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# Customizing HIP:

## A Beginner's Guide to Editing XSLT Stylesheets

(Repeat from CODI/HUG 2003)

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CODI – November, 2004




# Scope

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- Introduction to customizing the HIP user interface by way of the XSLT Stylesheets
- XSLT = Extensible Stylesheet Language for Transformations
  - Tag-based programming language
  - Transforms XML documents into something else (in this case, HTML)
- Not an XSLT training session

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## Sample XSLT code

```
<table>
<xsl:attribute name="border">0</xsl:attribute>
<xsl:attribute name="width">100%</xsl:attribute>
<xsl:attribute name="cellspacing">0</xsl:attribute>
<xsl:attribute name="cellpadding">0</xsl:attribute>
<xsl:if test="not($totalcount = 0)">
<xsl:if test="$renewalsallowed = $true">
  <tr>
  <td>
    <table>
      <xsl:attribute name="border">0</xsl:attribute>
      <xsl:attribute name="width">100%</xsl:attribute>
      <xsl:attribute name="cellspacing">0</xsl:attribute>
      <xsl:attribute name="cellpadding">2</xsl:attribute>
      <tr>
      <td>
        <xsl:attribute name="width">1%</xsl:attribute>
        <input>
        ...

```




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## Benefits of Customizing

- Shape the catalog to meet the specific needs of your library
  - Developers need to create a single product that libraries of any type can use
- Override Dynix's development decisions
  - especially with regard to layout
- Generates interest in the catalog from staff and the public
  - Sense of ownership when a suggestion is incorporated
- Satisfying


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## Risks of Customizing

- Not supported, help from Dynix is billable
  - If you're careful, the risk is small
- Upgrades/patches are more work and take longer
  - Potentially a lot more work and a lot longer
  - Not too bad if a good upgrade plan is developed
    - 2.0 to 2.01 40 hours
    - 2.02 to 2.03, 2.03 to 2.03.01 1 hour
    - 2.03.01 to 2.1 4 hours
- A major change in system architecture could have serious consequences


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## Customizing at Hennepin County Library

- HIP 3.0 running on Windows 2000
- Dynix ILS, release 191 HF1
- HCL is a single library with 26 branches
  - Each branch has a HIP profile, but they are essentially identical
  - Decision-making aspects of customization are centralized
  - Only one [strings.xsl](#), [other.xsl](#), [onoff.xsl](#)
- Experience with HTML and ColdFusion
  - ColdFusion is a web application platform that uses templates and a tag-based programming language




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### Customizing at Hennepin County Library

- Resources available for customization effort
  - Development server
  - Extra ILS licenses
  - Staff with experience in web application development
- Started with cosmetic changes
  - Reduction of white space
  - Removal of extraneous information
  - Color conformity with the library's web pages



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### Customizing at Hennepin County Library

- Breakthrough moment: realizing there are two parts to every HIP page:
  - Functional elements
    - links, input boxes, submit buttons, JavaScript
  - Display elements
- As long as the functional elements are left intact, you can do as you like with the display elements
- First major customization: [toolbar2.xsl](#)

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### Header example (toolbar2.xsl)

The image displays two examples of library website headers. The top example, titled 'Header example (toolbar2.xsl)', features a yellow 'Information Portal' button, a search bar, and navigation links for 'My Account', 'Find a Good Book', and 'Ask Us'. Below these are search options: 'Starts with...', 'Keyword', 'Kids', 'By Format...', and 'Advanced Search'. The bottom example shows a similar layout but with 'ONLINE CATALOG' as the main header, a 'Quick Search' input field with a 'GO' button, and additional links for 'Exit', 'Login', 'Help', and 'My List - 0'.

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### Prerequisites to Customizing

