Changing the uPortal Look & Feel

Justin Tilton, Chief Executive Officer
instructional media + magic, inc.
at the
JA-SIG Conference
Destin, Florida
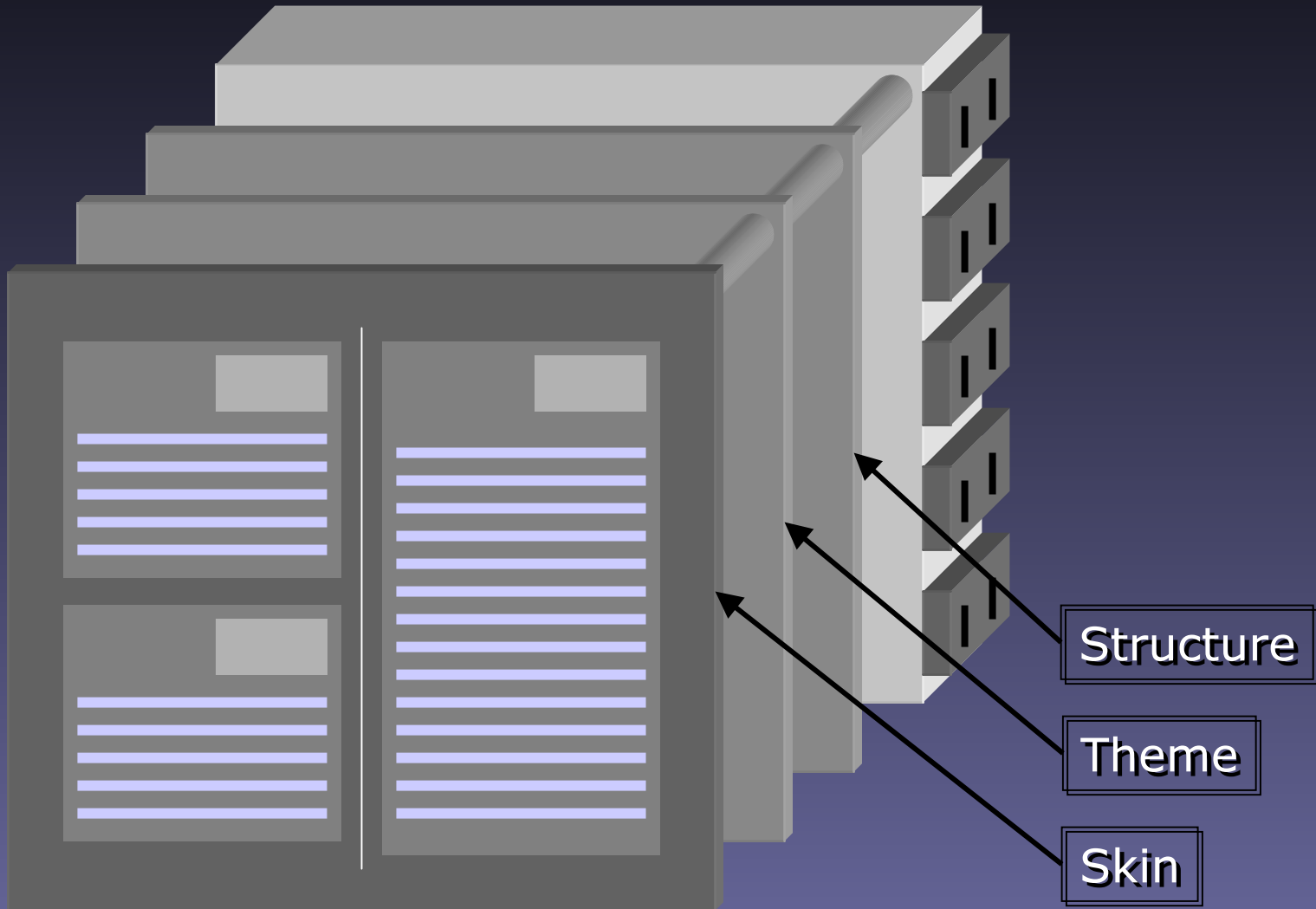December 4, 2001

Overview

- Introduction
  - How does it work?
  - What is the Structure?
  - What is the Theme?
  - What are Skins?
  - Why this process?

- Changing the Aesthetic
  - Introductory – CSS & media
  - Intermediate – the Theme Transformation
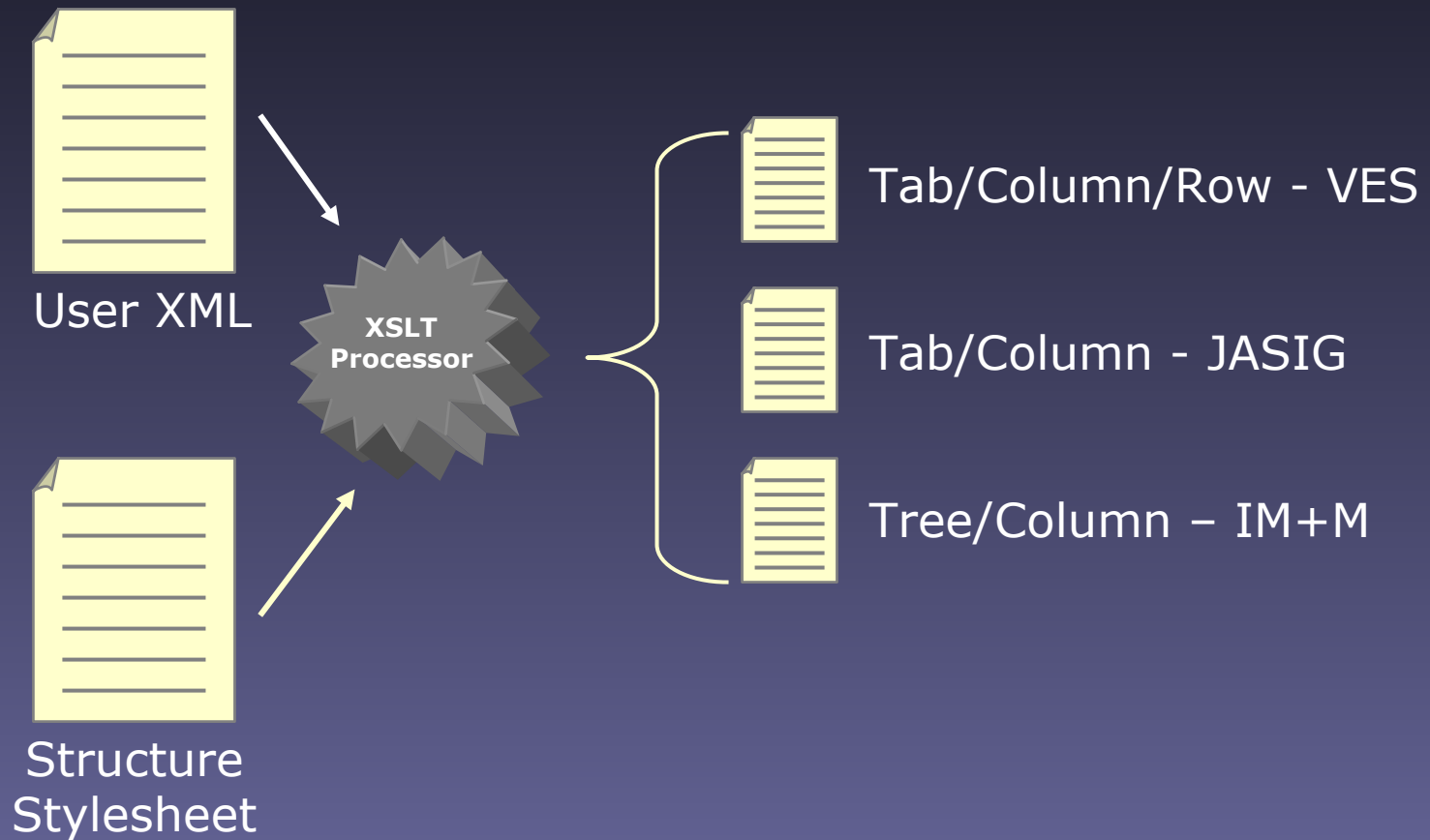 - Advanced - the Structure Transformation

Introduction
and an abstract way
to visualize the process

Basic Architecture

Structure

Theme

Skin

1. Structure...

uPortal Look & Feel

User XML

XSLT Processor

Structure Stylesheet

Tab/Column/Row - VES

Tab/Column - JASIG

Tree/Column – IM+M

Structure – Tab/Row/Column

Virtual Education Space™   Home   Help   Logout   V·E·S Powered by Public Educators...

