MyCoRe User Interface: Metadata Editor and Layout using XSL Stylesheets
MyCoRe User Interface

- **Command Line Interface:**
  MyCoRe:>_  
  Used for administrative purposes, batch loading of documents

- **Web User Interface:**
  Implemented by Java Servlets, Layout using XSL Stylesheets
  Used to search for content, display result lists, show hit details, deliver content and metadata to the client browser, navigate, ...

  In contrast to MILESS: Online-Editor for Document Metadata will now also be mainly HTML based, not a Java Applet as in MILESS
Generation of HTML Pages by MILESS Servlets

- Servlet contains business logic
- Servlet contains code to generate HTML output page

- Hard to change page layout:
  Need to change Java code
- Only one output style: Fixed HTML page
- Layout and business logic code mixed in servlet: Confusing and difficult to maintain
Generation of HTML Pages by MyCoRe Servlets: Separation of Logic & Layout

- Independent functions, can be
  - changed
  - maintained
  - developed separately

1. Client Browser
2. MyCoRe Servlet
3. XSL Stylesheet
4. HTML Page

- Data
- Business Logic
- Layout instructions
MyCoRe LayoutServlet: Using multiple different stylesheets
MyCoRe LayoutServlet: Using multiple different stylesheets

- XSL Stylesheet to use can be chosen
  - by Servlet Code
  - by User through HTML Request Parameter:
    http://.../testpage.xml?XSL.Style=dcoutput -> dcoutput.xsl
  - automatically by document type of XML output document:
    <person>...</person> -> person.xsl

- Use of different stylesheets for
  - different applications
  - different output formats (expert user, guest user, ...)
  - different languages (internationalized labels)
MyCoRe LayoutServlet: Producing non-HTML output, e.g. PDF

Client Browser

1

HTML Page A

4a

PDF Document B

4b

MCRLayoutServlet

XML Document

2

MyCoRe Servlet

XSL Style-sheet A

3a

XSL Style-sheet B

Using XSL Formatting Objects

Essen, 05.09.2002

4th European Content Manager DL & Media Workshop 2002

F. Lützenkirchen
MyCoRe LayoutServlet: Pass XML directly to the client

1a: Browser renders XML itself, e.g. MS Internet Explorer

MCRLayoutServlet

2a: XML Document

MyCoRe Servlet

2b: XML Document

1b: 3rd party application accesses XML output as MyCoRe export interface

Any other external System

3a: 3rd party application accesses XML output as MyCoRe export interface

3b: Any other external System
MyCoRe LayoutServlet: Three different sources of XML

1a: Client Browser 
1b: MILESS Derivate Servlet
1c: Other MyCoRe Servlet
2a: Stored XML Document as part of a MILESS derivate
2b: Dynamically generated XML Document
2c: Static XML Document from Web Server Filesystem
3: XSL Stylesheet
4: MyCoRe Layout Servlet

Output HTML Page
MyCoRe LayoutServlet: Three different sources of XML

- LayoutServlet can also handle XML input that is stored as a file that is part of an internal document in the digital library.

- Examples:
  - XML-based word processor output formats, e.g. OpenOffice
  - XML video storyboard as used in MILESS

- Same stylesheets can be used for static / dynamic / stored XML.

- If document metadata is stored as XML in the digital library, this XML file can be directly forwarded to LayoutServlet.
MyCoRe LayoutServlet:
http://.../agenda.xml
MyCoRe LayoutServlet:
http://.../agenda.xml?XSL.Style=printable

Workshop Agenda

Workshop introduction

- 9:00–9:15 Welcome Note
  (Dr. Lix, University of Essen)
- 9:15–10:15 Key-Note: Content Manager: News and Developments
  (Dr. Jim Reimer, IBM Content Management Development, Sta.)
MyCoRe LayoutServlet:  
http://.../agenda.xml?XSL.Style=xml
MyCoRe LayoutServlet: Combine multiple XML input documents

- Multiple XML input documents can be combined to produce one output document.
- The XML input documents that are combined can come from different sources, e.g. combine document metadata & document content XML.

