

# Introduction to the oXygen XML Editor and Basic Editing Exercise

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# Introduction to the oXygen XML editor

For our exercises we're going to be using the oXygen XML editor, made by a Romanian company called SynchRo Soft. This has quickly become the market leader in XML editors, but I thought I should explain why we use it. There are other alternatives which you are free to use, but they don't have the vast array of features that oXygen does.

# Editor types

Editing tools cover a wide spectrum:

- Basic text editors
- General programmers' editors
- XML-aware programmers' editors
- XML-specific editors
- Word-processors which can export XML
- Data-entry forms
- Image-specific editors

it is likely that people in different roles need different tools.

## Things to look for in specialist XML editors

- schema-aware
- constraining element entry
- IDE features
- customizable
- validation, preferably continual
- Multiple display views (as tree, with tags, formatted etc)
- folding structures
- context-sensitive help

For XML editing, **oXygen**, Emacs, jEdit, XMetaL, XMLSpy, Stylus Studio, Arbortext Adept are all worth a look.

For image markup try **University of Victoria Image Markup Tool**.

## oXygen Features (1)

- Multiple modes for editing XML documents: Author (CSS based), Grid, Text
- TEI Support including: New document templates; Author mode CSS; Transformations to HTML and PDF
- Ability to add/extend/customise for other frameworks
- Available as an Eclipse plugin (Java IDE)
- Java API for developer add-ons

## oXygen Features (2)

- Support for all schema languages: such as Relax NG, Schematron, XML Schema, DTDs, NVDL, NRL
- Content completion based on TEI Relax NG schemas
- Tooltip documentation based on TEI Relax NG schemas
- NVDL easily validates TEI documents in multiple namespaces

## oXygen Features (3)

- XQuery directly against local/remote XML databases like eXist
- XSLT and FOP support for transformations to XML/HTML/PDF etc.
- WebDAV and FTP support for access to files on remote servers/CMS
- Built-in subversion client for collaborative version control and visual change management
- Spell checking support as you type that is *@xml:lang* aware
- Included graphical XML Diff to analyse differences between documents

## oXygen Features (4)

### **But maybe most important...**

- Multi-platform: oXygen is available on Windows, Mac OS X, Linux, Solaris, etc.
- They have an enlightened academic pricing policy (\$64 USD) (Oxford has a site license)
- The named-user based license allows the same user to use any oXygen distribution on any platform or machine: the same license covers you at work, laptop, and home.
- They are nice enough to give us trial licenses to teach workshops with, and have donated 5 free licenses which we will raffle off on Friday!