My VES   Courses   **Organizations**   Resources

Tools
- Announcements
- Calendar
- Tasks
- Send e-Mail
- User Directory
- Address Book
- Personal Information

Official Links
- Massachusetts DOE
- Teacher Certification
- Ed. Technology
- Curr. Frameworks
- MCAS Information
- US DOE elearning

Search the Web
[   ] go!

Row

Column   Column

Structure – Tab/Column

u portal
by JASIG

| Main | More | AndMore | Remove for release! |

Column

Column

Structure – Tree/Column

ROOT CATEGORY
- Arts and Culture
- StockCharts
- XML
- XML Again
  - SUBROOT ONE
    - MozillaZine
    - CNET News
    - Bookmarks
    - XML.com

COMPUTING
- MozillaZine
- StockCharts.com
- Bookmarks
- XML.com

WORLD NEWS
- uPortal-Powered Sites
- IBS News
- uPortal Dev Ref
- Salon.com

CSSVIEWER
- CSS Viewer

Column

Column

2. Theme

Structure
XML

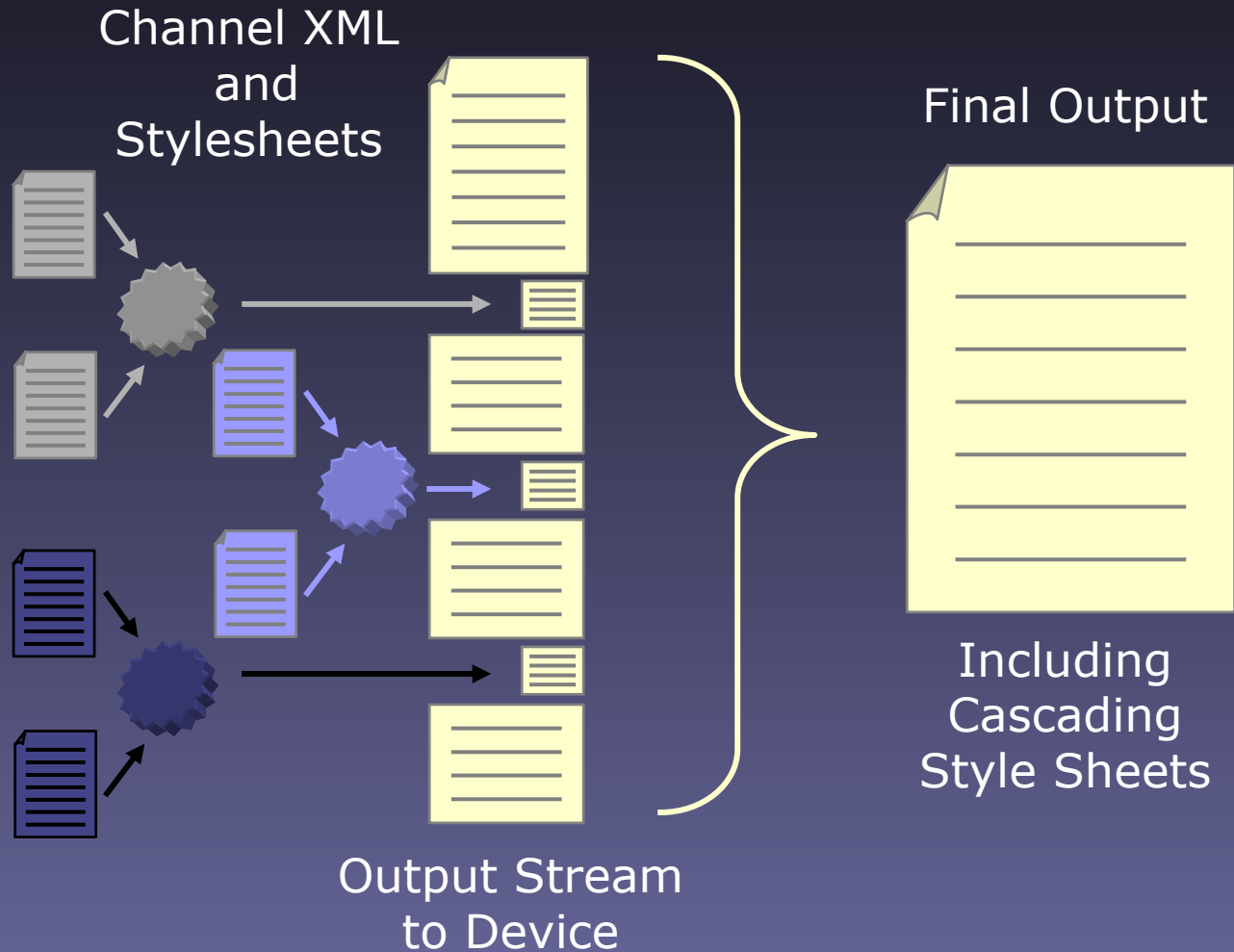Theme
Stylesheet

**XSLT
Processor**

HTML 4.0 - Browser

HTML 3.2 - PDA

WML – Mobile Phone
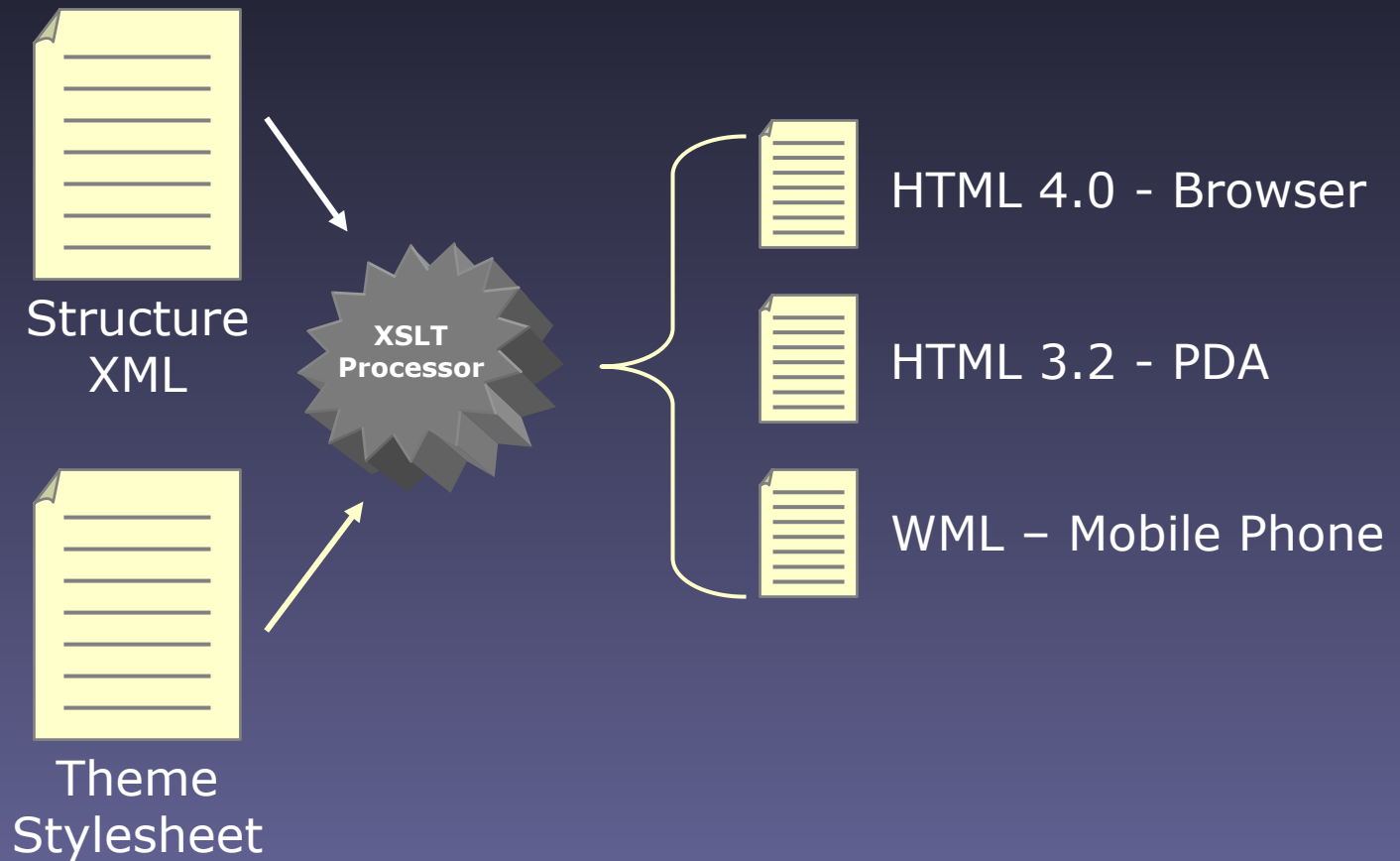
Themed Markup/Device

3. Channels – with Skin

Channel XML and Stylesheets

Final Output

Output Stream to Device

Including Cascading Style Sheets
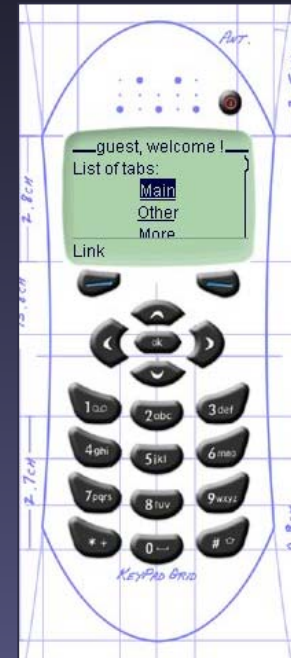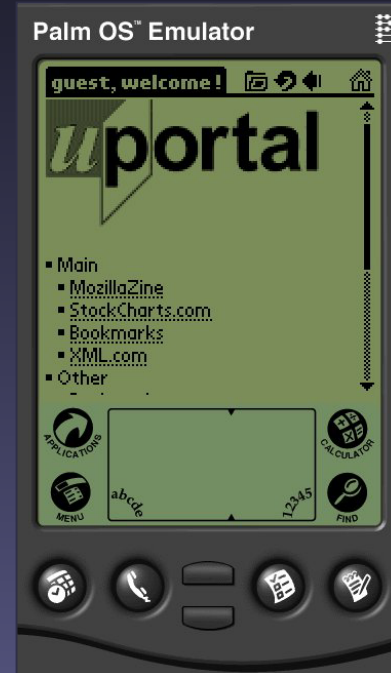
Skin – The im+m Look & Feel

uPortal by J A-S I G   Home | Channel Admin | Preferences | Logout

Welcome Demo User | You are currently logged in.   December 3, 2001

uportal by JASIG

interface image

Main | **Development** | **CWebProxy Examples**

Person Attributes   [X]

uPortal channels have access to user attributes via the `org.jasig.portal.security.IPerson` object. Attribute names are defined in the eduPerson object class version 1.0.

uPortal implementors are to map these standard attribute names to local names in their person directory or database. Mappings are contained in the `properties/PersonDirs.xml` file.

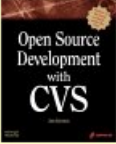| Att. Name	Att. Value
Available attributes:	
displayName	Demo User
givenName	Demo
mail	demo.user@jasig.org
sn	User
givenName	Demo
Unavailable attributes:	
eduPersonAffiliation	[Not available]
eduPersonNickname	[Not available]
eduPersonOrgDN	[Not available]
eduPersonOrgUnitDN	[Not available]
