

## ***XML Editing with Oxygen***

### ***Getting started, tips and tricks***

Oxygen is the industry-standard application for XML editing. There are other XML editors available (<http://www.xml.com/pub/pt/3> currently lists 149 of them), but these are some good reasons for using Oxygen:

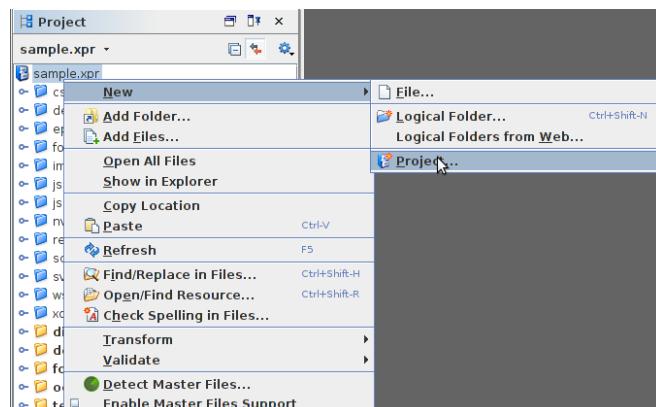
- It's cross-platform (Windows, Mac and Linux)
- It's mature
- It has built-in support for TEI
- Its developers are involved in the TEI community
- It's more fully-featured than any other editor
- Virtually all digital humanists use it
- Many labs in UVic have it installed
- It's cheap if you have to buy it

### ***Setting up a project in Oxygen***

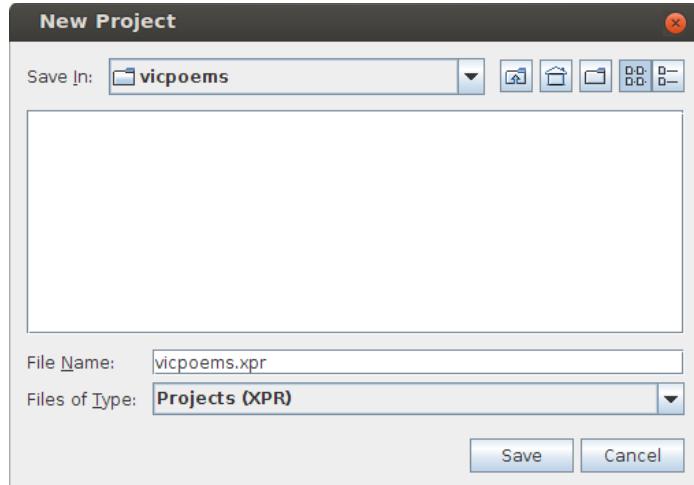
Even the simplest XML project consists of more than one file; at the very least, you'll have an XML file and a schema to validate it against. It makes sense to keep your files in one place, and to be able to browse them easily from inside Oxygen. This is done by setting up a project. First, you'll need to organize your files.

- Put all your files in one location.
- Make sure they're all named correctly.
  - NO SPACES!
  - NO PUNCTUATION!

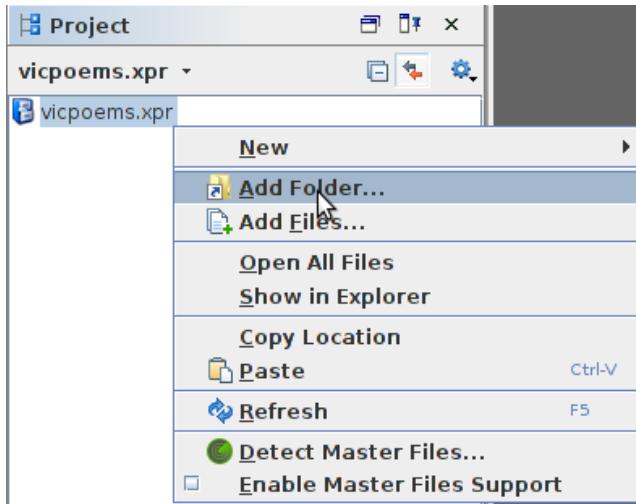
When you first start Oxygen, it opens with a default “sample project”. You need to create your own project file, pointing at your own project materials. Let's imagine you have a project called “Victorian Poems” and your files are all in a folder called **vicpoems**. Right-click on **sample.xpr** and choose **New / Project...**



