



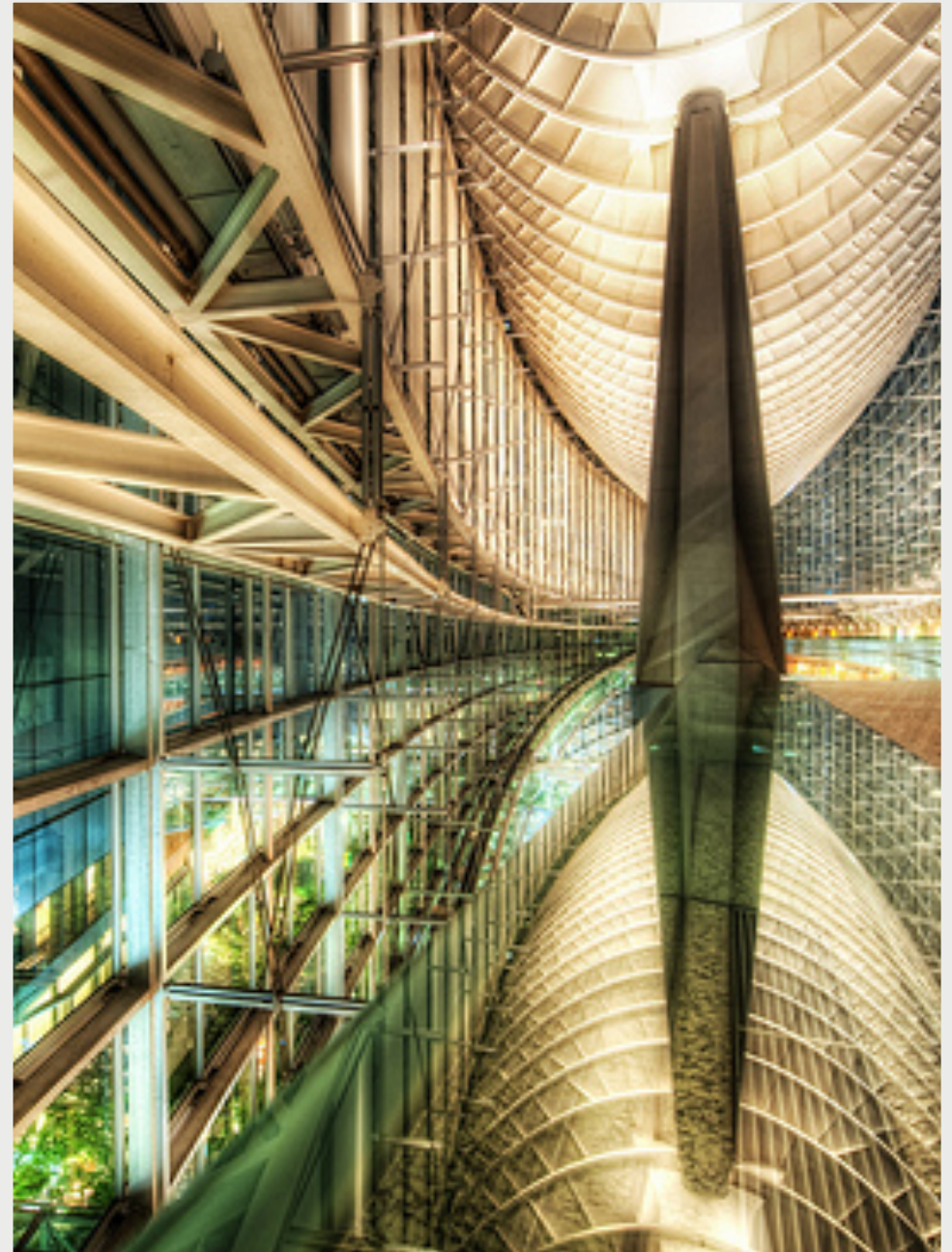
# SOFEA Applications with GWT and Grails

**Matt Raible**  
<http://raibledesigns.com>



# INTRODUCTIONS

- Are you developing web applications?
- Experience with RIA Frameworks?
- Experience with Grails?
- What do you hope to get out of this session?