eduPersonPrimaryAffiliation	[Not available]

uPortal Development Books   [X]

Here are some books that may be useful to uPortal developers:

Apache Jakarta-Tomcat
James Goodwill

Purchase from...
Amazon.com ▼ Go

Open Source Development with CVS
Moshe Bar, Karl Franz Fogel

Purchase from...
Amazon.com ▼ Go

XML and Java: Developing Web Applications
Hiroshi Maruyama, et al

Purchase from...
Amazon.com ▼ Go

XSLT: Working with XML and HTML

Skin – The Java Look & Feel

uPortal by J A-S I G   Home | Channel Admin | Preferences | Logout

Welcome Demo User | You are currently logged in.   December 3, 2001

uportal by JASIG

interface image

Main   **Development**   **CWebProxy Examples**

Person Attributes   ☒

uPortal channels have access to user attributes via the `org.jasig.portal.security.IPerson` object. Attribute names are defined in the **eduPerson object class** version 1.0.

uPortal implementors are to map these standard attribute names to local names in their person directory or database. Mappings are contained in the `properties/PersonDirs.xml` file.

Att. Name	Att. Value
Available attributes:	
displayName	Demo User
givenName	Demo
mail	demo.user@jasig.org
sn	User
givenName	Demo
Unavailable attributes:	
eduPersonAffiliation	[Not available]
eduPersonNickname	[Not available]
eduPersonOrgDN	[Not available]
eduPersonOrgUnitDN	[Not available]
eduPersonPrimaryAffiliation	[Not available]
eduPersonPrincipalName	[Not available]
c	[Not available]

uPortal Development Books   ☒

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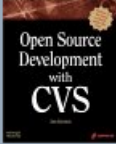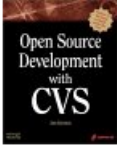
Apache Jakarta-Tomcat
James Goodwill

Purchase from...
Amazon.com ▼ Go

Open Source Development with CVS
Moshe Bar, Karl Franz Fogel

Purchase from...
Amazon.com ▼ Go

XML and Java: Developing Web Applications
Hiroshi Maruyama, et al

Purchase from...
Amazon.com ▼ Go

XSLT: Working with XML and HTML
Khun Yee Fung

Skin – The UoSM Look & Feel

Skin – The Matrix Look & Feel

Skin – The VSAC Look & Feel

A Piped View of the Process

uPortal Look & Feel

userLayout

Structure
transformation

XSLT

structuredLayout

setRuntimeData()

Channels

XSLT

renderXML()