Diagram:
- Client Browser
  - 1. Multiple XML input documents
  - 2. XML Documents
  - 3. XSL Stylesheet
  - 4. HTML Page
MyCoRe LayoutServlet:
Combine & include stylesheets

- Included XSL file can contain common layout instructions, e.g. page headers / footers, HTML CSS definitions
MyCoRe LayoutServlet: Passing Parameters to stylesheets

1. Client Browser
   - http://.../?XSL.SortBy=LastName

2. MyCoRe Servlet
   - request.setAttribute("XSL.SortBy", "LastName");

3. XSL Stylesheet
   - `<xsl:param name="SortBy"/>
     Stylesheet can use parameters

4. MCRLayoutServlet
   - Parameters / variables for XSL can come from
     - user HTTP request
     - servlet code
     - HTTP session information

- XML Document
- HTML Page
MyCoRe EditorServlet: Online HTML-Form-based XML Editor

**MILESS:** Java Applet to create and edit metadata and content

**Lessons learned:**
- Applet is a powerful tool
- GUI Code development takes a lot of time
- Java support in browser problematic: use SUN Java Plug-in
- User needs to install Java software to be able to use the GUI, can not "just start working"
- User may not want to use Java-based client side solutions for security reasons

**MyCoRe:**
Online-Editor based on HTML forms, only server-side Java used
Additional small servlets for upload of multiple files
XML-based solution, XML GUI definition instead of programming
MyCoRe EditorServlet:
Online HTML-Form-based XML Editor

- MyCoRe EditorServlet is able to **edit an XML file in HTML forms**

- XML file to edit can come from different **sources**:
  MILESS, MyCoRe, Local Filesystem, URL, ... -> Java Interface

- After editing, XML file can be saved to different **targets**:
  MILESS, MyCoRe, Local Filesystem, URL, ... -> Java Interface

- HTML Form layout is done by LayoutServlet using **Stylesheets**

- EditorServlet is configured by "**editor definition XML files**"

  Editor definition contains information about
  labels, fields, lists, cardinality of elements (repeatable?)
  help texts, data type and validation information
  mapping between form fields and XML attributes / elements

- **One EditorServlet, many editor definition files**
- Comparable to **W3C XForms Working Group**
MyCoRe EditorServlet: Architecture Overview

XML Source

XML Input
1: read XML to edit

EditorServlet

XML Output
5: validate data, generate XML output and save to target

Editor Def. XML
2: read editor definition for this kind of xml document

Editor Page XML

Browser

Editor Page HTML
4: user edits form in browser and sends form data to EditorServlet

LayoutServlet

Editor Page XSL
3: create editor page and render it to HTML form using XSL
<?xml version="1.0" encoding="UTF-8"?>

- <person id="502" state="normal">
  - <names>
    <name>Lützenkirchen, Frank</name>
  </names>
  - <contacts>
    - <contact type="office">
      <institution>HochschulRechenZentrum, Universität Essen</institution>
      - <postalAddresses>
        <address>Schützenbahn 70 D-45117 Essen Deutschland</address>
      </postalAddresses>
      - <phoneNumbers>
        <phone>+49 (0)201 / 183 - 2124</phone>
      </phoneNumbers>
      - <faxNumbers>
        <fax>+49 (0)201 / 183 - 3960</fax>
      </faxNumbers>
      - <emailAddresses>
        <email>luetzenkirchen@hrz.uni-essen.de</email>
      </emailAddresses>
      - <webSites>
        <url>http://www.uni-essen.de/hrz/mitarbeiter/luetzenkirchen.html</url>
      </webSites>
    </contact>
  </contacts>
</person>

XML input or output document
(This is what you really edit)
Person Editor Definition XML
(This tells EditorServlet what to do and how to do it)
Person Editor Definition XML

Define panels of HTML form
MyCoRe EditorServlet: File Upload Methods

- HTML: Only limited file upload capabilities
  - Upload a single file: HTML `<input type="file" ... />`
  - Upload a ZIP file: Server will "unzip" it into individual files

- Additional Applet:
  - Upload a complete directory with its structure and files
MyCoRe SearchMaskServlet: Definition of search masks via XML

- Search masks can be defined similar to editors

- One XML file per search mask defines
  - input fields
  - labels
  - help texts
  - mapping between fields and XQuery statements

- Servlet constructs Xquery from HTML form field input