# oXygen

The screenshot displays the oXygen XML editor window. The title bar indicates the file path: `C:\Documents and Settings\computer admin\Desktop\SleepyHollow.xml`. The menu bar includes File, Edit, Find, Project, Perspective, Options, Tools, Debugger, Document, Window, and Help. The toolbar contains various icons for file operations, editing, and navigation. The XPath 2.0 dropdown is visible. The main editor area shows the XML document structure for `SleepyHollow.xml`, with line numbers 6 through 39. The XML content includes a `teiHeader` block with `author`, `title`, `publication`, and `source` elements, followed by a `text` block containing a `front` section with a `div` element. The `div` element contains a `head` section with `THE LEGEND OF SLEEPY HOLLOW.` and `FOUND AMONG THE PAPERS OF THE LATE DIEDRICH KNICKERBOCKER`, and a `lg` (list-group) element with four items: `<l>A pleasing land of drowsy head it was,`, `<l> Of dreams that wave before the half-shut eye;`, `<l>And of gay castles in the clouds that pass,`, and `<l> For ever flushing round a summer sky.`. The `div` element also contains a `trailer` element with the text `CASTLE OF INDOLENCE.`. The `body` section contains a `div` element with a `p` (paragraph) element containing the text: `IN the bosom of one of those spacious coves which indent the eastern shore of the Hudson, at that broad expansion of the river denominated by the ancient Dutch navigators the Tappan Zee, and where they always prudently shortened sail, and implored the protection of St. Nicholas when they crossed, there lies a small market-town or rural port, which by some is called Greensburgh, but which is more generally and properly known by the name of Tarry Town. This name was given, we are told, in former days, by the good housewives of the adjacent`. The right sidebar shows the Information panel with the TEI namespace (`http://www.tei-c.org`) and the Properties panel. The bottom status bar indicates the file path, a successful format and indent operation, the encoding `U+003C`, the ratio `1:1`, and the modified status. The Windows taskbar at the bottom shows the Start button and several open applications: Gmail, Windows Media Player, and oXygen.

```
<?xml version="1.0" encoding="UTF-8" ?>
<author>Washington Irving</author>
</title>
<publication>
  <p><!-- supply publication information-->
</p>
</publication>
<source>
  <p><!-- supply information about the source --></p>
</source>
</fileDesc>
</teiHeader>
<text>
  <front>
    <div>
      <head>THE LEGEND OF SLEEPY HOLLOW.</head>
      <head>FOUND AMONG THE PAPERS OF THE LATE DIEDRICH KNICKERBOCKER </head>
      <lg>
        <l>A pleasing land of drowsy head it was,</l>
        <l> Of dreams that wave before the half-shut eye;</l>
        <l>And of gay castles in the clouds that pass,</l>
        <l> For ever flushing round a summer sky.</l>
      </lg>
      <trailer>CASTLE OF INDOLENCE.</trailer>
    </div>
  </front>
  <body>
    <div>
      <p> IN the bosom of one of those spacious coves which indent the eastern shore of
the Hudson, at that broad expansion of the river denominated by the ancient
Dutch navigators the Tappan Zee, and where they always prudently shortened sail,
and implored the protection of St. Nicholas when they crossed, there lies a
small market-town or rural port, which by some is called Greensburgh, but which
is more generally and properly known by the name of Tarry Town. This name was
given, we are told, in former days, by the good housewives of the adjacent
```

# Basic oXygen Editing

The screenshot displays the oXygen XML Editor interface. The main window shows the XML document `technology1.xml` with the following content:

```
<body>
<div>
<head>Summary</head>
<p>How does a TEI user do the following? <list>
  <item>Data capture</item>
  <item>Editing</item>
  <item>Schema design</item>
  <item>Other forms of validation</item>
</list>
<p><a
</div>
<div rend="slide">
  <head>The Two Things To Do</head>
  <list>
    <item>capture the text</item>
    <item>create the markup</item>
  </list>
  <p>Often they occur simultaneously; often not.</p>
  <p>Note that the markup does not necessarily have to be in the same
  file.</p>
</div>
```

The `<a>` element is selected, and a tooltip explains its function: "(added span of text) marks the beginning of a longer sequence of text added by an author, scribe, annotator or corrector (see also add)".

The `Outline` pane on the left shows the document structure:

- www.tei-c.org/ns/1.0
- ter
- y
- div
  - head Summary
  - p How does a TEI user do the following?
  - a
  - div "slide"
  - div "slide"
  - div "slide"
  - div "slide"
  - div "slide"
  - div

The status bar at the bottom indicates the file path: `/home/rahtz/TEI/tei.oucs.ox.ac.uk/Talks/2006-09-methNet/Talks/technology1.xml`, and the message: "Associate Schema - successful".

# Adding An Element

The screenshot displays the Oxygen XML Editor interface with the following components:

- Project Panel:** Shows a project structure with folders like 'css', 'debugger', 'docbook', 'fo', 'import', 'jsp', 'nvd', 'relaxng', 'schematron', 'schematronSO', 'svg', 'tei', 'wsdl', 'xhtml', 'xquery', 'personal-schema.xml', and 'personal.dtd'.
- Outline Panel:** Displays the document structure: 'TEI' (http://www.tei-c.org/ns/1.0) containing 'teiHeader' and 'text'.
- Editor:** Shows the XML code for 'pushkin-1.xml'. The code includes a TEI header with title 'Pushkin', publication information, and a source description. A yellow callout box highlights the 'encodingDesc' element, stating: "(encoding description) documents the relationship between an electronic text and the source or sources from which it was derived." The main text of the document is in Russian, starting with 'Я не...'.
- Attributes Panel:** Shows the attributes of the selected 'teiHeader' element, including 'http://www.tei-c.org/ns/1.0' and various attribute values like 'ana', 'copyOf', 'corresp', 'exclude', 'n', 'next', 'prev', 'rend', 'rendition', 'sameAs', 'select', 'synch', 'type', and 'xml:base'.
- Info Panel:** Provides information about the selected element, including its description, resource, system ID, and location.
- Errors Panel:** Shows a warning message: 'The content of elements must consist of well-formed character data or markup.'