Theme
transformation

HTML, WML VoiceML…
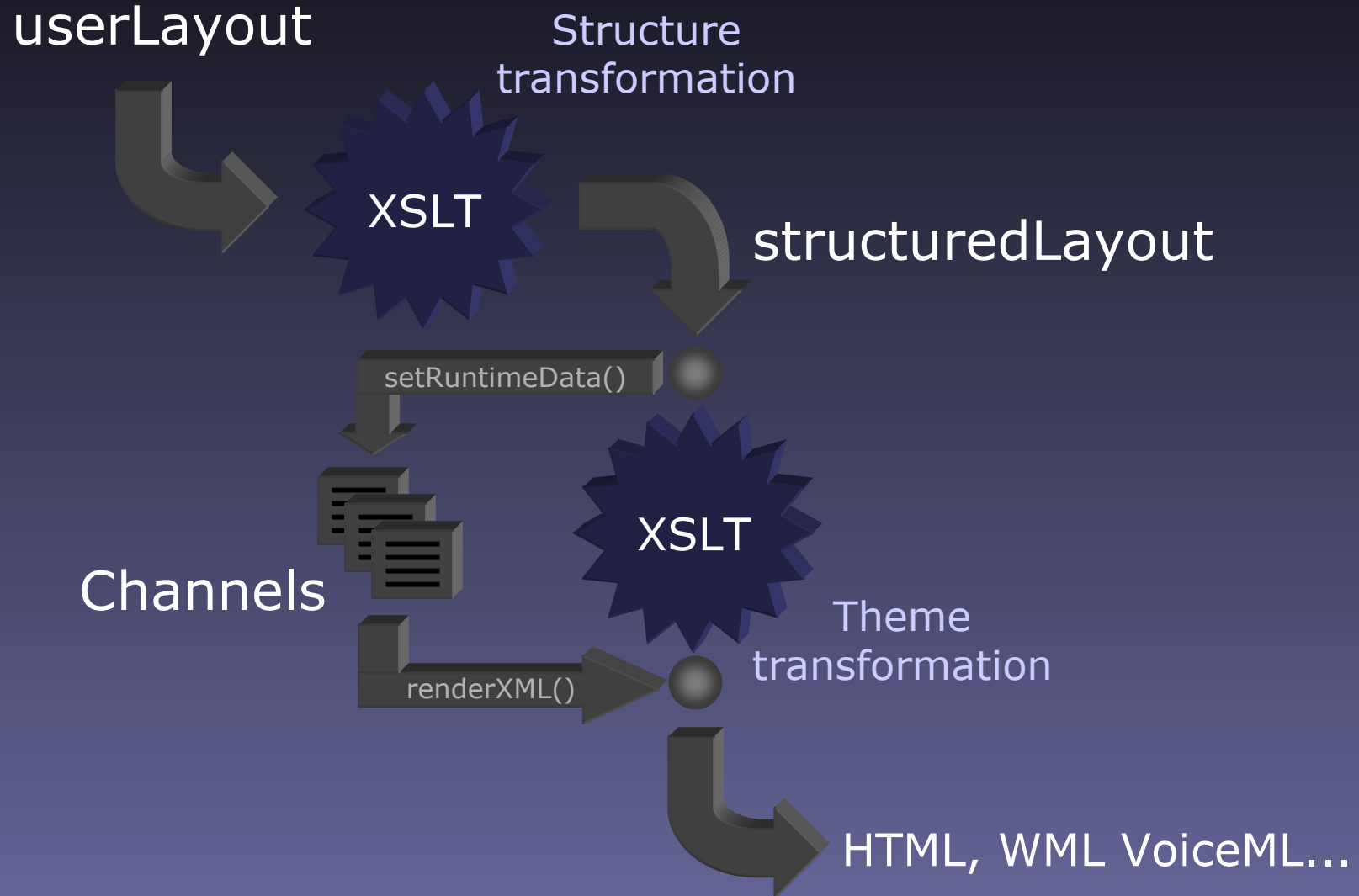
A detailed explanation

- User layout is an XML document generated from the portal database
- The user layout represents an abstraction of the structure of the content chosen and arranged by the user
- The user layout node tree consists of "folders" and "channels"
- Channels are always leaf nodes in the document (they are always children of folders)

Abstract User Layout

Current Structure XSLT

uPortal Look & Feel

User Layout
- Folder
  - Folder
    - Channel
    - Channel
    - Channel
    - Folder
      - Channel
  - Channel
- Folder
  - Folder
    - Channel
- Folder
  - Channel
  - Channel

Top Level Folders Become Tabs

Descendant Folders of Top Level Folders Become Columns

User Layout
- Tab
  - Column
    - Channel
    - Channel
    - Channel
    - Channel
  - Channel
- Tab
  - Column
    - Channel
- Tab
  - Channel
  - Channel

Current Theme XSLT

```
                        ┌─────────────┐
                        │ User Layout │
                        └──────┬──────┘
          ┌────────────────────┼────────────────────┐
    ┌───────────┐        ┌───────────┐        ┌───────────┐
    │    Tab    │        │    Tab    │        │    Tab    │
    │ Jim Smith │        │Financial Aid│      │  Library  │ ◄──┐
    └─────┬─────┘        └─────┬─────┘        └─────┬─────┘    │
   ┌──────┴──────┐             │             ┌──────┴──────┐   │
┌────────┐  ┌────────┐   ┌──────────┐  ┌──────────┐ ┌──────────┐
│ Column │  │ Column │   │ Channel  │  │ Channel  │ │ Channel  │
└───┬────┘  └───┬────┘   └──────────┘  └──────────┘ └──────────┘
    │       ┌───┴────┐
┌─────────┐ ┌─────────┐ ┌─────────┐
│ Channel │ │ Channel │ │ Channel │
│Dictionary.com│ │Bookmarks│ │ Cartoon │
└─────────┘ └─────────┘ └─────────┘
```

Attributes used to Name Tabs

Jim Smith | Financial Aid | Library

Word of the Day

A new word is presented every day with its definition and example sentences from actual published works.

Dictionary.com

• **frangible: Dictionary.com Word of the Day**
  frangible

Dictionary.com Search

Submit

Bookmarks

📁 **Blackboard**
📁 **uPortal**
    📁 **Resources**
    📁 **uPortal Demos**
📁 **VES Bookmarks**
📁 **XML**

Daily Business Cartoon

© 2001 Ted Goff tedgoff@tedgoff.com http://www.tedgoff.com

Why this Process?

- XSLT Separates Business Logic from Presentation
- Multi-Stage Transformations allow for flexible designs targeting different markup languages and devices
- Cascading Style Sheets create a consistent look for disparate channels and applications

Tweaking the Look and Feel

Reversing the approach

- Skins/CSS
  - Fonts, colors, alignment, etc.
- Media
  - Logos, channel buttons, etc.
- Theme
  - Navigation, channel placement, etc.
- Structure
  - Tabs, trees, columns, rows, etc.

Skins and Cascading Style Sheets

What are Skins?

- Cascading Style Sheets Defining:
  - Element level aesthetics
  - Pseudo-element level aesthetics
  - New classes and their aesthetics
- Element Example:
  BODY{ background-color : #666633; }
- Class Example:
  .uportal-channel-text{
      color : Black;
      font-family : Georgia, Times, serif;
      font-size : 12px;
  }

More about CSS1 and CSS2

- The specifications for Cascading Style Sheets can be found at the W3C web site at www.w3c.org

- The W3C site also lists a number of CSS editors. Many of them are free. I use Top Style Lite.

- Many browsers do not fully support the specifications, so be mindful and test, test, test… Did I mention test…

What has been defined?