Founder of AppFuse

Author of Spring Live and Pro JSP 2.0

## WHO IS MATT RAIBLE?

Connoisseur of Web Frameworks

Father, Skier, Cyclist and Beer Connoisseur  
Blogger on raibledesigns.com since 2002





# SESSION AGENDA

- SOFEA, SOUI and Client Server 2.0
- Ajax Frameworks Analysis
- Why GWT?
- Why Grails?
- Conclusion
- Q and A



# SOFEA & SOUI

- SOFEA first introduced in Life above the Service Tier on 10/12/2007.
- [http://www.theserverside.com/news/thread.tss?thread\\_id=47213](http://www.theserverside.com/news/thread.tss?thread_id=47213)
- SOUI introduced by Nolan Wright and Jeff Haynie in early November 2007.
- <http://www.infoq.com/news/2007/11/soui-death-of-mvc2>

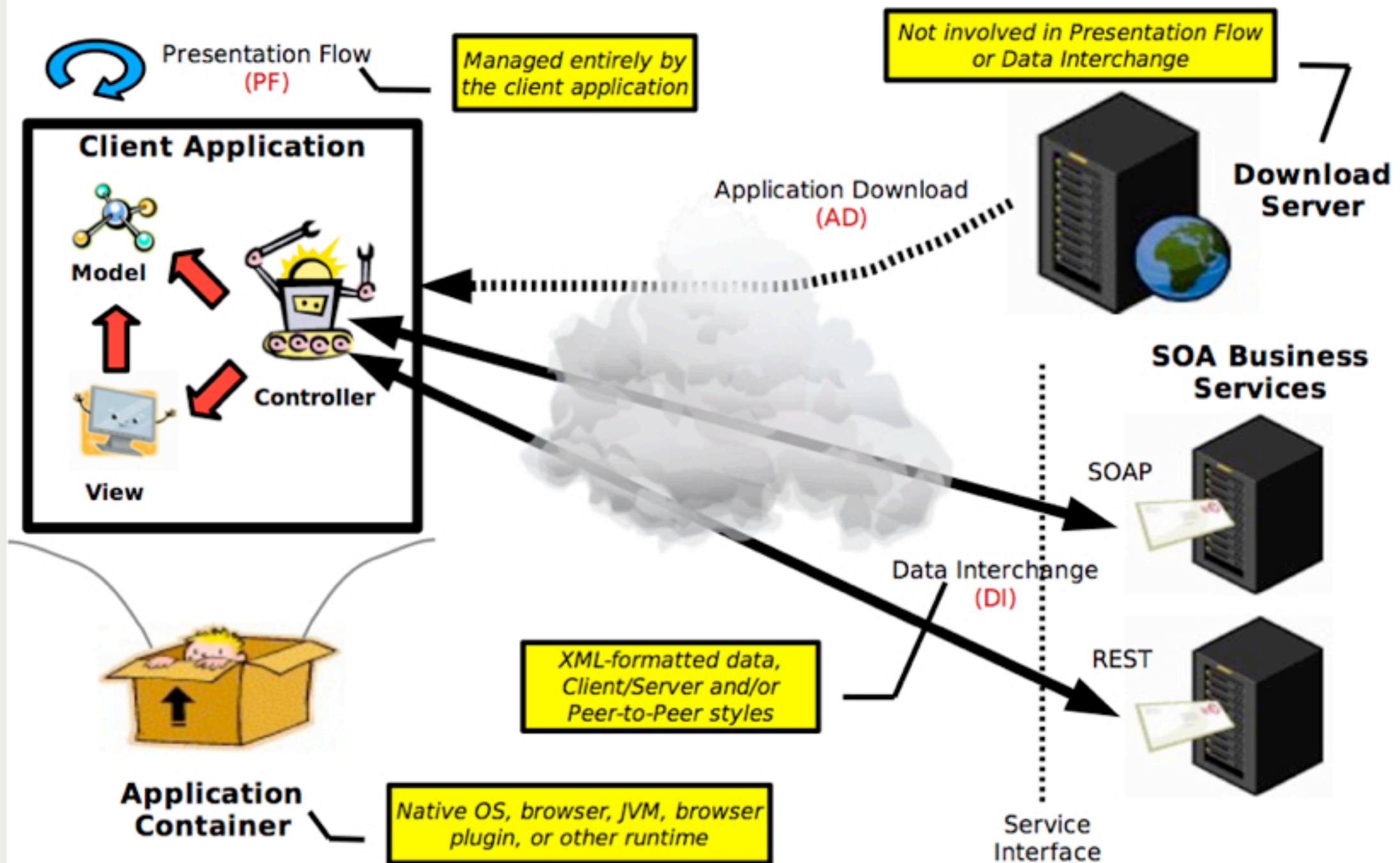


# SOFEA & SOUI

- SOFEA Authors have since formed the Thin Server Architecture Working Group.
- <http://www.thinserverarchitecture.com>
- Increasing productivity through simplicity*
- Nolan and Jeff started Appcelerator.
- <http://www.appcelerator.org>



## SOFEA (Service-Oriented Front-End Architecture)







## DAWN OF A NEW ERA

*From web frameworks to services, clients and Ajax...*



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# CHOOSING AN AJAX FRAMEWORK

1. Choose a short list of frameworks to prototype with.
2. Create an application prototype with each framework.
3. Document findings and create a matrix with important criteria.
4. Create presentation to summarize document.
5. Deliver document, presentation (with demos) and recommendation.