The status bar at the bottom indicates the file path: '/O1/home/lo/oxTEI/Talks/2008-08-kazan/Resources/Untitled3.xml' and the current date and time: 'Tue 12 Aug, 14:57'.

# Adding An Attribute

The screenshot displays the oXygen XML Editor interface with the following components:

- Project Panel:** Shows a file tree on the left with folders like 'css', 'debugger', 'docbook', 'fo', 'import', 'jsp', 'nvd', 'relaxng', 'schematron', 'schematronSO', 'svg', 'tei', 'wsdl', 'xhtml', 'xquery', 'personal-schema.xml', and 'personal.dtd'.
- Outline Panel:** Shows the document structure with 'TEI' as the root, containing 'teiHeader', 'fileDesc', 'revisionDesc', 'change', and 'text'.
- Main Editor:** Displays the XML code for 'pushkin-1.xml'. The code includes a TEI header with title, publication, and source information, followed by a revision description and a change element. The change element contains a text block with Russian text about Pushkin's poem.
- Attributes Panel:** A dropdown menu is open for the 'change' element, showing a list of attributes: 'when', 'ana', 'copyOf', 'corresp', 'exclude', 'n', and 'next'. A tooltip points to the 'when' attribute, stating: 'supplies the date of the change in standard form, i.e. YYYY-MM-DD.'
- Errors Panel:** At the bottom, it shows a warning: 'E [oXDWL] element "figure" from namespace "http://www.tei-c.org/ns/1.0" not allowed in this context'.
- Status Bar:** At the very bottom, it shows the file path, system ID, and the current date and time: 'Tue 12 Aug, 15:11'.

# Surround With Element

The screenshot shows the XMLSpy editor with the file 'SleepyHollow.xml' open. The text in the editor is as follows:

170 the dominant dignity and absolute sway with which he lorded it in his little  
171 empire, the school, and became wonderfully gentle and ingratiating. He found  
172 favor in the eyes of the mothers, by petting the children, particularly the  
173 youngest; and like the lion bold, which whilom so magnanimously the lamb did  
174 hold, he would sit with a child on one knee, and rock a cradle with his foot for  
175 whole hours together. </p>  
176 <p> In addition to his other vocations, he was the singing-master of the  
177 neighborhood, and picked up many bright shillings by instructing the young folks  
178 in psalmody. It was a matter of no little vanity to him, on Sundays, to take his  
179 station in front of the church gallery, with a band of chosen singers; where, in  
180 his own mind, he completely carried away the palm from the parson. Certain it  
181 is, his voice resounded far above all the rest of the congregation; and there  
182 are peculiar quavers still to be heard half a mile off, of the mill-pond, on a still  
183 Sunday morning, which are ascribed to the descent of the nose of  
184 Ichabod Crane. Thus, by that ingenious way which is  
185 commonly denominated "by hook and by crook," the worthy pedagogue got on  
186 tolerably enough, and was thought, by all who understood nothing of the labor of  
187 headwork, to have a wonderfully easy life of it. </p>  
188 <p> The schoolmaster is generally a man of some importance in the female circle of a  
189 rural neighborhood; being considered a kind of idle gentlemanlike personage, of  
190 vastly superior taste and accomplishments to the rough country swains, and,  
191 indeed, inferior in learning only to the parson. His appearance, therefore, is  
192 apt to occasion some little stir at the tea-table of a farmhouse, and the  
193 addition of a supernumerary dish of cakes or sweetmeats, or, peradventure, the  
194 parade of a silver tea-pot. Our man of letters, therefore, was peculiarly happy  
195 in the smiles of all the country damsels. How he would figure among them in the  
196 churchyard, between services on Sundays! gathering grapes for them from the wild  
197 vines that overrun the surrounding trees; reciting for their amusement all the  
198 epitaphs on the tombstones; or sauntering, with a whole bevy of them, along the  
199 banks of the adjacent mill-pond; while the more bashful country bumpkins hung  
200

