

# DirectToWeb 2.0

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# Why Web 2.0?



# Problem

- Fragile
  - Large EOModel
  - $\sim 10^3$  Rules
  - $\sim 10^2$  Page Configs
  - $\sim 10^2$  Custom Components

# Solution

- Tests
  - Selenium Support
- Consolidate Codebase
  - Custom Components
- Rules

# Objectives

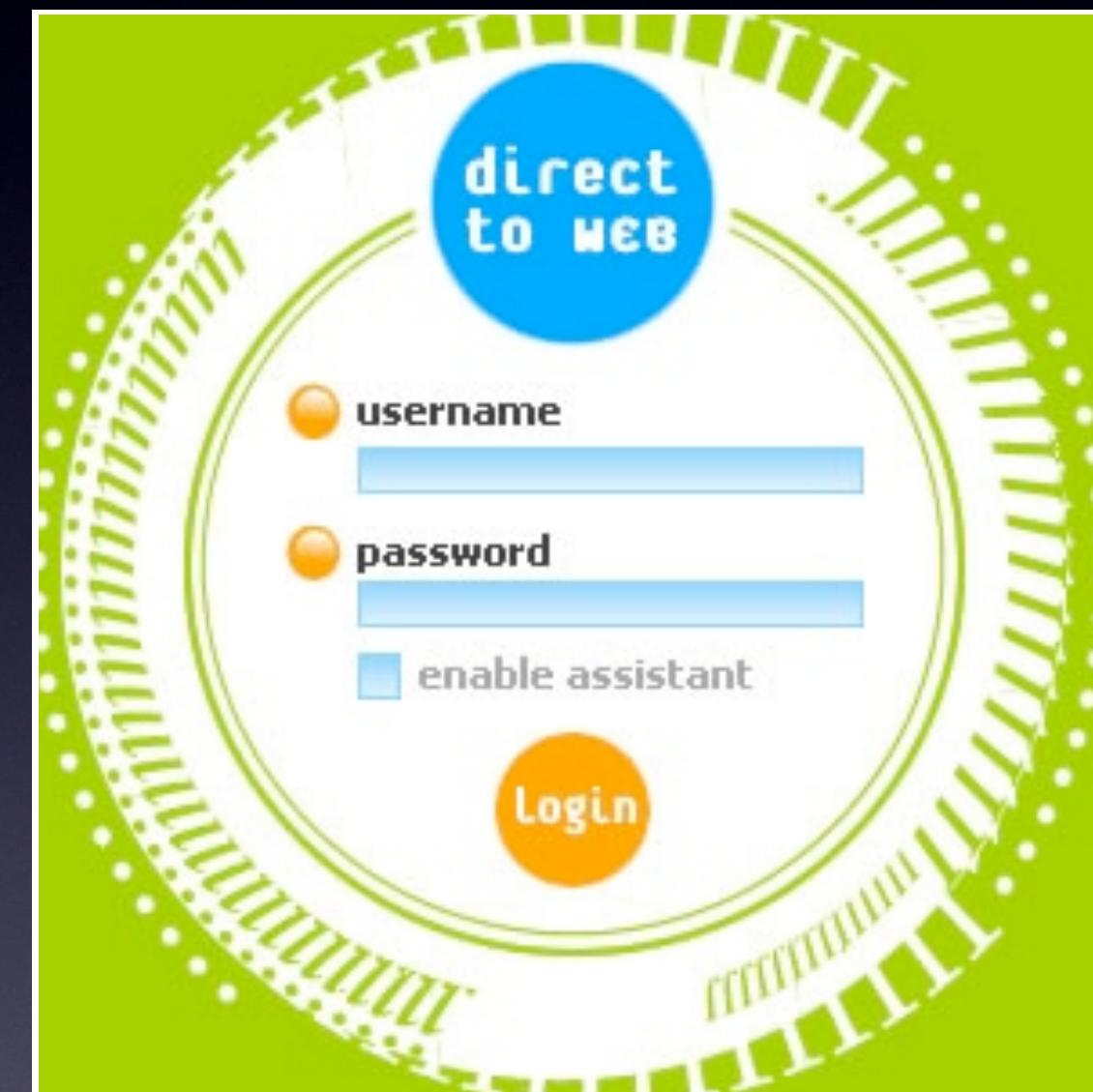
# Objectives

- Hooks
  - Selenium
  - Ajax
- Themed UI

# How?

# DirectToWeb 2.0

- Semantic HTML
  - Table-less
  - Well-formed
  - xHTML5 Validated
- CSS3

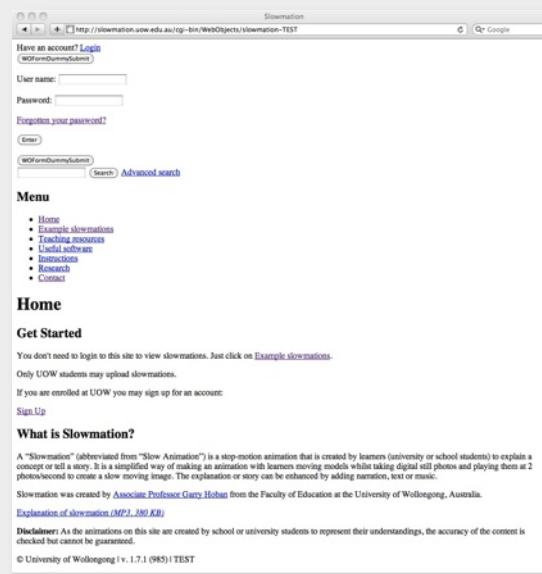
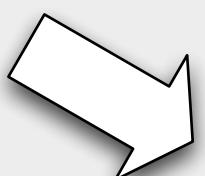
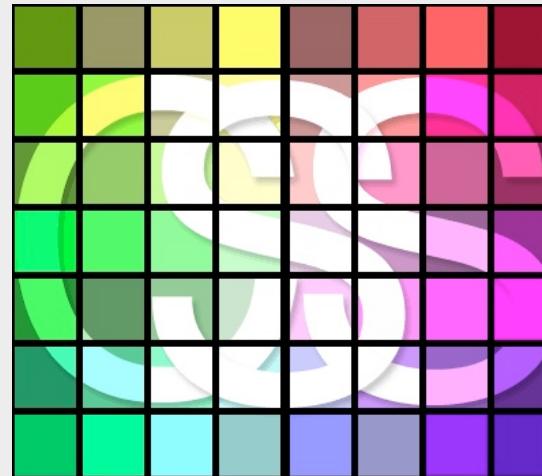
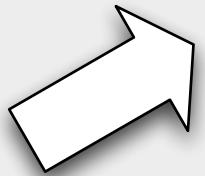


# DirectToWeb 2.0

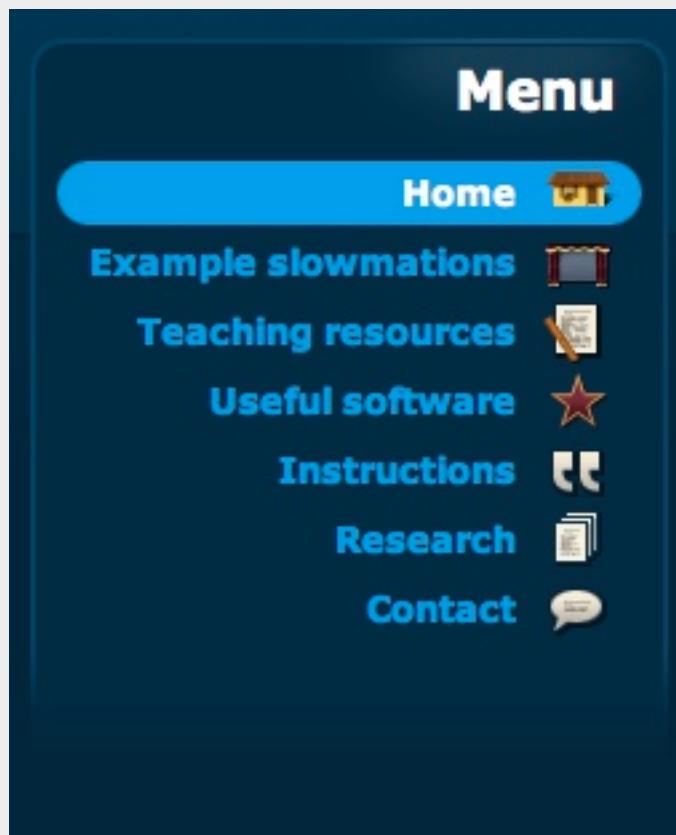
- Semantic HTML
- CSS3
- Ajax
  - Dynamic D2W
- Scriptaculous
- Selenium

# Semantic HTML

# Semantic HTML



# Semantic HTML - Example



# Semantic HTML - Example

```
// Look Ma - No tables!
<h2>Menu</h2>
<ul>
  <li class="home">
    <a class="current" href="/cgi-bin/WebObjects/slowmation.woa/wa/default">Home</a>
  </li>
  <li class="public">
    <a href="/cgi-bin/WebObjects/slowmation.woa/wa/galleryPage">Example slowmations</a>
  </li>
  <li class="resources">
    <a href="/cgi-bin/WebObjects/slowmation.woa/wa/resourcesPage">Teaching resources</a>
  </li>
  <li class="software">
    <a href="/cgi-bin/WebObjects/slowmation.woa/wa/softwarePage">Useful software</a>
  </li>
  <li class="instructions">
    <a href="/cgi-bin/WebObjects/slowmation.woa/wa/instructionsPage">Instructions</a>
  </li>
  <li class="publications">
    <a href="/cgi-bin/WebObjects/slowmation.woa/wa/researchPage">Research</a>
  </li>
  <li class="contact">
    <a href="/cgi-bin/WebObjects/slowmation.woa/wa/contactsPage">Contact</a>
  </li>
</ul>
```