[http://raibledesigns.com/rd/entry/choosing\\_an\\_ajax\\_framework](http://raibledesigns.com/rd/entry/choosing_an_ajax_framework)



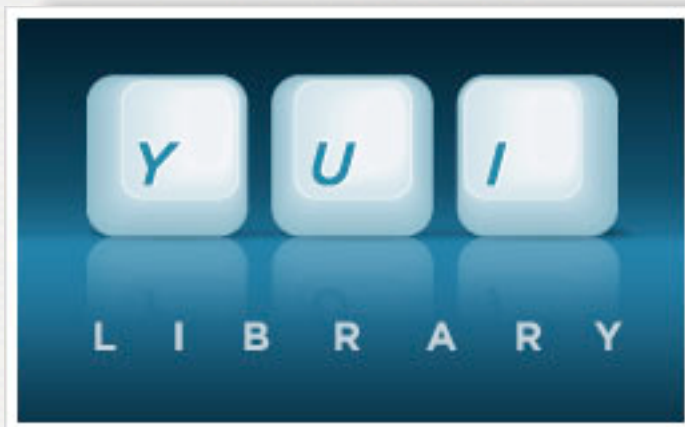
# CHOSEN FRAMEWORKS

The ExtJS logo features the word "Ext" in blue and "JS" in green, both in a bold, sans-serif font. The text is reflected below it on a white background.

ExtJS

The dōjō logo is written in a large, black, serif font. The characters have a slight shadow effect, giving them a three-dimensional appearance.

dōjō





# OUR RESULTS

Weight*	Criteria	Dojo weighted	Ext weighted	GWT weighted	YUI weighted
0	Browser support (list of browsers/versions)	0	0	0	0
0	Scalability	0	0	0	0
0	Performance	0	0	0	0
0	Licensing	0	0	0	0
0	Testability (Selenium compatibility)	0	0	0	0
10	Project health/adoption	10	5	10	10
10	Richness of widget/component library	5	10	5	10
10	Flexibility/extensibility	10	5	5	10
10	Productivity (app dev)	5	5	10	5
10	Match to existing Java team skill-set	0	5	10	0
10	Ease of deployment (on Ops, QA, UAT)	5	5	10	5
10	Productivity (web dev)	10	10	5	10
10	Easy to style with CSS	10	10	5	10
5	Validation (esp. marking form elements)	5	5	2.5	2.5
5	Component Theme-ing/Decoration	5	5	2.5	2.5
5	Quality of Documentation/Tutorials/Samples	2.5	2.5	5	5
5	Degree of risk generally	2.5	2.5	5	2.5
0	Charting capability	0	0	0	0
0	Ability to create new widgets	0	0	0	0
0	Ability to integrate with existing site (i.e. Google)	0	0	0	0
0	CDN Availability (i.e. Google's Ajax Library)	0	0	0	0
100		70	70	75	72.5