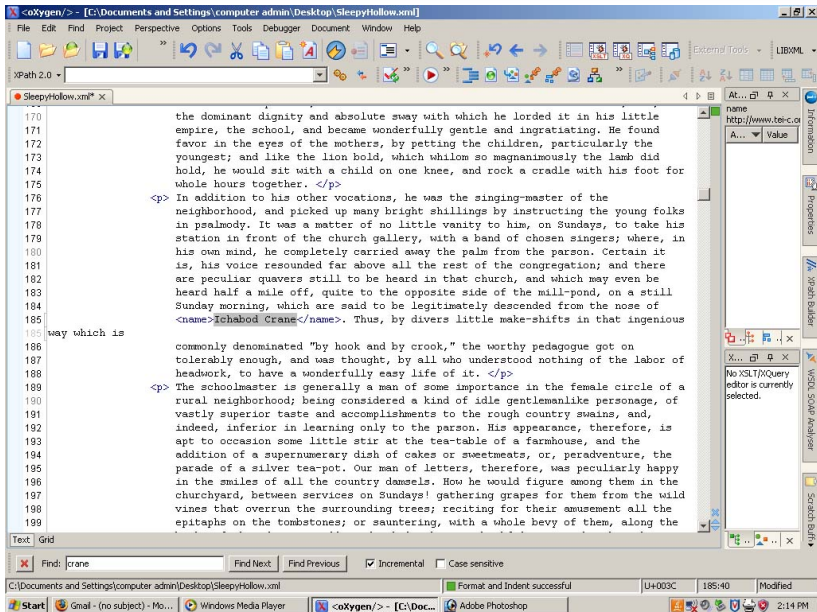
The 'Surround With Element' dialog box is open, with 'Tag' selected in the 'Specify the tag:' dropdown menu. The 'OK' button is highlighted.

Find: crane Find Next Find Previous ☒ Incremental ☐ Case sensitive

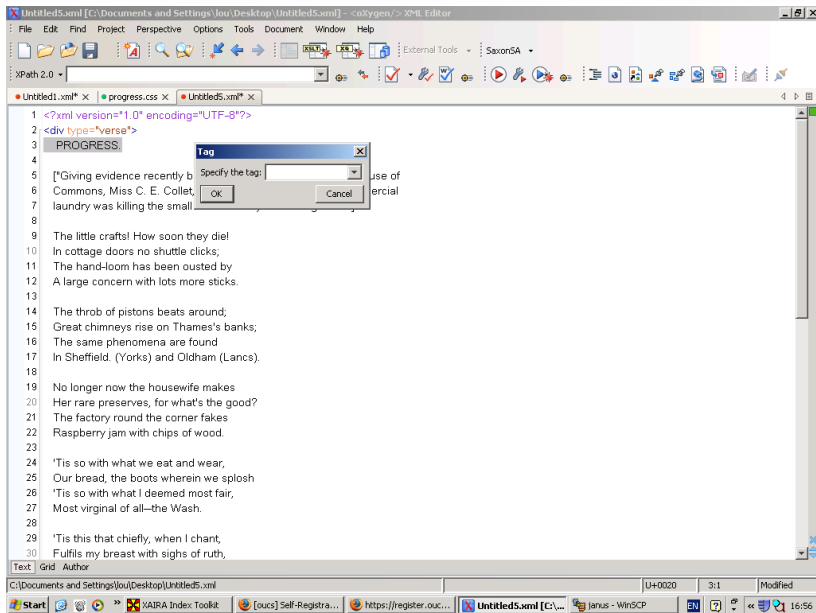
C:\Documents and Settings\computer admin\Desktop\SleepyHollow.xml Format and Indent successful U+002E 185:34 Modified