# Semantic HTML

- **No Tables!**  
...only for Tabular Data
- Use:
  - <div>, <span>
  - Lists: <ul>, <ol>
  - Text: <p>
- No Images

# CSS3

- ALL Layout
  - Positions & Margins
  - Columns
- Colours & Fonts
- Images
- 2D Effects



*Well Formed*

# Well-Formed HTML

```
// Closed Elements.
```

```
// E.g:
```

```
<div>...</div>
```

```
<br />
```

```
// proper nesting
```

```
<ul>
```

```
  <li>...</li>
```

```
</ul>
```



# Well-Formed HTML

```
// Unique IDs  
<div id="a">Hey, i'm unique...</div>
```



# Validate

# WO - elementID

```
<form name="f_1_1" method="post" action="/cgi-bin/WebObjects/MyApp.woa/wo/vrsdatqeeGoxo1tAggnGoM/0.1.1">
    <div>Username: <input type="text" name="1.1.1" /> </div>
    <div>Password: <input type="password" name="1.1.3" /> </div>
    <div><input title="Login" name="1.1.4" type="submit" /></div>
</form>
```



# Default Assignments

- PageConfig → UID
  - <entity, task>
- D2W Context → UID
  - <entity, task, key>

# Default Assignments

- idForPageConfiguration
- idForProperty
- nameForProperty (Forms)

# Default Assignments

- Hooks
  - CSS3
  - Ajax
  - Selenium

# D2W + Semantic HTML





# CSS3 - Customizations

- Title
- Buttons

The screenshot shows a web application titled "ACTIVITY MANAGEMENT". The main heading is "6 Activities". Below it is a table with two columns: "Name" and "Position". The table lists six items, each with a pencil icon and a link:

Name	Position
<a href="#">You and the Media 1</a>	
<a href="#">Media Messages 2</a>	
<a href="#">Crossing Media 3</a>	
<a href="#">The News Process 4</a>	
<a href="#">Deconstructing TV 5</a>	
<a href="#">Real Stories 6</a>	

At the bottom are buttons for "< BACK" and "ADD A NEW ACTIVITY".