Classes	Example or Description
.uportal-navigation-category-selected	**Brawny gods just flocked up to quiz and vex him.**
.uportal-navigation-channel-selected	Brawny gods just flocked up to quiz and vex him.
.uportal-text	Brawny gods just flocked up to quiz and vex him.
.uportal-text-reversed	
.uportal-text-small	Brawny gods just flocked up to quiz and vex him.
.uportal-crumbtrail	Brawny gods just flocked up to quiz and vex him.
.uportal-copyright	*Brawny gods just flocked up to quiz and vex him.*
.uportal-button	Submit
.uportal-label	**Brawny gods just flocked up to quiz and vex him.**
.uportal-input-text	
.uportal-channel-text	Brawny gods just flocked up to quiz and vex him.
.uportal-channel-title	Brawny gods just flocked up to quiz and vex him.
.uportal-channel-title-reversed	
.uportal-channel-subtitle	**Brawny gods just flocked up to quiz and vex him.**
.uportal-channel-subtitle-reversed	**Brawny gods just flocked up to quiz and vex him.**
.uportal-channel-emphasis	**Brawny gods just flocked up to quiz and vex him.**
.uportal-channel-strong	**Brawny gods just flocked up to quiz and vex him.**
.uportal-channel-code	Brawny gods just flocked up to quiz and vex him.
.uportal-channel-copyright	*Brawny gods just flocked up to quiz and vex him.*
.uportal-channel-warning	Brawny gods just flocked up to quiz and vex him.
.uportal-channel-error	Brawny gods just flocked up to quiz and vex him.
.uportal-channel-table-caption	**Brawny gods just flocked up to quiz and vex him.**
.uportal-channel-table-header	**Brawny gods just flocked up to quiz and vex him.**
.uportal-channel-table-row-even	Brawny gods just flocked up to quiz and vex him.
.uportal-channel-table-row-odd	Brawny gods just flocked up to quiz and vex him.
.uportal-background	
.uportal-background-dark	
.uportal-background-med	
.uportal-background-light	
.uportal-background-content	
.uportal-background-highlight	
.uportal-background-shadow	

Where are the Skins?

```
\webpages
 \media
  \org
   \jasig
    \portal
     \layout
      \tab-column
       \nested-tables
```

All of the skins are in separate directories under the nested-tables directory

Where is a sample skin?

\webpages
 \media
  \org
   \jasig
    \portal
     \layout
      \tab-column
       \nested-tables
        \imm
         \skin

Drill down the directory
tree to this location
for a sample skin

File: imm.css

uPortal Look & Feel

How to tweak?

- Element level additions and deletions are safe…
  - For example: <body>, <a>, etc…
- Class names should remain constant, as many channel developers are already using them…
  - If they are deleted or renamed, channels using those classes will not present correctly
  - For Example: .uportal-channel-text
- Class definitions can be changed.
- The default skins provided have been designed to be functional, use them as a starting point, and have fun…

Media in the default Themes

What media is in there?

Logos

Tab Images

uPortal by J A-S I G

Welcome Demo User | You are currently logged in.

uportal
by JASIG

Main | **Development** | **CWebProxy Examples**

Person Attributes

uPortal channels have access to user attributes via the
org.jasig.portal.security.IPerson object. Attribute names
are defined in the eduPerson object class version 1.0.
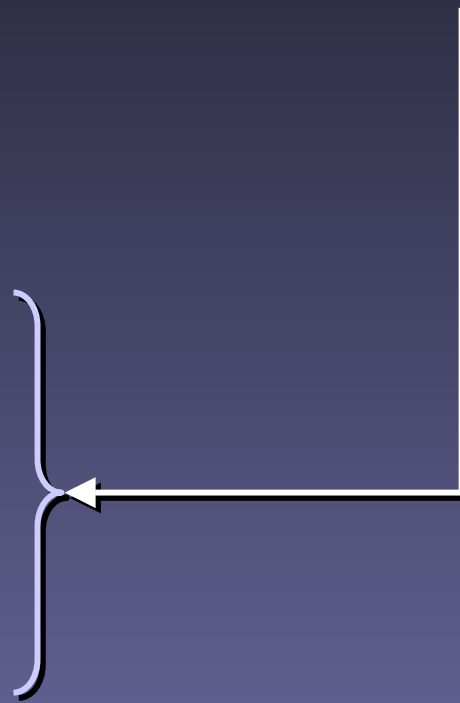
Channel Controls

Where are the media elements?

```
\webpages
 \media
  \org
   \jasig
    \portal
     \layout
      \tab-column
       \nested-tables
       \imm
           \controls
           \focused
           \institutional
           \navigation
           \profile
           \skin
```

Each Skin has a named directory containing the following directories

The controls directory
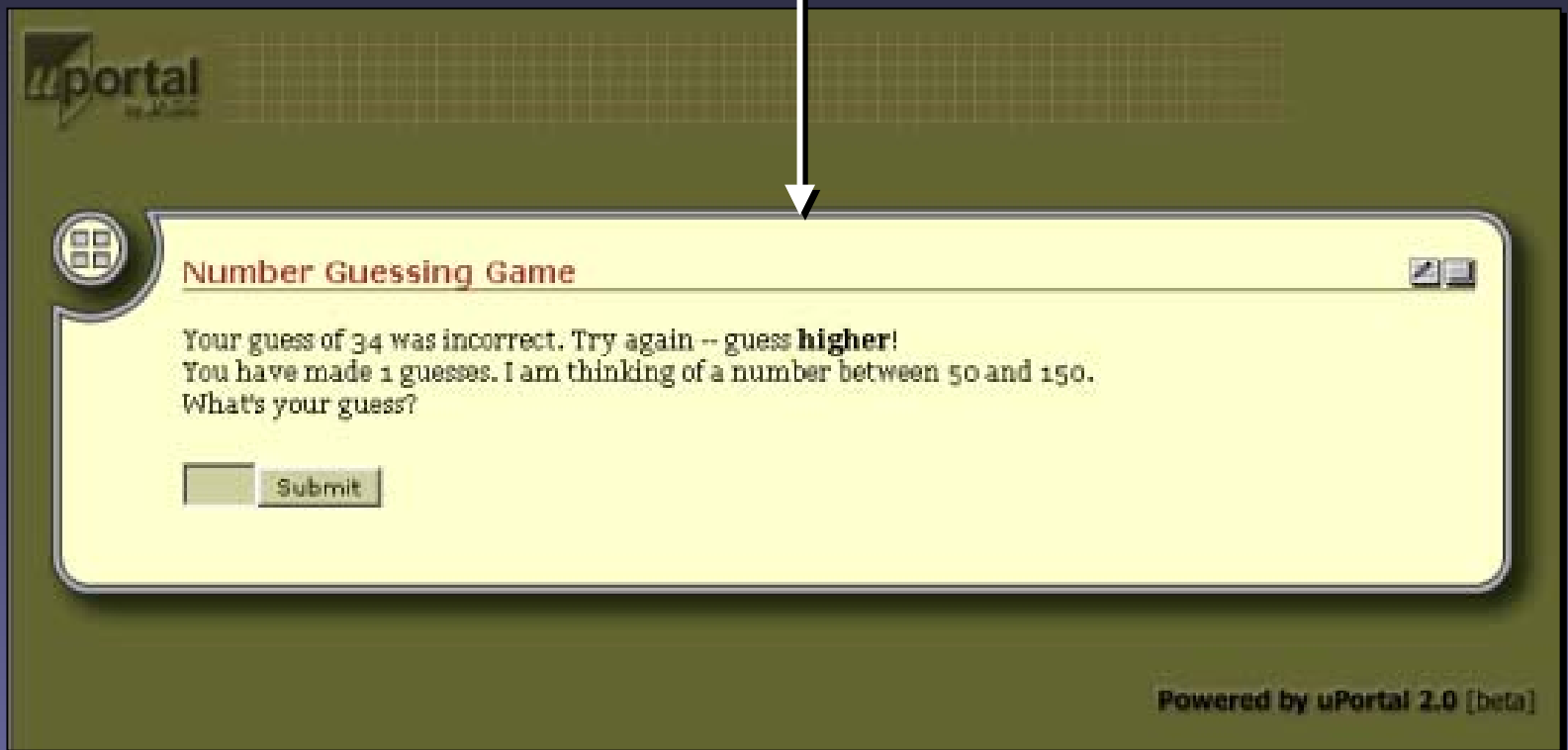
These images can all be changed. They represent specific channel events.