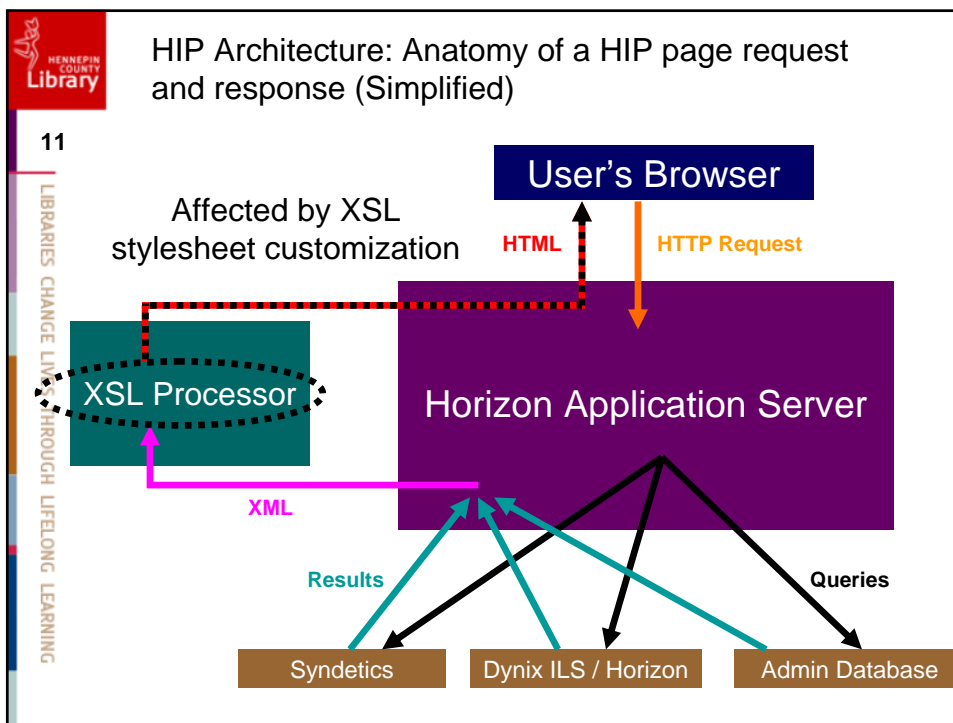
- A solid working knowledge of HTML
  - Primarily working backwards from the final product
- HTML tables
  - HIP uses tables extensively as the framework for each page
  - Table cells and rows are used to display variable sets of information
    - Tabs in the tabset
    - Items in the item display
    - Subject headings in the sidebar
- Basic understanding of how Cascading Stylesheets (CSS) work


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## Prerequisites to Customizing

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- Access and rights to the XSLT stylesheets
- Development HIP
  - Separate installation of HIP for development purposes
  - Develop, test and tweak customizations without bothering users of the production system
  - Very easy to copy pre-tested stylesheets to the production HIP
  - Additional ILS licenses
    - Dynix: uses at least one Dynix/UniVerse/Unix license
    - Horizon: ??
  - On a separate server
    - Desktop PC with 1GB of RAM (or less?)
  - On the production server
    - Runs on different ports or a different IP address than production HIP, more complex setup
    - Resource issues?






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## The XSL Processor

- Stylesheets are organized into six functional areas of HIP
- Each of the functional areas has a **root** stylesheet
  - [searchresponse.xsl](#) – search, view results, login
  - [patronpersonalresponse.xsl](#) – my account
  - [placerequest.xsl](#) – hold placement
  - [mylistresponse.xsl](#) – my list, manage lists
  - [sendbooklist.xsl](#) – send a booklist via email
  - [sessioninfo.xsl](#) – ???




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## The XSL Processor

- Root stylesheets are associated with their supporting stylesheets in the file [xsltransformer.xml](#)
  - Located in the top level XSL folder


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## Snippet from `xsltransformer.xml`

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```
...
<Root>
  <Name>./xsl/placerequest.xsl</Name>
  <Includes>
    <Include type="error">error.xsl</Include>
    <Include type="toolbar">toolbar2.xsl</Include>
    <Include type="requestoptions">placerequestoptions.xsl</Include>
    <Include type="footer">generalfooter.xsl</Include>
    <Include type="timer">expiretimer.xsl</Include>
    <Include type="bookings">bookings.xsl</Include>
    <Include type="image">image.xsl</Include>
    <Include type="features">onoff.xsl</Include>
    <Include type="attributes">other.xsl</Include>
    <Include type="string">string.xsl</Include>
  </Includes>
</Root>
...
```


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## XSLT Editing Tips and Tricks

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- Be sure to make a backup copy of a file before you edit
  - Be comfortable with your backup plan
  - Ours includes a nightly automatic XCOPY from `D:\dynix\xsl\` to `D:\backup\dynix\xsl\`
- Use a plain text editor or an editor designed for XSLT
  - MS Word or Word Pad might save the file in a non-ASCII format
- If possible, break up the customization into small edits that can be tested individually along the way




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## XSLT Editing Tips and Tricks

- For changes to take affect:
  - Just wait a few seconds for the XSL Processor's "File Watch" to automatically detect and incorporate the change
  - If changes don't seem to take affect, restart XSL Processor
  - Horizon Application Server (JBoss) does not need to be restarted
- Run the XSL Processor as an application rather than as a service when you are testing an edited stylesheet
  - More complete error messages
  - Fast and easy to stop and start




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## XSLT Editing Tips and Tricks

- Newly edited stylesheets won't be tested until they're called by HIP
  - Example: changes to **security.xsl** won't be tested until the first time a login is attempted
- HIP stylesheets contain both XSL and HTML tags
  - XSL tags are labeled as such:
    - `<xsl:attribute> </xsl:attribute>`
    - `<xsl:if> </xsl:if>`
  - HTML tags look like bare HTML tags
    - `<table> </table>`
    - attributes are applied with the `<xsl:attribute>` tag

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## XSLT Editing Tips and Tricks


The following XSLT:

```
<img>  
  <xsl:attribute name="src">/images/go.gif</xsl:attribute>  
  <xsl:attribute name="border">0</xsl:attribute>  
</img>
```

Generates this HTML:

```

```


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## XSLT Editing Tips and Tricks

- XSL Processor is picky when it comes to tags:
  - Tags are case sensitive
    - Bad: `<TD> ... </td>`
    - Good: `<td> ... </td>`
  - End tags are required
    - Bad: `<br>`
    - Good: `<br></br>`
  - Empty tags can use the end marker to close:
    - Good: `<br />`  
`<xsl:value-of select="text" />`



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## XSLT Editing Tips and Tricks

- Comments
  - Add comments to the stylesheet using standard HTML comment tags

```
<!-- pf added series title -->
```
  - Use comment tags to deactivate Dynix code

```
<!-- pf c-o unnecessary stuff
<xsl:if test="boolean(normalize-space(explanation))">
  <a>
    <xsl:attribute name="class">
      <xsl:value-of select="$css_normal_black_font1"/>
    </xsl:attribute>
    <xsl:value-of select="explanation"/>
  </a>
</xsl:if>
-->
```
  - NOTE: A comment used to deactivate code cannot include any comment tags



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## XSLT Editing Tips and Tricks

- Following the XSL trail from the HTML source to the corresponding spot in the stylesheets can be tricky
- Never a direct route
  - Root and support stylesheets
  - Variables
  - Templates
  - Cascading Style Sheets
  - Flow control tags

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## XSLT Editing Tips and Tricks

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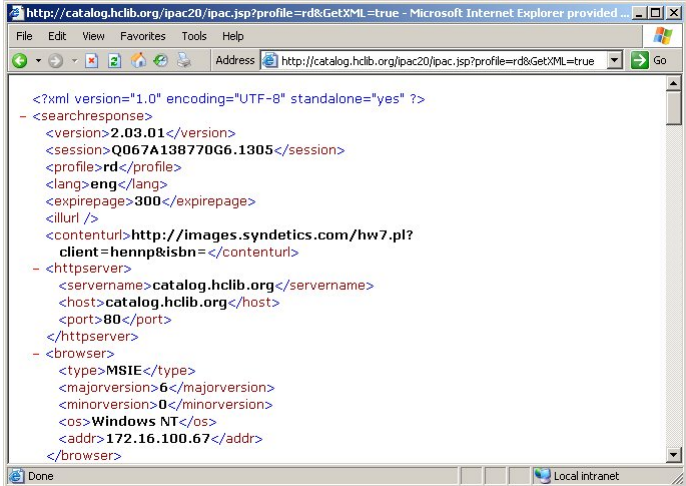
- Root and support stylesheets
  - The XSL responsible for the HTML on any given page comes from multiple stylesheets
  - Find out which root file by adding “&GetXML=true” to the end of the URL
    - Case sensitive
    - Remove “#focus” from the end of the URL
    - Example:
      - <http://catalog.hclib.org/ipac20/ipac.jsp?profile=rd#focus>
      - <http://catalog.hclib.org/ipac20/ipac.jsp?profile=rd&GetXML=true>

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## XSLT Editing Tips and Tricks

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```
<?xml version="1.0" encoding="UTF-8" standalone="yes" ?>
- <searchresponse>
  <version>2.03.01</version>
  <session>Q067A138770G6.1305</session>
  <profile>rd</profile>
  <lang>eng</lang>
  <expirepage>300</expirepage>
  <illurl />
  <contenturl>http://images.syndetics.com/hw7.pl?
    client=hennp&isbn=</contenturl>
- <httpserver>
  <servername>catalog.hclib.org</servername>
  <host>catalog.hclib.org</host>
  <port>80</port>
</httpserver>
- <browser>
  <type>MSIE</type>
  <majorversion>6</majorversion>
  <minorversion>0</minorversion>
  <os>Windows NT</os>
  <addr>172.16.100.67</addr>
</browser>
```

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## XSLT Editing Tips and Tricks

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- Variables
  - HTML to be customized


Send suggestions to

```
<a class="normalBlackFont1" href="mailto:dnackos@dynix.com">
  d.nackos@epixtech.com
</a>
```