# CSS3 - Pseudo-Classes

```
div#a h2.entity:after {  
    content: " Management";  
}
```

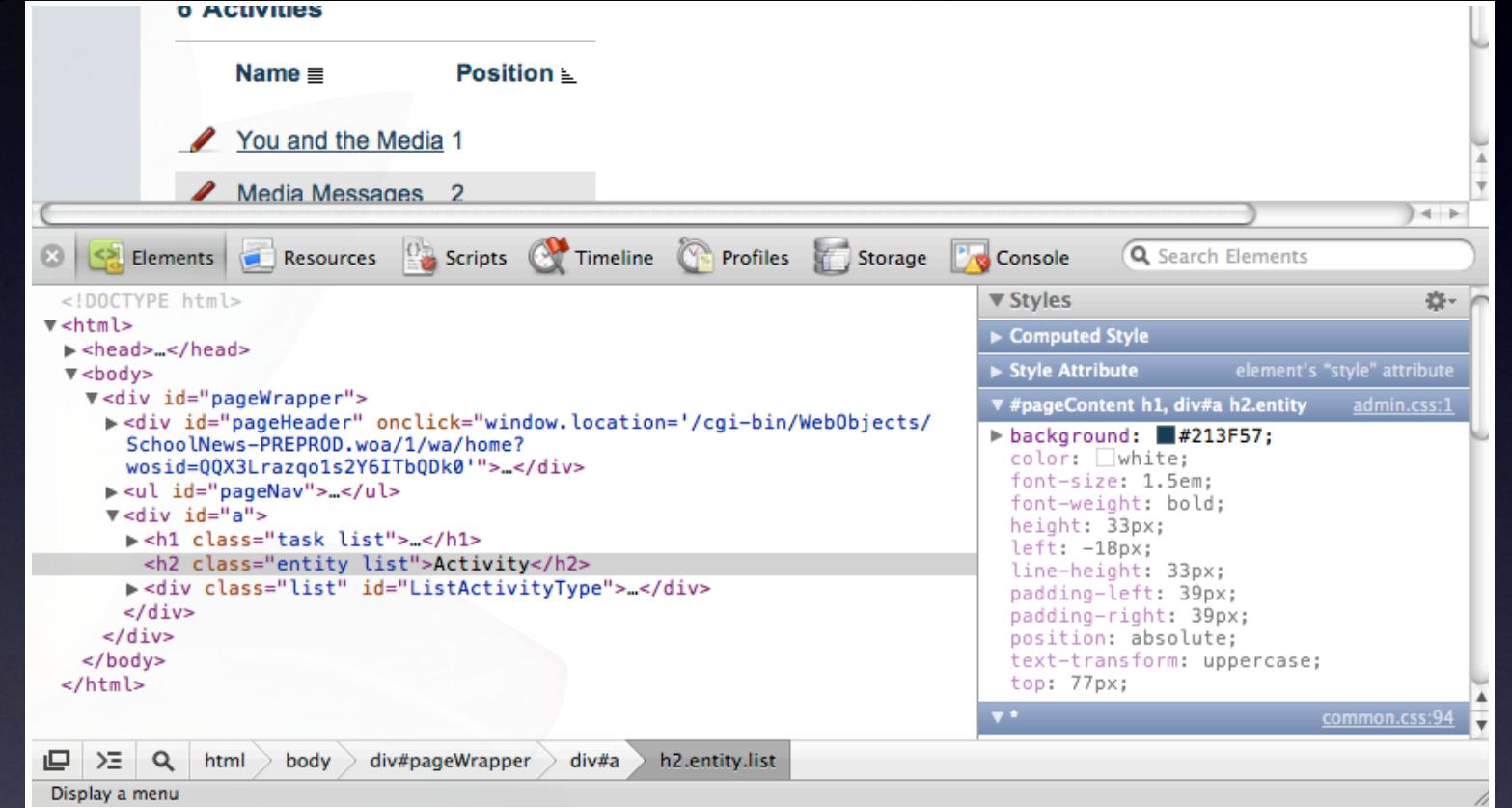


# CSS3 - Pseudo-Classes

```
// Back
div#a ul.batch_nav_bar li.back a.return span:before {
    content: "< ";
}

// Add
div#a #ListActivityType ul.batch_nav_bar li.add a:after {
    content: " a New Activity";
}
```





# CSS3 - Web Inspector



# Custom UI

# Rules + CSS

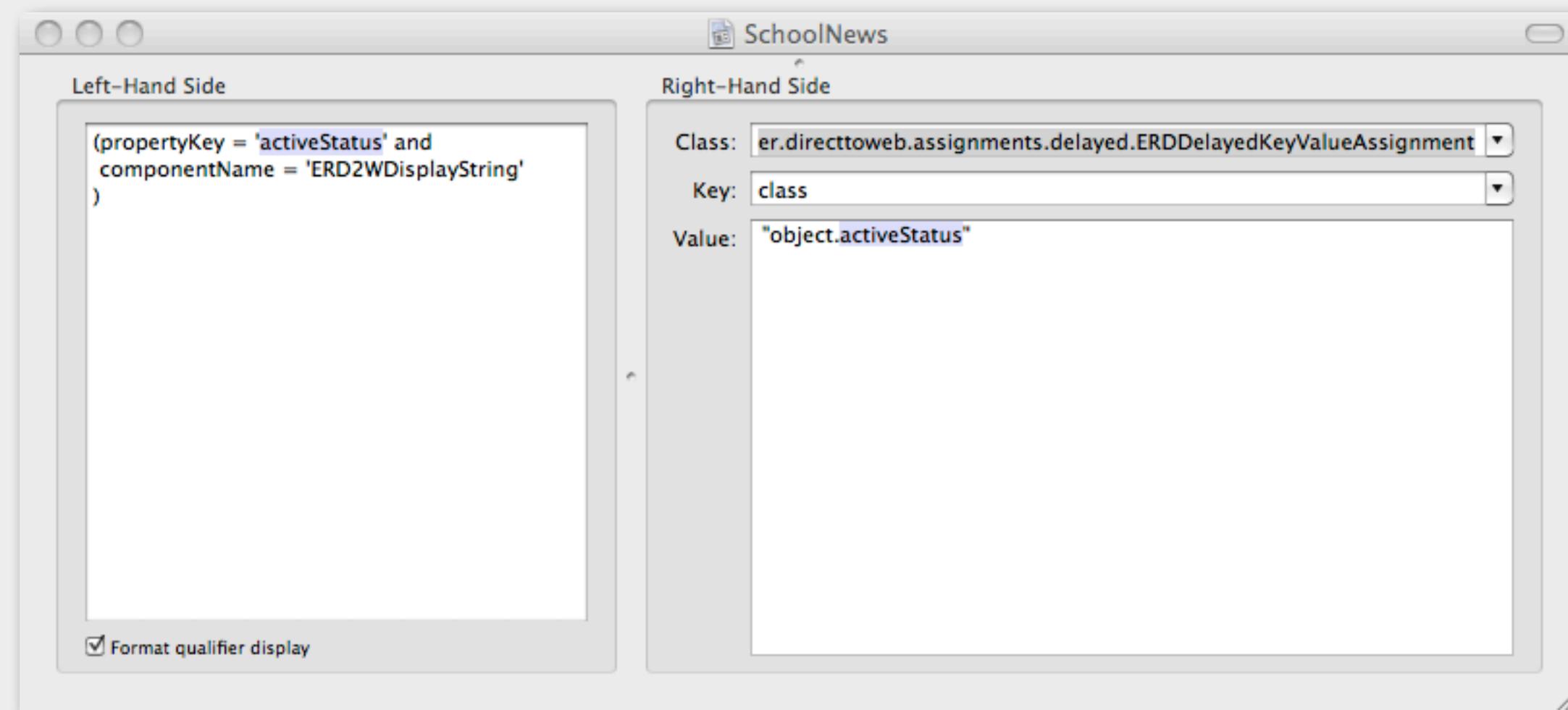
- ERD2WDisplayString
- D2W Delayed Assignment
- Key “*class*”
- CSS
- Image Replacement

