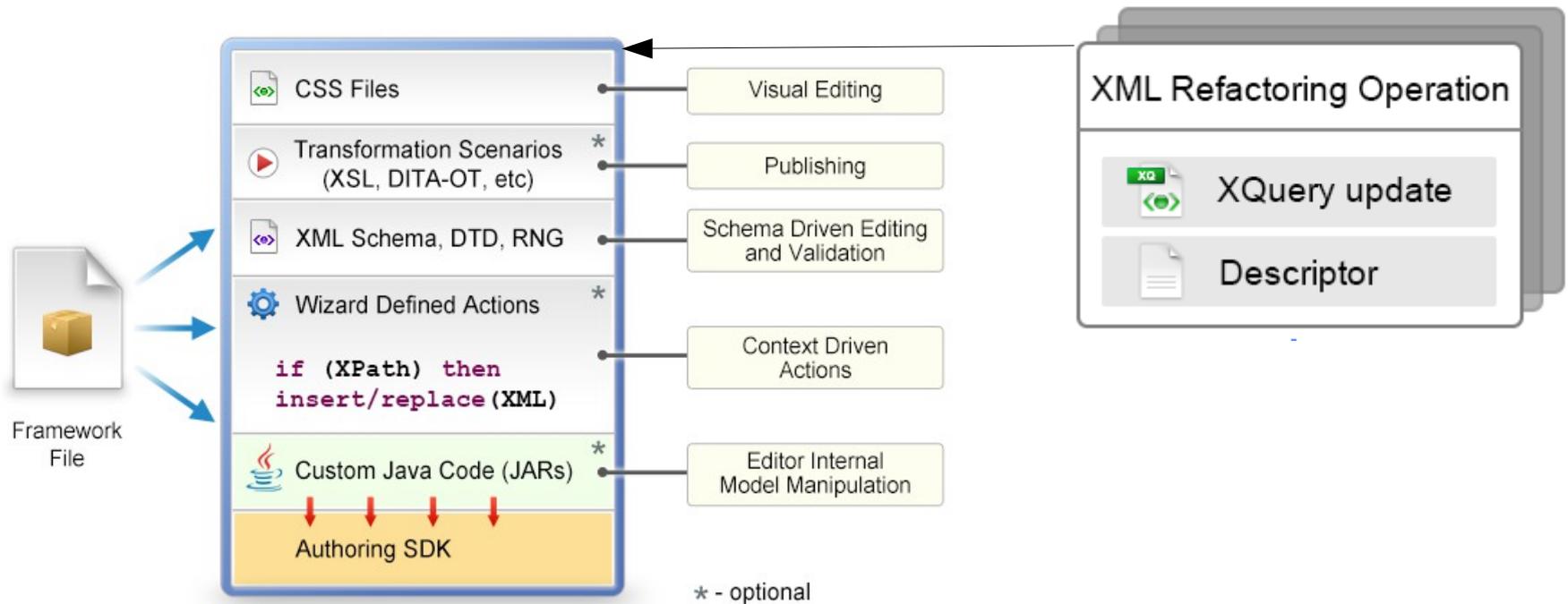
# Sharing



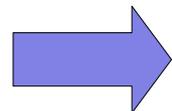
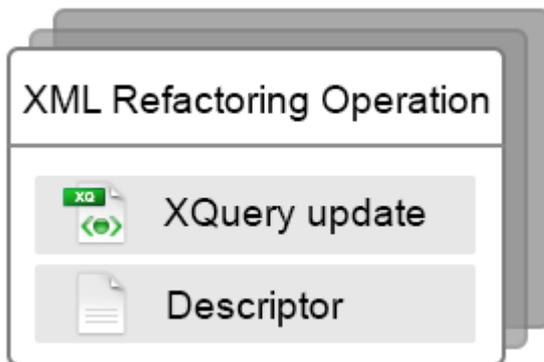
# Sharing - Options/Project



# Sharing - The framework

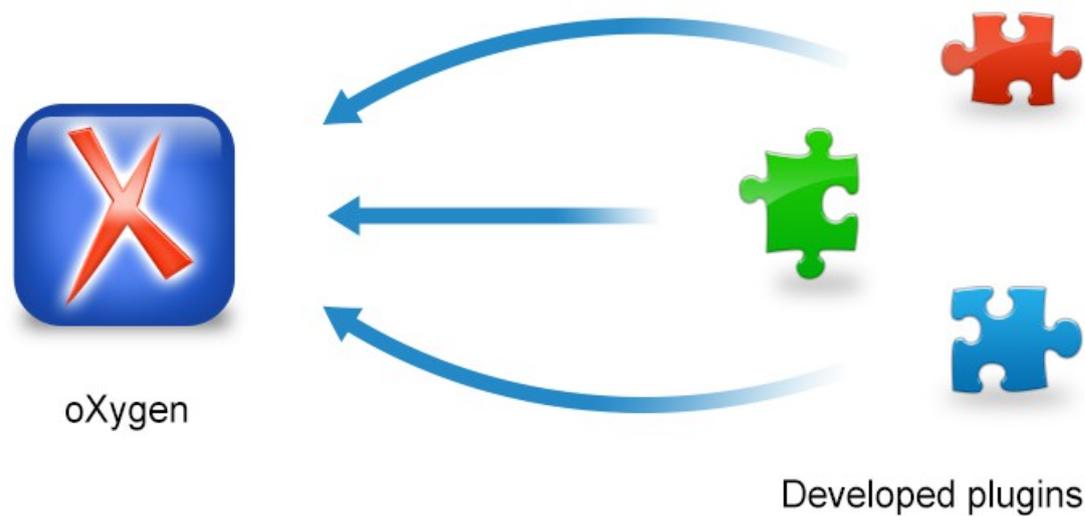


# Sharing - The framework



Name	Size	Modified
D:\projects\Xml\frameworks\test_cals	N/A	2015-05-29 12:16...
css	N/A	2015-05-29 12:16...
refactoring	N/A	2015-05-29 12:16...
convert-attribute-to-element.xml	2331	2015-05-20 14:08...
convert-attribute-to-element.xq	2031	2015-05-19 11:11...
root.framework	10424	2015-05-06 11:02...

# Sharing - oXygen plugin



# oXygen plugin descriptor

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE plugin PUBLIC "-//Oxygen Plugin" "../plugin.dtd">

<plugin
  id="refactoring.operations"
  name="Refactoring operations plugin"
  description="Contains operation descriptors and related scripts"
  version="1.0">
  <extension type="RefactoringOperationsProvider">
    <folder path="customDir"/>
    <folder path="customDir2"/>
  </extension>
</plugin>
```

# oXygen plugin descriptor

Name	Size	Modified
D:\Desktop\Presentations_framework\Pr...	N/A	2015-05-29 11:34:55
▲ customDir	N/A	2015-05-29 11:35:08
convert-attribute-to-element.xml	2331	2015-05-20 14:08:11
convert-attribute-to-element.xq	2031	2015-05-19 11:11:38
▲ customDir2	N/A	2015-05-29 11:35:30
convert-lists.xml	2331	2015-05-20 14:08:11
convert-lists.xq	2031	2015-05-19 11:11:38
plugin.xml	795	2015-05-29 11:34:41

# Useful links

Oxygen XML YouTube Channel, XML refactoring webinar:

<https://www.youtube.com/watch?v=NIXwpUa4HXY>

Oxygen User's Manual:

<https://www.oxygenxml.com/doc/versions/19.0/ug-editor/topics/refactoring-xml-documents-x-tools.html>

# Thank You!

## Questions?

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