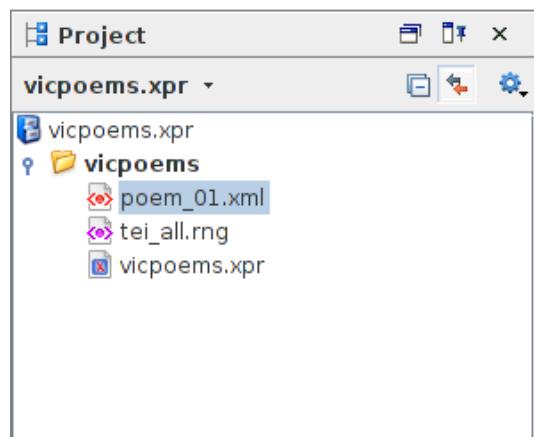
Navigate to your **vicpoems** folder; that's where we're going to create the project file. Call the file **vicpoems.xpr**.



Now you have a project. But there's nothing in it; we need to add the project folder itself, so that we can see all the files. Right-click on the project file and choose **Add Folder...**



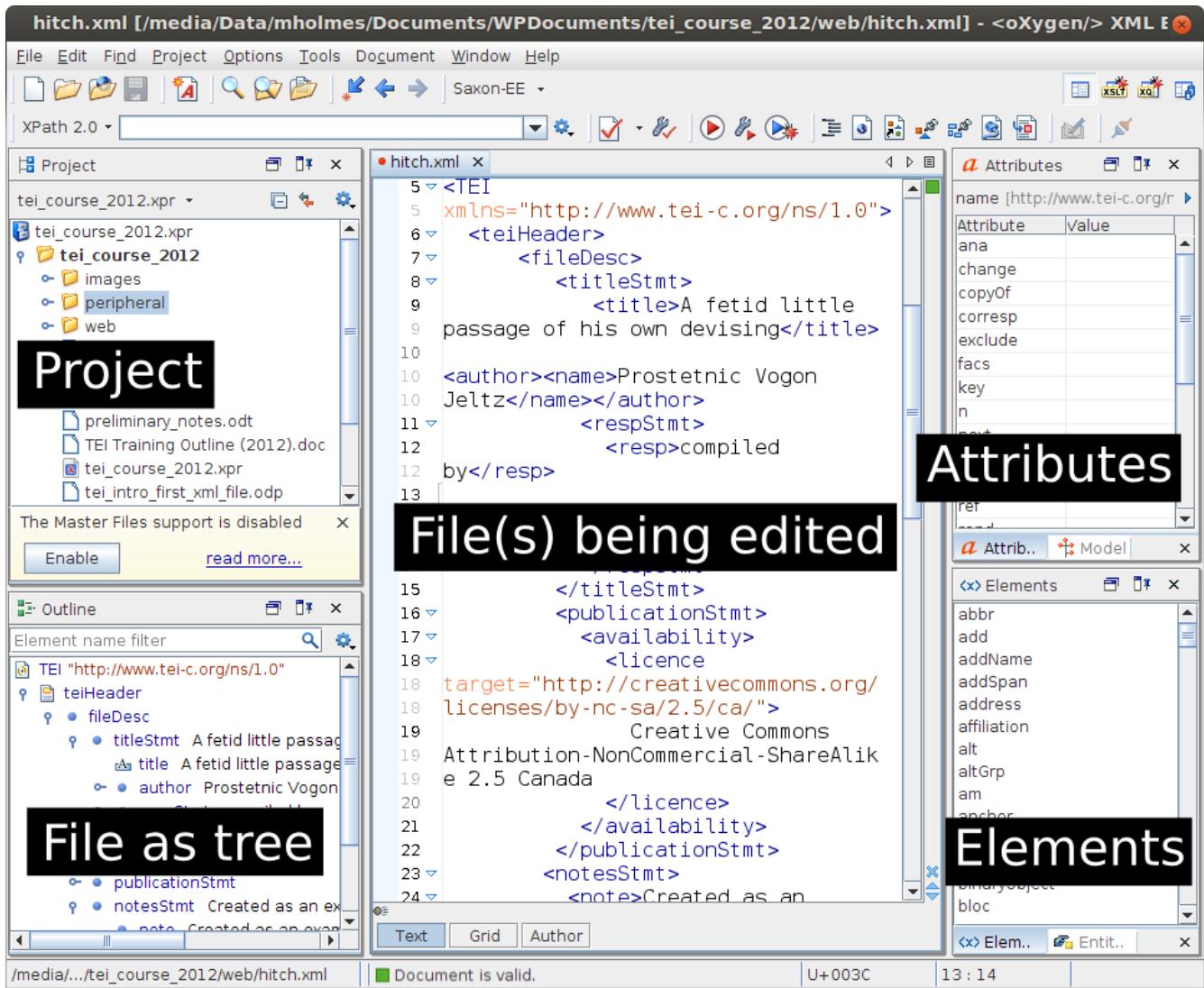
Choose your project folder (in this case, **vicpoems**). You should see your project folder as a tree that you can expand to see all the files in it. Now you can open a file by double-clicking it in the project panel. Oxygen will remember your project and reload it next time you start the program; it will also reload any files you had open the last time you were working.