The screenshot shows a web browser's developer tools with the "Elements" tab selected. At the top, there is a table with columns: Type, Classes, Students, Active, and delete. Below the table, the DOM tree is visible, showing various `<td>` elements with different classes like `pubPri`, `schoolClasses_count`, `users_count`, and `activeStatus`. The `activeStatus` class is highlighted. On the right side, the "Styles" panel displays the computed styles for this element, including:

- span.true {background: url(...);}
- span.true, span.false {display: block; height: 16px; text-indent: -5000px; width: 16px;}
- \* {font-family: Arial, Helvetica, sans-serif; margin: 0px; padding: 0px;}

The "Inherited from td.activeStatus.ERD2WDisplayString" section lists common.css:94 and Inherited from tr#School3.

# D2W Rules



# CSS - Image Replacement

```
/* D2WDisplayBoolean2.css */

span.true, span.false {
    text-indent: -5000px;
    display: block;
    width: 16px;
    height: 16px;
}

span.true {
    background: url(/WebObjects/Frameworks/JavaDirectToWeb.framework/WebServerResources/CheckboxOn.gif);
}

span.false {
    background: url(/WebObjects/Frameworks/JavaDirectToWeb.framework/WebServerResources/CheckboxOff.gif);
}
```



# Ajax

# Ajax



Rich Client

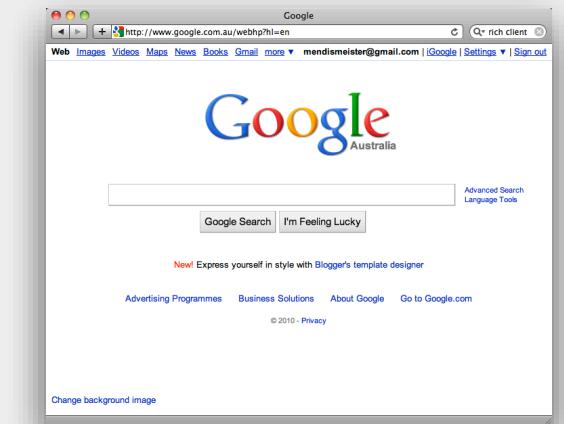


Stateless Services:  
XML,  
JSON

Stateless Servers:  
*Play!* ▶



http://



Stateful Servers:



WebObjects



# Ajax

	<code>.show() .hide()</code>	<code>.toggle()</code>
	<code>Element.show Element.hide</code>	<code>Element.toggle</code>

*Embrace Statelessness!*

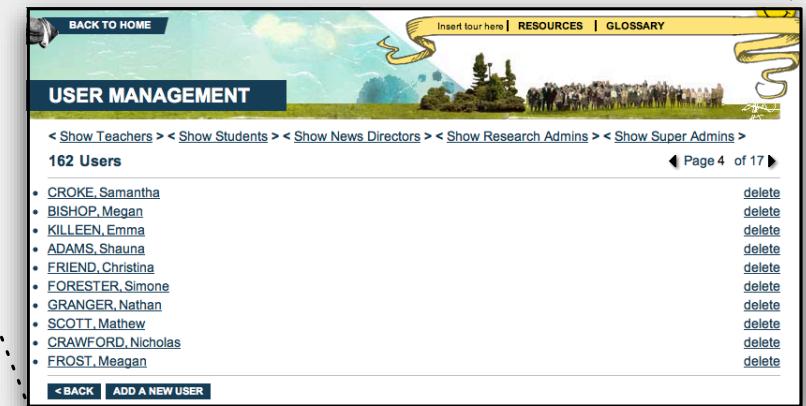
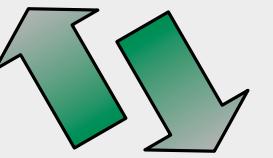


# Ajax Actions

	<code>jQuery.get()</code> <code>jQuery.post()</code>	<code>.load()</code>
	<code>Ajax.Request</code> <code>Ajax.Updater</code>	<code>.update()</code>

# Ajax Actions

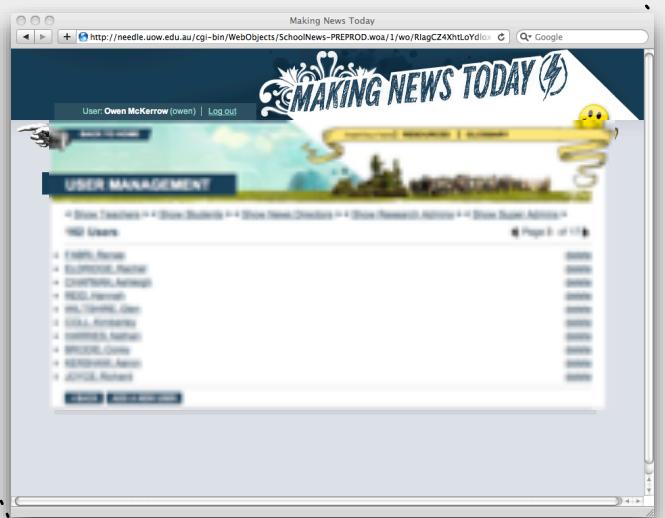
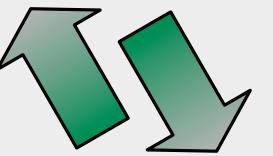
Web Page