[http://raibledesigns.com/rd/entry/ajax\\_framework\\_analysis\\_results](http://raibledesigns.com/rd/entry/ajax_framework_analysis_results)



# GWT FIRST IMPRESSION

## Pros



- Write Java => Produces JavaScript
- Easy to learn and develop with standard Java tools
- Vibrant Community
- Zero Turnaround in Hosted Mode

## Cons

- Hard to attach GWT on top of existing code
- Doesn't support REST very well
- Operates within the confines of the browser



[Home](#)[GWT Logo](#)[More Info](#)

Click one of the tabs to see more content

FormPanel

First Name:

Last:

Company:

Email:

Birthday:

Comment:

Order ID	Description	Category	Ship Date	Quantity	Price	Total
Software						
1799	Office Applica	Software	12/2/2009	222	\$30.00	\$6,660.00
1264	Office Produc	Software	1/20/2010	2	\$64.99	\$129.98
629	Office Produc	Software	12/11/2009	2	\$64.99	\$129.98
9311	Software Dev	Software	11/10/2009	8	\$249.99	\$1,999.92
4582	Anti Virus S	Software	2/20/2009	22	50	\$1,100.00
8357	Office Applica	Software	3/5/2009	14	\$30.00	\$420.00
8805	Anti Virus Su	Software	11/20/2009	2	\$50.00	\$100.00
7 Orders		1 Categories	1/20/2010			\$10,539.88
20 Orders		3 Categories				\$31,734.63

GWT, GXT AND SMARTGWT



# MAVEN GWT PLUGIN

- Create project using [archetype](#):

```
mvn archetype:generate \  
-DarchetypeGroupId=org.codehaus.mojo \  
-DarchetypeArtifactId=gwt-maven-plugin \  
-DarchetypeVersion=1.1 \  
-DgroupId=com.yourcompany \  
-DartifactId=gwt-project -Dversion=1.0-SNAPSHOT -B
```

- Fix for GWT 1.7+ with <http://jira.codehaus.org/browse/MGWT-134>



# SAME ORIGIN POLICY

- Modern browsers have a **Same Origin Policy**
- JavaScript has to interact with the same domain