## The Oxygen Layout

The Oxygen program is based on the programming IDE Eclipse. This means it's highly configurable; you can easily change the layout to suit your working methods and preferences. It also means it's very complicated and full of features and panels whose purpose is not obvious. This is a quick tour of the panels we think are most important and useful.

If you have a big screen, you can use the default Oxygen layout, which looks like this:



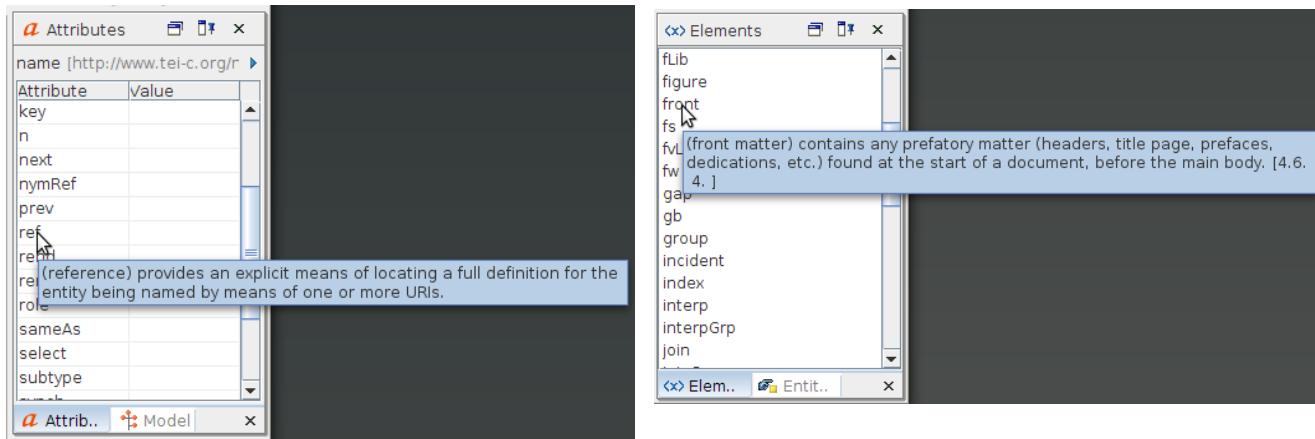
We've already looked at the Project panel. Below it is the Outline panel, which shows the file that you're currently editing as a tree, expanding downwards and to the right, like a traditional file manager. In the middle is the editing area. This screenshot shows one file open, but you can have multiple files open at the same time.

On the right, you'll see the Attributes and Elements panels. Like the Outline panel, these are dynamic; they will change as you move your cursor from one place to another in the document. The Attributes panel will always show you the list of attributes which is available for the element where your cursor is.