Start Gmail - (no subject) - Mo... Windows Media Player <XMLSpy> - [C:\Doc... Adobe Photoshop 2:13 PM

# Surround With Element Result



# Another Surround With Element



# Or With Russian Text

The screenshot shows the oXygen XML Editor interface. The main window displays an XML file named 'Untitled1.xml' with the following content:

```
<?xml version="1.0" encoding="UTF-8"?>
<div type="verse">
  К***
  Я помню чудное мгновенье:
  Передо мной явилась ты,
  Как мимолетное виденье,
  Как гений чистой красоты.
  В томленьях грусти безнадежной,
  В тревогах шумной суеты,
  Звучал мне долго голос нежный
  И снились милые черты.
  Шли годы. бурь порыв мятежный
  Рассеял прежние мечты,
  И я забыл твой голос нежный,
  Твои небесные черты.
  В глуши, во мраке заточенья
  Тянулись тихо дни мои
  Без божества, без вдохновенья,
  Без слез, без жизни, без любви.
  Душе настало пробужденье:
  И вот опять явилась ты,
  Как мимолетное виденье,
  Как гений чистой красоты.
  И сердце бьется в упоенье,
  И для него воскресли вновь
  И божество, и вдохновенье,
  И жизнь, и слезы, и любовь.
</div>
```

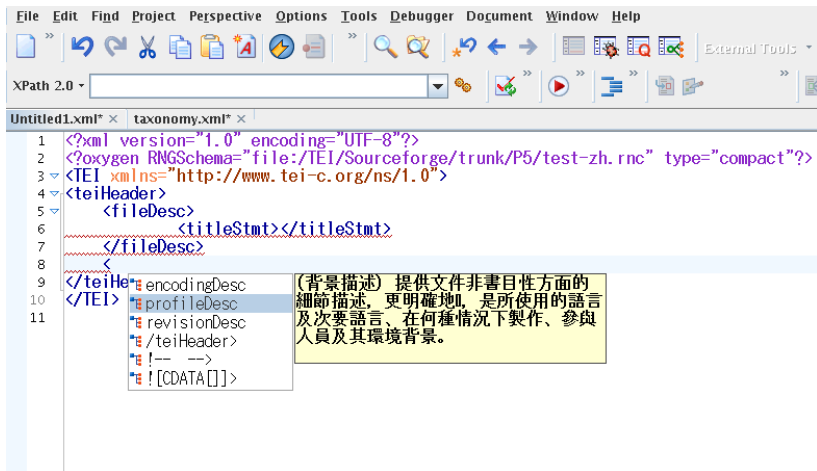
A 'Tag' dialog box is open, showing the tag 'head' selected from a dropdown menu. The dialog has 'OK' and 'Cancel' buttons.

The left sidebar shows a project structure with files like 'sample.xpr', 'css', 'debugger', 'docbook', 'fo', 'import', 'jsp', 'nvd', 'relaxng', 'schematron', 'schematronSO', 'svg', 'tei', 'wsdl', 'xhtml', 'xquery', 'personal-schema.xml', 'personal.dtd', 'personal.xml', 'personal.xsd', 'personal.xsl', and 'simpleLayoutSample.xpr'.

The bottom status bar shows the file path: '/O1/home/lou/oxTEI/Talks/2008-08-kazan/Resources/Untitled1.xml'.



