Title:

"Distributed Learning Environment Using XML Templates"

Theme:

SHARING: … and Distance Education

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Abstract:

The Carinthia Tech Institute (CTI) offers an evening study program for working students, setting an increasing demand for computer-based and internet-based training courses.
Central part of the eLeraning environment is a Hyperwave Information Server [1], which fulfils the functions of user administration and dynamical design of documents. The server furthermore works together with other specialized servers [2].
The great advantage for the trainee is, that he can learn independent from place and time. Such courses are distributed via the Internet or CD (Web-based learning, Computer-based learning).
The problem for the lecturers is, that they now are authors of eLearning material. The design and work out of so-called eLearning courses is a very complicated work, because

- often different document formats needed,
- parts of the course material are on different servers,
- eLearning material should be interactive and
- special knowledge for example in html programming is necessary.

So it is a hard job for a lecturer to design his script as an electronic one.

In this context it is a good idea to use XML (Extensible Markup Language).
XML is a meta-markup language for text documents. Data is included in XML documents as string of text, and the data is surrounded by text markup that describes the data. That means: structure, data and design of documents are separately saved (in different files). So, contents are raw data with so-called tags for structuring.
This makes it possible, from one and the same XML document to generate different document formats. For example

- html or vector animations (Flash / SVG) for the presentation of course contend in the Internet

- pdf for printed issue of scripts
- audio files
- wml files for PDAs

So, if the contend changes only the data file (xml) has to be edited.

Furthermore the content of the course can be distributed at various servers. The author only has to know the corresponding URL and a “remote chapter” will be included in the course material.

Because “Learning by Doing” is an important part of modern education, the XML templates give the possibility to add interactive parts, for example simulations with any software tool or access to an online lab. All necessary calls and links will be automatically generated.

Carinthia Tech Institute, Villach and AdVIS GmbH [3], Dresden developed full functional XML templates and the necessary style sheets (xsl, css) for use in eLearning.
To give the possibility to use the templates also in other applications, environment, content and simulations are strictly separated.
On the client side only a standard Web browser is needed.

References:

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[3] http://www.advis.de/advis/schulung/04-e-learning.php