Minimizable	⊡	when selected, channel controls remain but channel content does not render
Editable	⊠	when selected, passes edit events
Has Help	?	when selected, passes help events
Has About	ⓘ	when selected, passes about events
Printable	🖨	when selected, passes print events
Removable	⊠	when selected, removes the channel from the layout
Detachable	▭	when selected, renders the channel in a separate window

Note: Standard Icon sizes and web safe colors are recommended i.e. 16x16, 32x32, 64x64

The focused directory

A focused channel is displayed in a special box using 14 small images to draw the boundary. These images can be modified or the XSLT can be changed to render a completely different aesthetic for these channels.

The institutional directory

The institutional directory contains the masthead logos. One in the top table cell and the other just above the tabs. These can both be modified, and the sizes adjusted accordingly in the theme xslt.
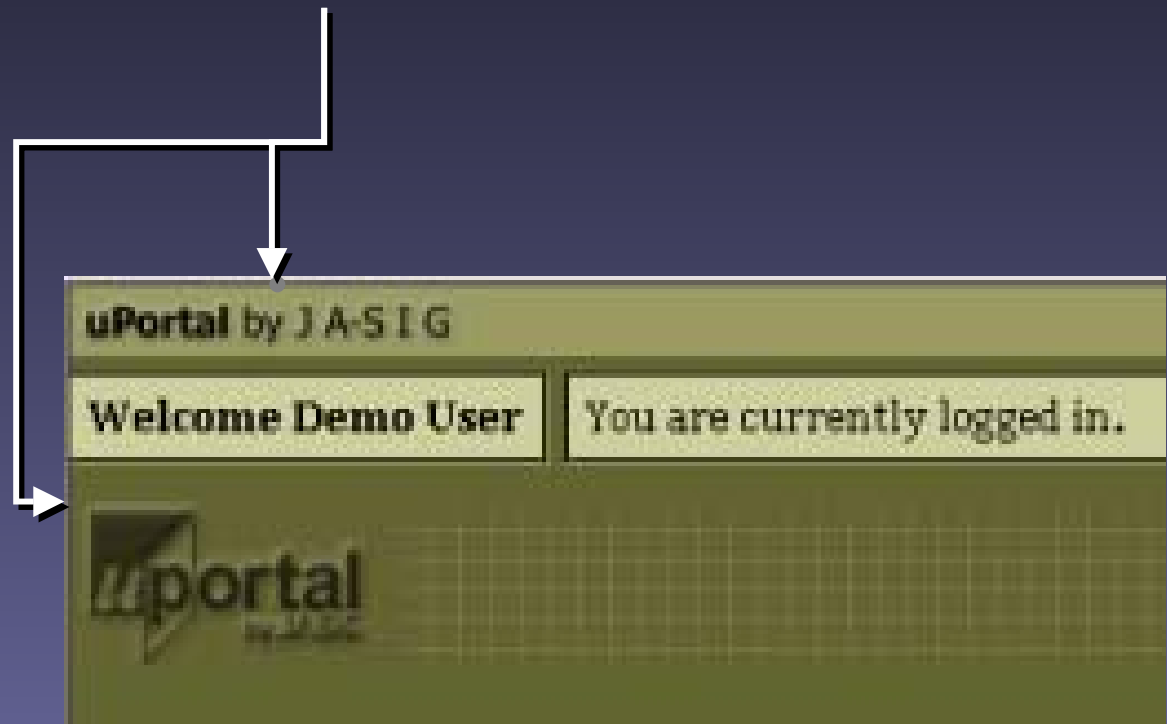
The navigation directory

The navigation directory contains 5 images to create the layered effect and shading. These images and tab structures can be changed. Changing the layered effect will require modifications to the theme xslt.
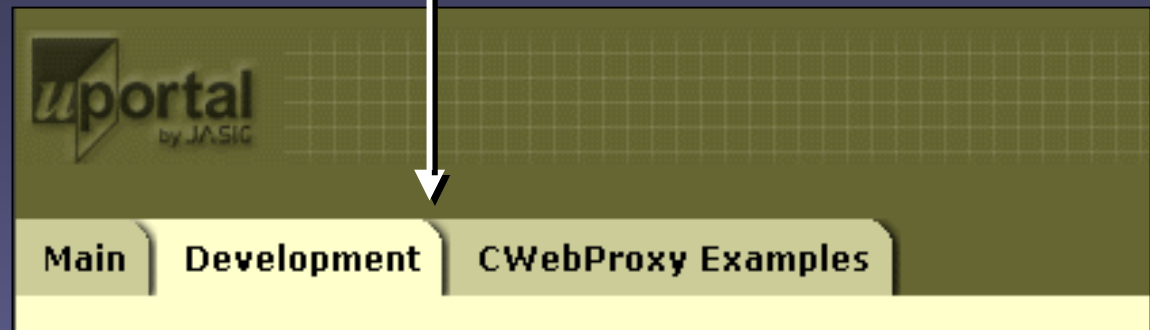
The profile directory

The profile directory contains 2 images that are used for profile management. When a new theme is developed an example thumbnail and an example image should be placed in a profile directory.