# Or If You Generate Your TEI Schema In Chinese...



# XPath Searching Built In

The screenshot shows the SaxonSA XML editor interface. The main window displays the XML document `1914_July_1.xml` with the following content:

```

393 <p>[The rest of this communication is
394 omitted owing to considerations of
395 space.—<hi rend="sc">Ed</hi>.]</p>
396
397 </div>
398
399 <pb xml:id="V147_03" n="3"/>
400
401 <div type="cartoon">
402
403 <figure>
404 <graphic width="800px" url="images/003.png"/>
405 <head>WHEN THE SHIPS COME HOME.</head>
406
407 <p>Greece. <said>'ISN'T IT TIME WE STARTED FIGHTING
408
409 <p>Turkey. " <said>YES, I DARESAY. HOW SOON COULD YOU BEGIN
410
411 <p>Greece. " <said>OH, IN A FEW WEEKS</said>." </p>
412
413 <p>Turkey. " <said>NO GOOD FOR ME. SHAN'T BE READY TILL TH

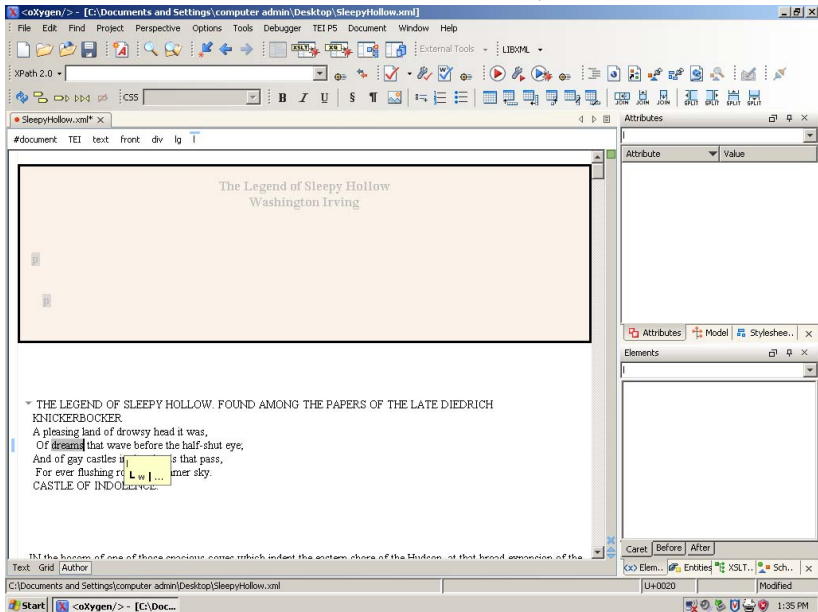
```

The XPath `2.0` search bar shows the expression `//figure`. The results pane at the bottom displays a table of 19 items:

Info	Description - 19 items	Resource	System ID
-	/TEI[1]/text[1]/body[1]/figure[1] -	1914_July_1.xml	file:/home/rahtz/TEI/tei.oucs.ox.ac.uk/Tal
-	/TEI[1]/text[1]/body[1]/figure[2] -	1914_July_1.xml	file:/home/rahtz/TEI/tei.oucs.ox.ac.uk/Tal
-	/TEI[1]/text[1]/body[1]/div[4]/figure[1] -	1914_July_1.xml	file:/home/rahtz/TEI/tei.oucs.ox.ac.uk/Tal
-	/TEI[1]/text[1]/body[1]/div[5]/figure[1] -	1914_July_1.xml	file:/home/rahtz/TEI/tei.oucs.ox.ac.uk/Tal
-	/TEI[1]/text[1]/body[1]/div[7]/figure[1] -	1914_July_1.xml	file:/home/rahtz/TEI/tei.oucs.ox.ac.uk/Tal
-	/TEI[1]/text[1]/body[1]/div[11]/figure[1] -	1914_July_1.xml	file:/home/rahtz/TEI/tei.oucs.ox.ac.uk/Tal

The XPath search bar at the bottom shows the expression `XPath - 1914_July_1.xml`. The status bar at the bottom indicates the current file is `/home/rahtz/TEI/tei.oucs.ox.ac.uk/Talks/2008-07-oxford_summer_school/Exercises/data/1914_July_1.xml` and the XPath search was successful.

# Tagless editing in oXygen



## Why use oXygen?

1. Is probably the best and most complete XML development IDE available.
2. Ready to use support for a large number of document types (including TEI).
3. Continuous and active development with proactive user community
4. Free support.  
oXygen provides a very responsive support for all its users free of charge.
5. Huge academic discounts and additional discounts for TEI members.

There is a huge discount for the Academic licenses of oXygen, that costs \$64 with the same set of features as the Professional license that costs \$449. TEI members benefit also of an additional 20% discount.



## Basic Editing Exercise

Now if I have time I'll do a quick demonstration of the kind of thing you are shortly going to be asked to do in the exercise.