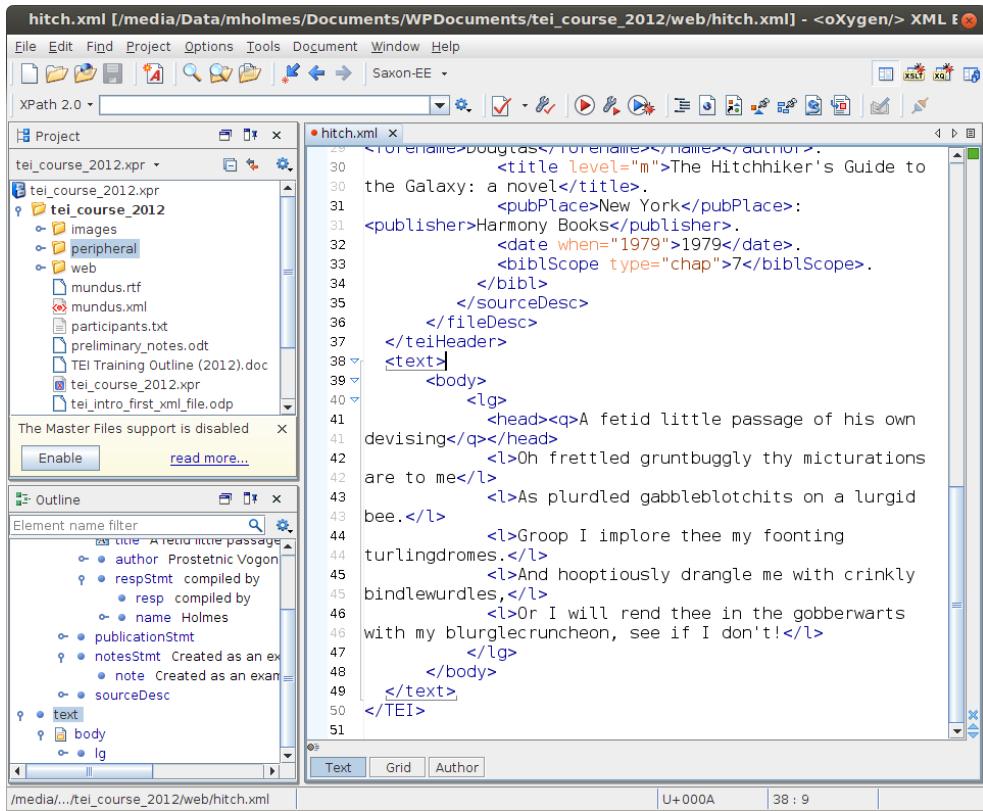
currently located. Similarly, the Elements panel shows the list of elements which is allowed in the current cursor position.

### Note that this only works when your XML file is linked to a working schema.

The Attributes and Elements panels have a very handy feature: if you put your mouse over an item in the list, you'll see the definition of that item from the TEI schema:

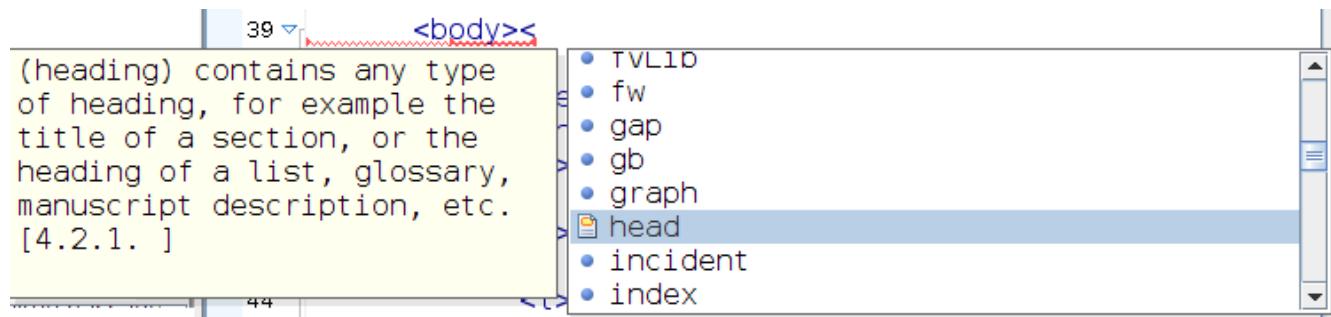


If you're working on a smaller screen, the default layout for Oxygen can be too much; you end up with not enough space for actually editing your files. If that's the case, you can close all the panels on the right to get more space:

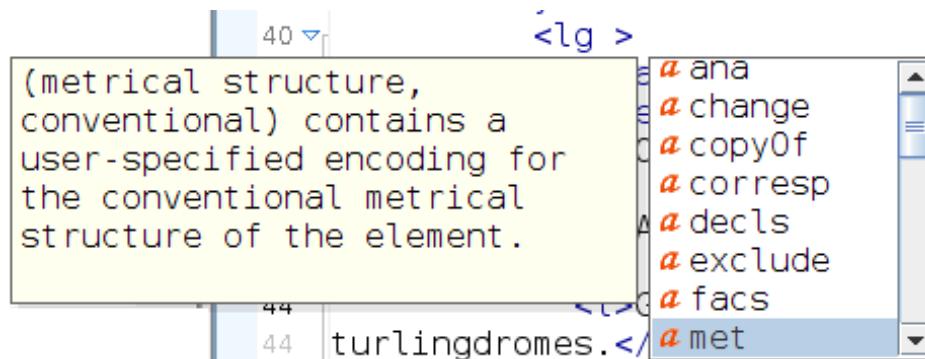


Any panel you've closed can be re-opened by clicking on Window / Show View.