Thumbnail

120x90

Example – 640x480

uPortal Look & Feel
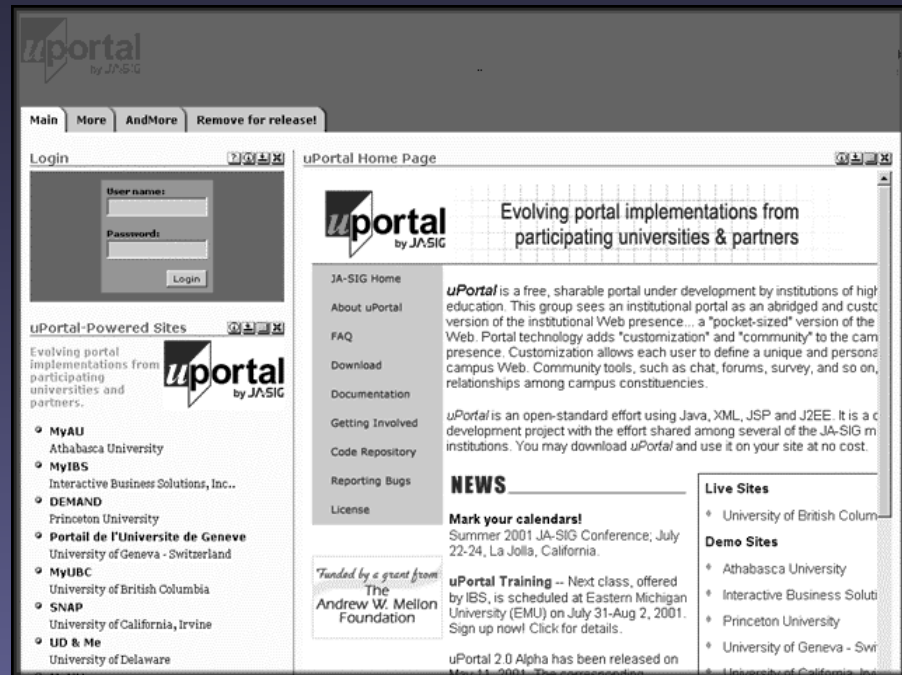
The skin directory

The skin directory contains a thumbnail size snapshot of the portal being drawn using the named skin. This thumbnail is used in the Preferences channel when users have a choice of different skins to apply...
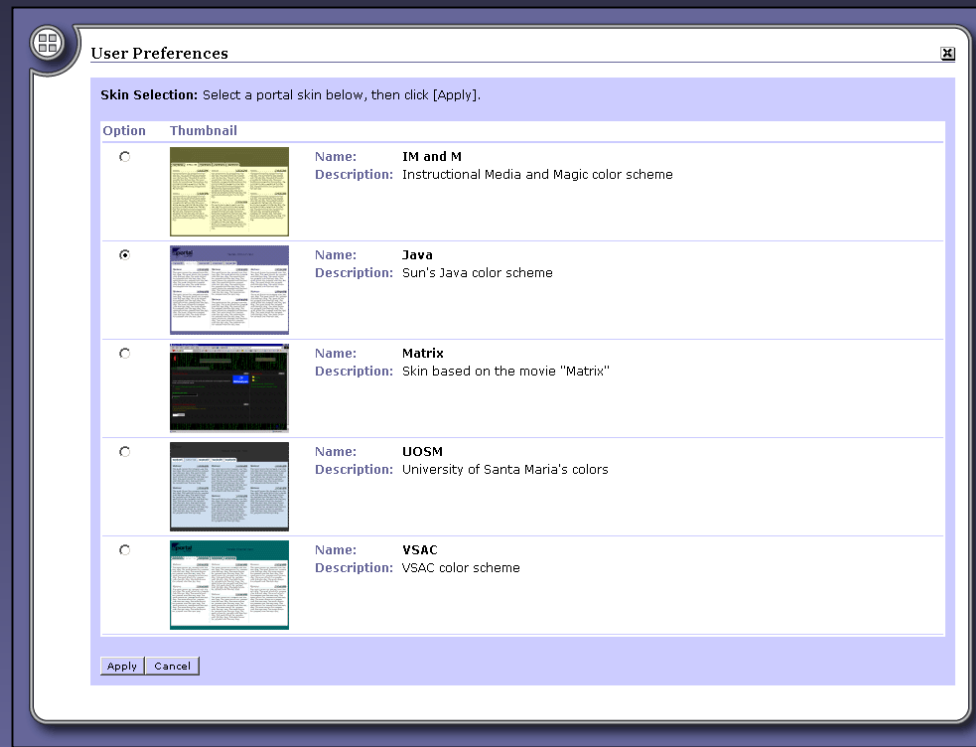
The Theme

What is the Theme?

- The theme is an XSL transformation.
- XSLT is a W3C recommendation.
- The theme is responsible for outputting markup appropriate for the device addressing the uPortal
- It is the step in the process where masthead, navigation, channel, and footer aesthetics are established.

Where are the Theme XSLTs?

```
\webpages
  \stylesheets
    \org
      \jasig
        \portal
          \layout
            \tab-column
                    \deck-of-cards
                    \nested-tables
```

deck-of-cards.xsl

nested-tables.xsl

What is the .sdf file about?

- The .sdf or Stylesheet Description File is an XML file which provides a short description of the file, some pointers to media, and the names of the parameters the designer wants to persist.

  - An example parameter is the width that a uPortal user sets on a column in the Tab-Column Theme.

Description File Listing

```xml
<?xml version="1.0" ?>
- <stylesheetdescription>
    <name>Deck of cards</name>
    <description>Renders tabs and columns as deck of
        cards</description>
    <parentstylesheet>Tab and Column
        layout</parentstylesheet>
    <mimetype>text/vnd.wap.wml</mimetype>
    <serializer>WML</serializer>
    <deviceType>cellphone</deviceType>
    <samplePictureURI>media/org/jasig/portal/layout/tab-
        column/deck-of-
        cards/sample_full.gif</samplePictureURI>
    <sampleIconURI>media/org/jasig/portal/layout/tab-
        column/deck-of-
        cards/sample_icon.gif</sampleIconURI>
    <parameters />
    <channelattributes />
</stylesheetdescription>
```

The Theme XSLT process...

Step One – get the structure XSLT output:

- Obtain the output XML from the Structure XSLT

Step two – Analyze the data

- Think about the best way to present and interact with it. Think about different window sizes, resizing, etc.

Step three – Develop sample markup

- Design mocks for each markup language & device that you plan to support. Don't jump right into the XSLT.

Step four – Convert the markup to XML

- The stylesheet will only accept a well formed XML document. Use XHTML, or equivalent.

Step five – copy markup into XSLT editor

- Match on a root element and start designing your new look and feel. Don't forget to make an .sdf file…

The Structure

What is the Structure?

- The structure is an XSL transformation.
- This transformation has an output of XML
- The structure is responsible for changing the abstract concept of the user layout into a specific structure
- In the current distribution of uPortal, it is the step in the process where folders and channels are converted to Tabs, Columns, and channels by a specific set of XSLT rules.

Implications of modification...

- The structure stylesheet is a relatively simple stylesheet.

- Design implications arise from the dependencies created by the structure stylesheet, such as the Preferences channel.

- This is a large task, but one that is eagerly anticipated.

Where is the Structure XSLT?

\webpages
 \stylesheets
  \org
   \jasig
    \portal
     \layout
      \tab-column

The structure stylesheet also has a companion SDF file

tab-column.xsl
tab-column.sdf

The Structure SDF...

```xml
<?xml version="1.0" ?>
- <stylesheetdescription>
    <name>Tabs and columns</name>
    <description>Presents the layout in terms of tabs and columns.</description>
  - <parameters>
    - <parameter name="activeTab">
        <defaultvalue>1</defaultvalue>
        <description>The number of the tab that is initially active</description>
      </parameter>
    </parameters>
  - <folderattributes>
    - <attribute name="width">
        <defaultvalue>100%</defaultvalue>
        <description>Width of the column</description>
      </attribute>
    </folderattributes>
    <channelattributes />
</stylesheetdescription>
```

The Structure XSLT process...