- Assigned to a variable

```
<xsl:variable name="emailsuggestions">
  d.nackos@epixtech.com
</xsl:variable>
```

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## XSLT Editing Tips and Tricks


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- Variable called by the code to be customized

Send suggestions to

```
<a>
  <xsl:attribute name="class">
    <xsl:value-of select="$css_normal_black_font1"/>
  </xsl:attribute>
  <xsl:attribute name="href">
    mailto:<xsl:value-of select="$emailsuggestions"/>
  </xsl:attribute>
  <xsl:value-of select="$emailsuggestions"/>
</a>
```

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## XSLT Editing Tips and Tricks

- Templates
  - Allows XSLT code to be packaged and reused
  - Define a template

```
<xsl:template name="footer">
  <center>
    ...
  </center>
</xsl:template>
```
  - Call up a template

```
...
<xsl:call-template name="footer"/>
</form>
</body>
</html>
```

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## XSLT Editing Tips and Tricks


Another template example

```
<!-- put the current session ID in to the URL -->
<xsl:template name="addSessionToURL">
  <xsl:choose>
    <!-- if sending an email get new session -->
    <xsl:when test="/searchresponse/sendingemail = $true">
      <xsl:text>session=new</xsl:text>
    </xsl:when>
    <!-- if not sending an email preserve session ID -->
    <xsl:otherwise>
      <xsl:text>session=</xsl:text>
      <xsl:value-of select="/searchresponse/session"/>
    </xsl:otherwise>
  </xsl:choose>
</xsl:template>
```

Output of `<xsl:call-template name="addSessionToURL"/>`

As part of an email:     session=new

All other situations:    session=106W6250V8X87.3594




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## XSLT Editing Tips and Tricks

- Cascading stylesheets
  - In HIP, defines the style elements for fonts and buttons
    - Colors
    - Size
    - Text decoration: bold, underline, etc.
  - Assigned in the XSLT by the 'class' attribute

```
<a>
  <xsl:attribute name="class">
    <xsl:value-of select="$css_normal_black_font1"/>
  </xsl:attribute>
  <b><xsl:value-of select="$full_bib_call_num"/></b>
</a>
```



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## XSLT Editing Tips and Tricks

- Flow control tags
  - `<xsl:for-each ... >`
    - Repeat the code within the tag for each item in the dataset

```
<xsl:for-each select="//blockdata/block">
  <xsl:call-template name="blocktable"/>
</xsl:for-each>
```
  - `<xsl:if ... >`
    - Only use the code within the tag if the condition is true

```
<xsl:if test="boolean(//itemsout)">
  ...
</xsl:if>
```




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## XSLT Editing Tips and Tricks

- Flow control tags (continued)
  - `<xsl:choose>` `<xsl:when ... >`  
`<xsl:otherwise>`
    - Choose which code to use from multiple alternatives

```
<xsl:choose>  
  <xsl:when test="//profile = 'elibrary'">  
    call your local library  
  </xsl:when>  
  <xsl:otherwise>  
    ask for assistance at the info desk  
  </xsl:otherwise>  
</xsl:choose>
```




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## Editors

- Stylesheet Editor
  - XMLSpy
  - Xselerator
  - FrontPage 2003
- Text Editor
  - Notepad
  - UltraEdit
    - Find/Replace across multiple files
    - Line number indicator, "Go to line" utility
    - Compare files


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## Other Resources

- *XSLT*, Doug Tidwell (O'Reilly book)
- *iPac User Interface Customization Guide*, from the Dynix support website  
– <http://customer.dynix.com/archive/pdf/?support/ipac/docu/202/iPacCustom.pdf>
- iPac Listserv and archive  
– <http://lists.tbtc.org/mailman/listinfo/ipac/>
- iPac Zone, compiled by James Day  
– <http://www.scpl.lib.fl.us/ipaczone/>  
– Contributions from HIP administrators/customizers
- Google


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## Managing Upgrades with Customized Stylesheets

- During upgrades, stylesheets may be replaced with new versions
  - Customizations are NOT retained
- Before the upgrade, make sure you have backup copies of all the stylesheets that have been customized along with the original versions
- After the upgrade, compare the new version of the stylesheet to the old *original uncustomized version*.
  - Date/time modified
  - Size
  - Side by side comparison




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### Managing Upgrades with Customized Stylesheets

- If there are no differences between the old original version and the new version, your customized version needs no changes
- If there are differences between the old and new stylesheets, find out the nature of the changes
  - If the changes are relatively minor, incorporate them into your old customized stylesheet
  - If the change is relatively major compared to your customizations, incorporate your customizations into the new version of the stylesheet
- Upgrade documentation has been pretty good about listing the stylesheets that will be replaced during the upgrade



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