Page Fragment

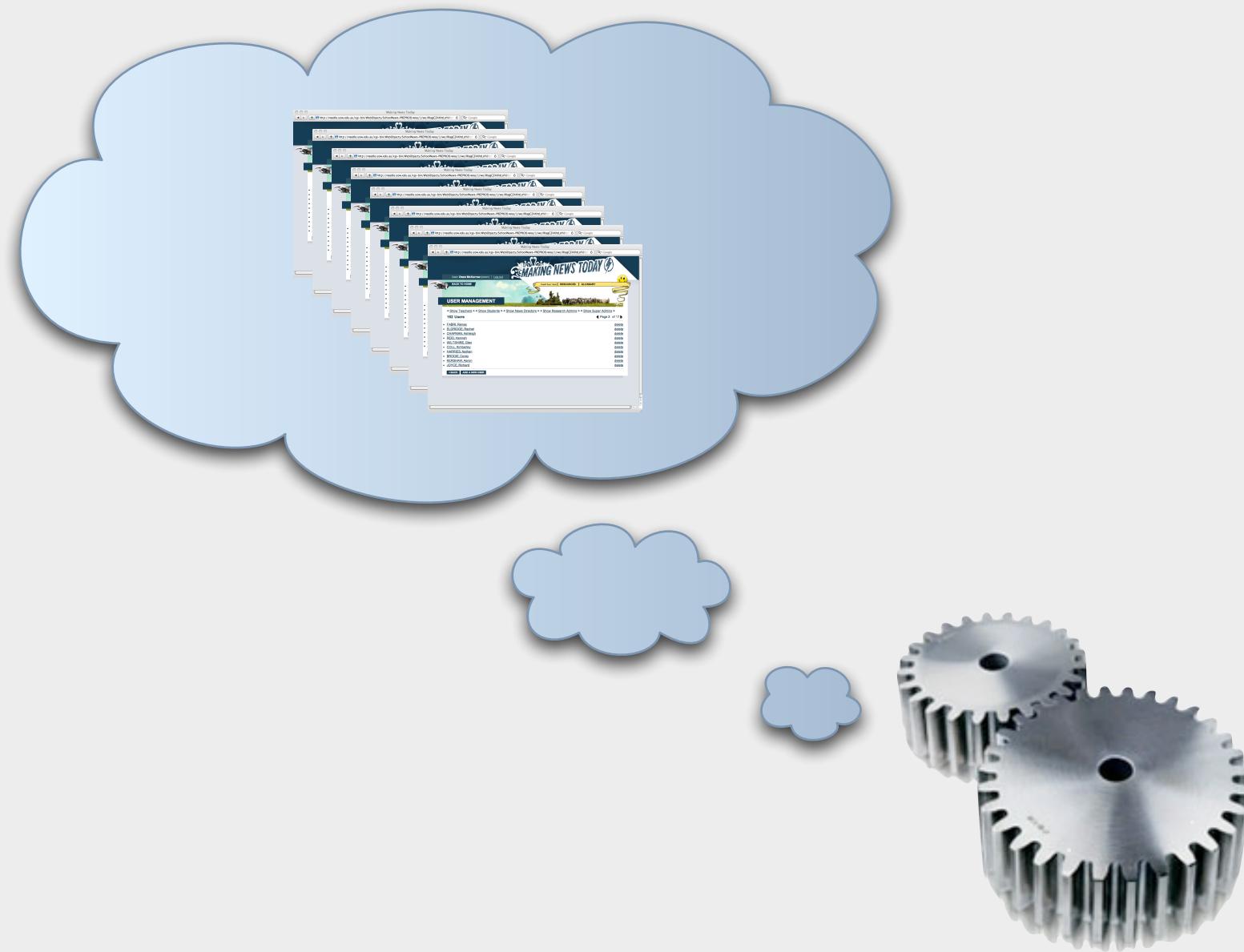
# Web Actions

Web Page



Web Page

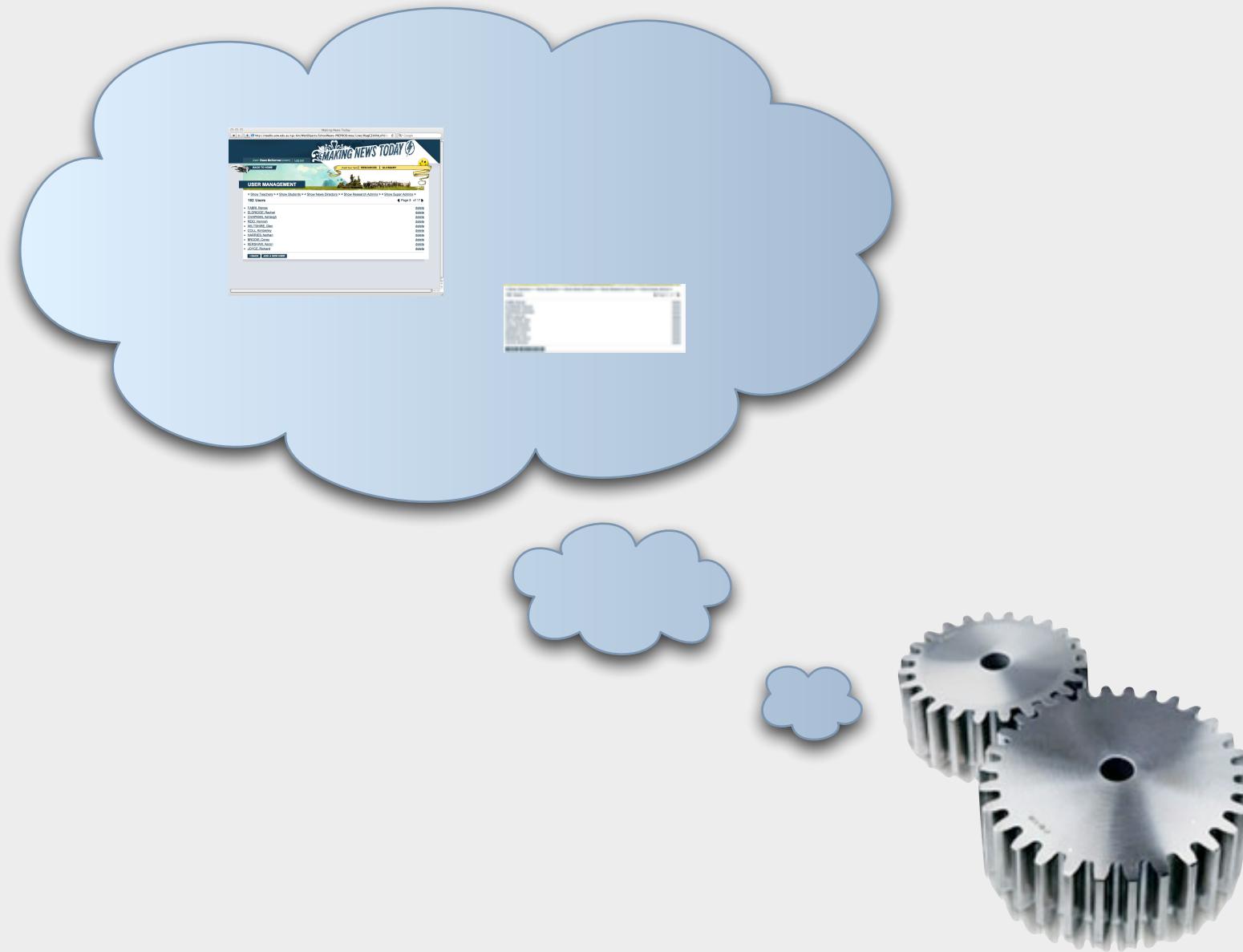
# Web State



WebObjects



# Ajax State



WebObjects





# No Backtrack Too Far!



# Dynamic D2W



# Dynamic D2W

- NO Custom Components!
- Embedded List
- Ajax
- Delayed Assignment

Edit

Studio

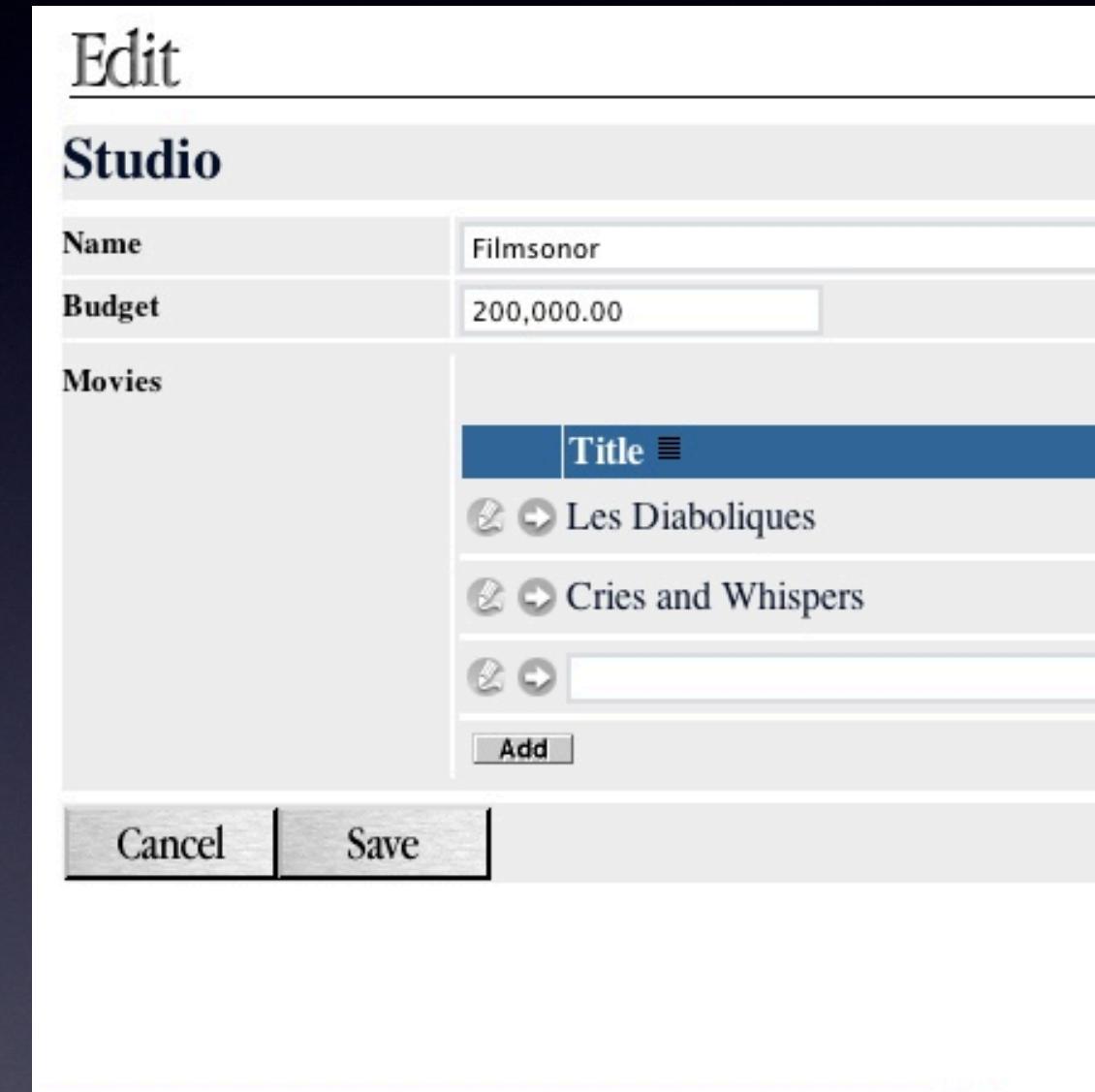
Name	Filmsonor
Budget	200,000.00
Movies	

Title

- Les Diaboliques
- Cries and Whispers
- (empty)

Add

Cancel Save



# Dynamic D2W - Rules



# Dynamic D2W - Example

- restrictedChoiceKey
- Ajax updater

Country  

State  

City  

# Scriptaculous



# Effect - Toggle

- Effect.toggle
  - ID
  - slide

List		
15 Customers		
First Name	Last Name	Member Since
▶ ⌂ ⌂ William	Anthony	January 25, 199
▶ ⌂ ⌂ Joanne	Boyles	January 25, 199
Street Address	29 Timber Creek Drive	
