Creating Web-based Tutorials with XML

By Darren Borefoot

One of the earliest promises of XML was the separation of content from format. Unlike HTML and most proprietary document formats, what you wrote would be completely separate from the appearance of your finished document. Furthermore, XML could be used to describe content—to give information about what you were writing. Fifteen years later, technical writers are still waiting for the adoption of this Utopian vision. Companies all over the world may be using XML to store and exchange data, but the majority of writers seem to be stuck with Microsoft Word, FrameMaker and, when those fail, Notepad.

A team at IBM developerWorks (IBM’s research center for programmers), however, has developed a tool that illustrates the heady promise of XML. Their goal was to simplify and streamline the development process for the online tutorials that are hosted on the developerWorks Web site. As in many companies, tutorial creators not only have to be good at writing but also be familiar with printing processes, desktop publishing, Web design, and HTML authoring. The tool’s team leader, Doug Tidwell, says, “When we built our first tutorials at developerWorks a couple of years ago, they were incredibly tedious to create...a great deal of the tutorial-building process was hand coded and error prone.”

IBM resolved those issues with the whimsically named Toot-O-Matic. It’s an XSLT (extensible style sheet transformation language) and Java application that enables writers to focus on writing while avoiding the associated formatting and conversion issues. When writing the tutorials, authors use a restricted set of HTML and XML tags to determine the formatting and organization.

For example, each HTML page in a tutorial is defined by a <panel> tag. Within each panel, authors use familiar HTML tags such as <p>, <h1>, and <i> to define how their text will look. A group of related panels are set inside a <section> tag and the titles of these sections make up the table of contents for the tutorial.

Toot-O-Matic converts this XML file to a Web-based tutorial with custom graphics, two PDF files, and a zip file. Toot-O-Matic generates the tutorial (a series of interlinked HTML pages) based on a group of XML files (several XSL files, a DTD, and an XML Schema file). These files are highly customizable, enabling users to fit the tutorials into existing product or Web-site frameworks.

At Cape Clear Software, we’ve used Toot-O-Matic to create more than a dozen Web-based tutorials. The following section of an XML file shows a little of the markup for the first content panel of one of our tutorials.

```xml
<title>Exposing Java Classes with CapeConnect Three</title>
<section id="cv">
  <title>Overview</title>
  <panel id="set">
    <title>Summary of Task</title>
    <body>
      <text-column>
        <p>This tutorial uses an example to demonstrate</p>
        how to use &lt;a href="http://www.capeclear.com/products/capeconnect/index.shtml" target="_blank">CapeConnect Three</a> to expose Java classes as Web services. These services can then be accessed from any SOAP client, for example, a SOAPDirect client. In this example, you expose a simple stock trading system as a Web service. You begin the tutorial with the Java classes that implement the system and then construct a Web service based on these classes.
      </text-column>
    </body>
  </panel>
</section>
```
So, the title of this tutorial is "Exposing Java Classes with CapeConnect Three"; the title of this section is "Overview"; and this panel is called "Summary of Task." The screen shot shows the tutorial page generated in a Web browser.

In addition to generating the HTML pages, Toot-O-Matic generates PDF files in both A4 and letter sizes. These PDF files aren't particularly fancy, but you can modify their output using one of the configuration files and they are satisfactory as a supplementary version of the content. In the example, these alternative formats are accessed using the buttons in the upper right portion of the window.

The tutorial also includes a zip file that contains the entire tutorial. This encourages users to send the tutorial to a colleague. Unfortunately, the zip file does not contain a zip file of itself (there is a sort of Through the Looking Glass logic problem there), so the zip file button works only once.

Toot-O-Matic is a command-line tool. That is, it has no graphical user interface. This may prove intimidating to those who are more comfortable with user-friendly Microsoft Word and its siblings. Additionally, you need a basic understanding of XML files and related technologies (schemata and style sheets), though not necessarily Java or XSLT. That said, if you're keen to learn about these technologies, Toot-O-Matic provides a real-world introduction. You can download Toot-O-Matic at http://www6.software.ibm.com/dl/deworks/dw-tootomatic-p.

As an open-source (and therefore free) tool, Toot-O-Matic has proved a bonus to our documentation department. With a little customization, we've been able to create professional looking and effective tutorials with a minimum of fuss and cost. While it may not complete the idealistic promise of XML, Toot-O-Matic demonstrates the real-world application of its principles.

The author is a Canadian currently working at Cape Clear Software in Dublin, Ireland. His goals while working abroad are seeing the great cathedrals of Europe and introducing the great frozen game (ice hockey) to counties Wicklow and Cork. You can contact him with comments or questions at darren@darrenbarefoot.com.

What’s Happening to Language?


In the end, writing—no matter how conversational the style—is writing. That means it is permanent. In speech, to be casual is to be friendly. In writing, to follow the rules is to be clear. To "talk it over" means to weigh and test; to put something into "black and white" means to decide, to freeze the thought. Spoken English may soften the strictures of written English, but the need for rules endures. There's a time to say "well, kind of" and a time for writing to right wrongs.