Even without the element and attribute panels, you can still see information about elements and attributes while you're editing. If you type an open bracket in your document, Oxygen knows you're starting to type an element, so it will show you a list of all the elements available at that position:



Similarly, if you put your cursor inside an opening tag, after the end of the element name, and type a space, Oxygen will give you information about all the attributes available:



## ***Creating a new TEI file***

There are two ways to create a new TEI file: you can use your own project schema, or you can use one of the existing TEI schemas built into Oxygen.

### **If you have your own schema:**

1. Click on **File / New**
2. Choose **New Document / XML Document**
3. Click on **Customize**
4. In the **Schema URL** box, navigate to the location of your schema
5. Click on **Create**

This will give you a brand-new TEI file, linked to your schema. It will probably also have some content, although probably not enough to create a valid file.

### **If you want to use one of the built-in schemas:**

1. Click on **File / New**

2. Click on **Framework templates / TEI P5** and choose a template (e.g. **All [TEI P5]**)
3. Click on **Create**

Again, this will give you a basic TEI file linked to the appropriate schema.

## **Validating your file**

You should validate your file *often*. Whenever you happen to stop typing, in fact. To validate your file, click on this little button:



or Document / Validate / Validate. You should see something reassuring like this at the bottom of the window:

Document is valid.

If you see this instead:

Validation - failed. Errors: 1

**STOP EDITING IMMEDIATELY.** If you carry on working, you will compound errors to the point where it can be very difficult to recover from them.

When validation fails, you will see a report in a new panel at the bottom of Oxygen, which explains the problems. The report may or may not be helpful. For instance, you may see something like this:

- **E [Jing] element “hed” not allowed anywhere; expected element “ab”, “addSpan”,...**

“Jing” is the name of one of the programs Oxygen uses to validate XML. In this case, it's telling you that you've inserted an element `<hed>`, but the schema quite rightly says that no such element exists. Clearly it's a typo; you probably meant `<head>`. Double-click on the error report to go directly to the error in your XML file. You'll see something with a squiggly red line under it. This is most likely where you need to make your fix.

Sometimes it's not so easy to figure out the problem. Here are some strategies you can try which might help:

- Check that the file is well-formed (**Document / Validate / Check Well-Formedness**). Sometimes it's not just that you've typed bad TEI; you might have typed something that isn't even correct XML.
- Try undoing recent changes. Oxygen's Undo history is typically set to remember the last 200 changes, so you can go back quite a long way till you find the problem.
- Try cutting out whole sections of the file and stashing them in a separate temporary document until you find which area has the problem.

Above all, don't start editing again until you have a valid document.

## **Useful keyboard shortcuts**

Oxygen has dozens of keyboard shortcuts, under **Options / Menu Shortcut Keys**. These are some of the most useful ones:

- Select some text, and press **Control + e**. You'll be able to choose an element to put around the text.
- Put your cursor in an element, and press **Control + Alt + x**. The tag will disappear, leaving its contents.
- Put your cursor in an element, and press **Control + Shift + [comma]**. The tag will be commented out. Press the same thing again, and the comment will disappear.
- Press **Control + Shift + V** to validate your file.
- Press **Control + Shift + W** to check well-formedness.
- Press **Control + Shift + Y** to toggle Line Wrap. Mostly, when editing TEI documents, we want to have line wrap turned on, but it's off by default in Oxygen.

There are lots of things that you can set up a keyboard shortcut for. Here's an example:

- Go to **Options / Menu Shortcut Keys**.
- Type "maximize". You should see **Maximize/Restore Editor Area**.
- Click on the description, and then on **Edit**.
- Type the **F11** key, and press **OK**.

Now hit F11 a couple of times while you're editing. It hides then restores all the surrounding panels. This can be very handy if you're editing a large document on a small screen.

## **Other useful features**

Oxygen has a very rich feature set, but here are a couple of features you'll find useful in most projects:

- **Find All.** Hit **Find / Find Replace** (or **Control + f**) to see the find box. Try **Find All**. You'll get a list of hits in the window at the bottom. Clicking on each hit will take you to it in the document.
  - Tip: If you're using this to make changes, then make your changes *from the bottom up*. If you make changes from the top of the document, the other hits will no longer point at the right location in the document, because the offsets have changed.
- **Find / Replace in Files.** Right-click on a folder in your Project panel, and click on **Find / Replace in Files**. You'll be able to search the entire folder, and get back a list of results just like **Find All**, but grouped into files. Double-click on a hit to open the file and jump to the hit location.
- **The XPath box.** In the top left, near the File menu, is a text box labelled **XPath 2.0**. Type **//p** in this box and press **Return** to find all the **<p>** tags, or **//@type** to find all the type attributes.