City	Menlo Park	
State	CA	
Zip	93211	
▶ ⌂ ⌂ Mark	Capra	January 25, 199
▶ ⌂ ⌂ Jerry	Drummber	January 25, 199
▶ ⌂ ⌂ Freddy	Filmore	January 25, 199
▶ ⌂ ⌂ Maria	Euler	January 25, 199

# Effect - Toggle

// WOD

```
CollapseLink: WOHyperlink {  
    href = "#";  
    onclick = onClick;  
}
```



# Effect - Toggle

```
// Java - detail toggle
public String onClick() {
    return "Effect.toggle($('#' + tbodyID() + ')', 'slide', {duration: 0.8}); return false;" // tbodyID = Customer2_detail
}
```



# Effect - Toggle

```
// HTML
<tr class = "detail">
    <td class = "detail">
        <div id = "Customer2_detail">
            <div>....</div>                                // Second div nesting necessary for scriptaculous
        </div>
    </td>
</tr>
```



# Selenium

# XPath

```
/* Save button */  
//button[@class='save ERXSubmitButton-submitAction']  
  
/* Password field */  
//div[@id='Student_edit_password_container']/input  
  
/* Error message */  
//div[@id='messages']/span[@class='error']
```



Demo



Q: How Do I Modernize My D2W  
Application?

Diva<sup>lite</sup>



# Migration - Phase #1

- HTML5 & CSS3
  - Strip Tables
  - Themes
- Selenium Tests

# Migration - Phase #2

- Ajax
  - Widgets
  - Effects
- Selenium Tests (Update)

# Migrating to DirectToWeb 2.0

	Page Configurations	Rules	Custom Components
	34	126	2
	40	183	4
	67	180	0





# Q&A

# WOWODC!

# References

- Semantic HTML  
[http://en.wikipedia.org/wiki/Semantic\\_HTML](http://en.wikipedia.org/wiki/Semantic_HTML)
- What is Diva Look?  
<http://wiki.objectstyle.org/confluence/display/WO/ERDivaLook>
- Podcast - Test Driven Development with WebObjects  
<http://www.wocommunity.org/podcasts/WOWODCW09-TDD.mov>