Step One – get the user layout:

- Obtain a sample user layout XML from the portal

Step two – Analyze the data

- Analyze the structure you want to present

Step three – Build the transformation

- Transform the user layout into a new XML document representing your new structure based on rules

Step four – Make a list of the other dependencies

- List out the channels such as user Preferences that have a dependency on the new structure
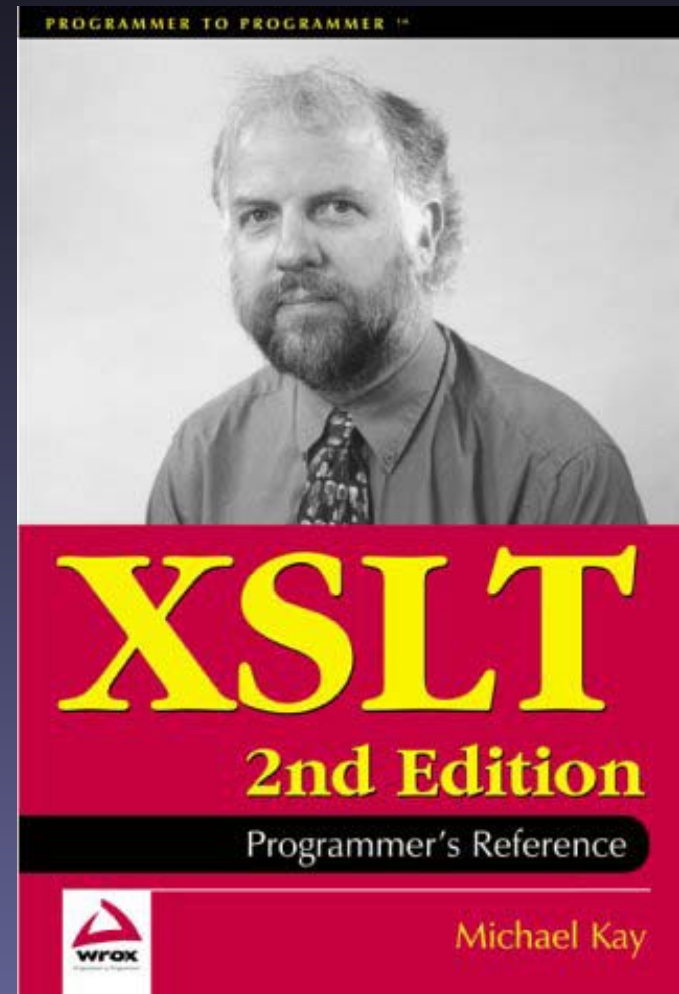
Step five – Design the dependent channels

- Using the previous examples design and implement the dependent channels
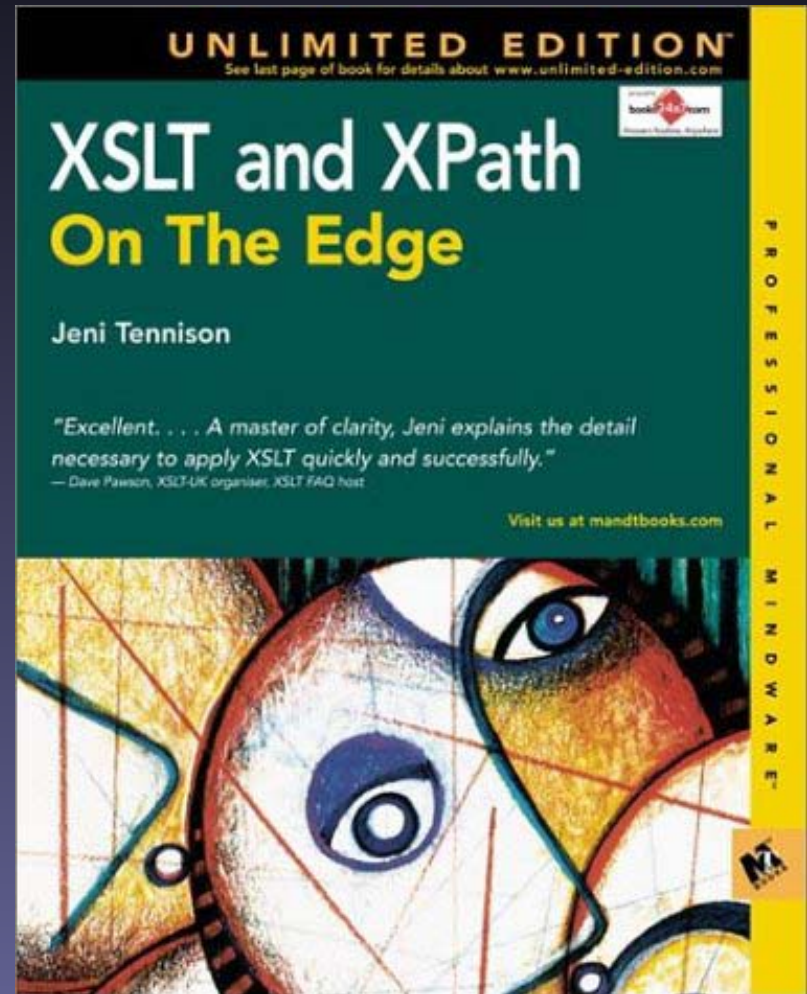
References & Tools

References

- "The" definitive reference…
  - Michael Kay
  - Wrox Press Inc
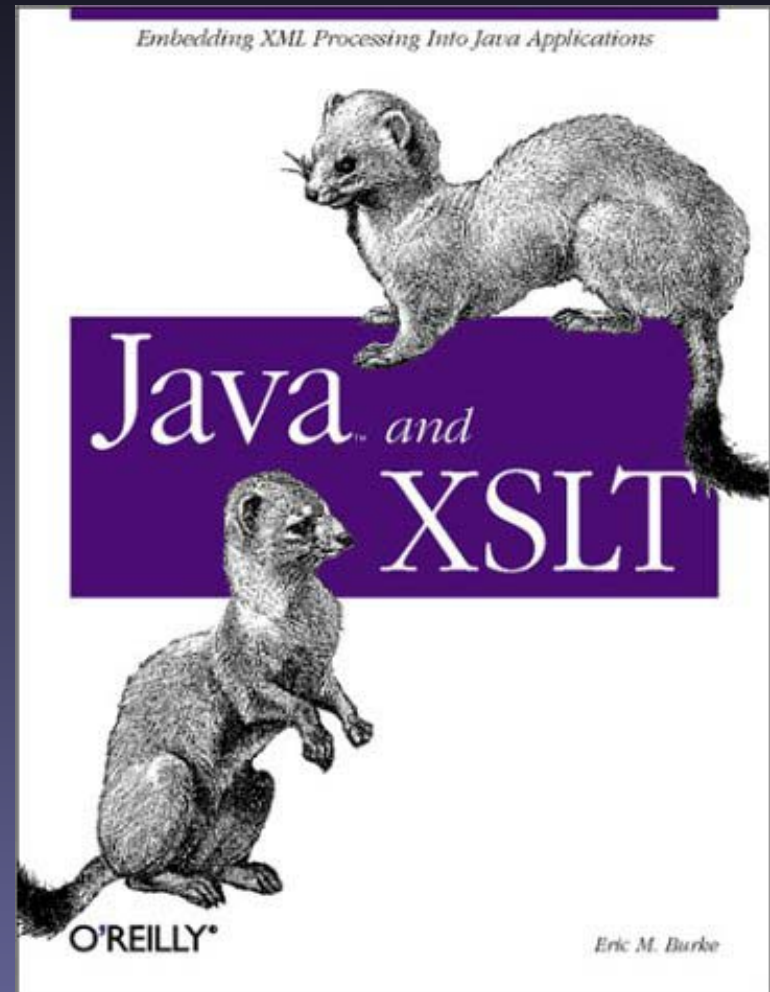 - ISBN: 1861005067

References

- Great practical reference…
  - Jeni Tennison
  - Hungry Minds
  - ISBN: 0764547763

References

- Practical use of transformations in Java code
  - Eric Burke
  - O'Reilly & Assoc.
  - ISBN: 0596001436

Some tools I have used...

These are the applications I am familiar with -- this is not an endorsement ☺

XML Document Development IDE:
- Excelon Stylus Studio
- XML Spy
- Cooktop (open source)

HTML Markup IDE:
- Macromedia Dreamweaver
- Adobe GoLive

HTML to XHTML Conversion/Cleanup
- HTML Tidy (open source)

XSLT Development IDE
- Excelon Stylus Studio
- XML Spy
- Cooktop (open source)

uPortal Look & Feel

The End

jet@immagic.com