**The page at <http://localhost:8888> says:**

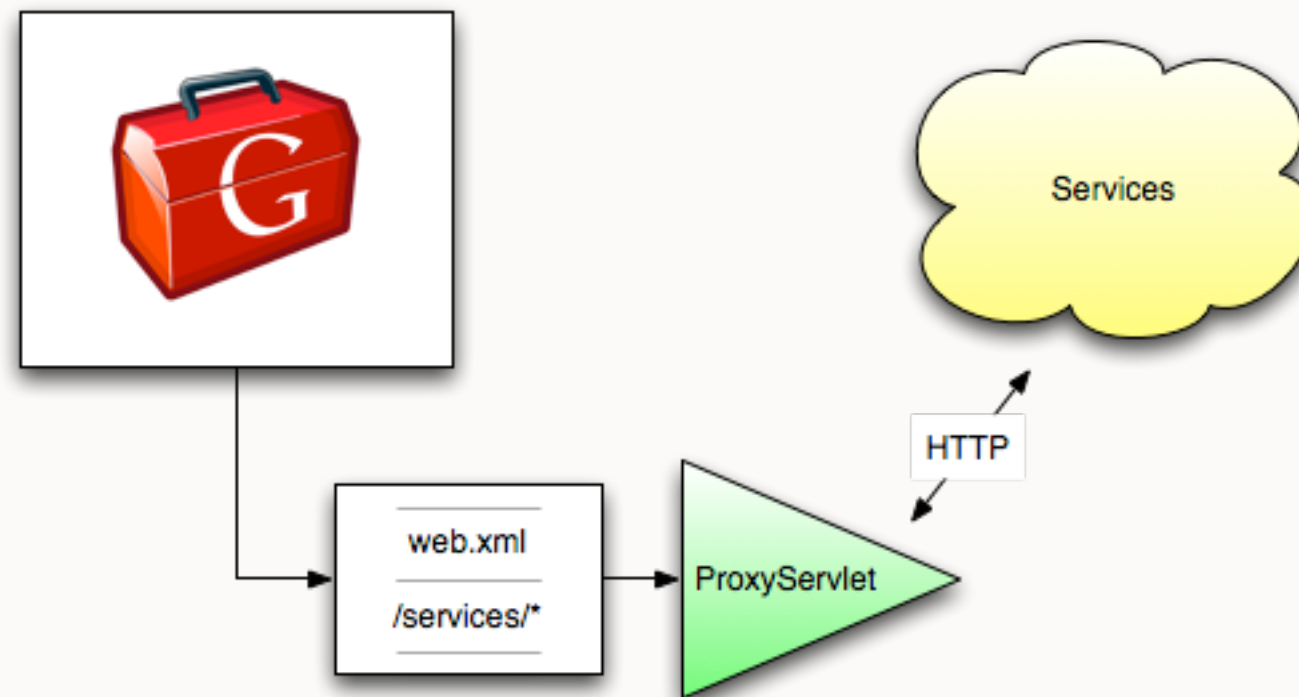
Calling get token failed. Error message is below. Please click OK and refresh your browser to try again.

The URL [https://www.google.com/accounts/OAuthGetRequestToken?oauth\\_consumer\\_key=demo.raibledesigns.com&oauth\\_nonce=2tgfNL&oauth\\_signature\\_method=HMAC-SHA1&oauth\\_timestamp=1245343435&oauth\\_version=1.0&oauth\\_signature=HXjmoLJnRpyZXdrHR2GmsR5Tf0=&scope=http%3A%2F%2Fwww.google.com%2Fm8%2Ffeeds%2F](https://www.google.com/accounts/OAuthGetRequestToken?oauth_consumer_key=demo.raibledesigns.com&oauth_nonce=2tgfNL&oauth_signature_method=HMAC-SHA1&oauth_timestamp=1245343435&oauth_version=1.0&oauth_signature=HXjmoLJnRpyZXdrHR2GmsR5Tf0=&scope=http%3A%2F%2Fwww.google.com%2Fm8%2Ffeeds%2F) is invalid or violates the same-origin security restriction

OK



# PROXY SERVLET



[http://raibledesigns.com/rd/entry/how\\_to\\_do\\_cross\\_domain#proxyServlet](http://raibledesigns.com/rd/entry/how_to_do_cross_domain#proxyServlet)



# MODULARIZING CODE

- GWT Libraries (JARs) for common functionality
- Builder Helper Plugin allows shared source
- Hosted mode can still run on JAR libraries
- [http://raibledesigns.com/rd/entry/running\\_hosted\\_mode\\_in\\_gwt](http://raibledesigns.com/rd/entry/running_hosted_mode_in_gwt)



# TESTING GWT

- GWTTestCase
- [http://raibledesigns.com/rd/entry/testing\\_gwt\\_applications](http://raibledesigns.com/rd/entry/testing_gwt_applications)
- Code Coverage via EclEmma and IntelliJ IDEA
- JUnit and EasyMock
- Works great with MVP
- [http://raibledesigns.com/rd/entry/building\\_gwt\\_applications\\_with\\_mvp](http://raibledesigns.com/rd/entry/building_gwt_applications_with_mvp)



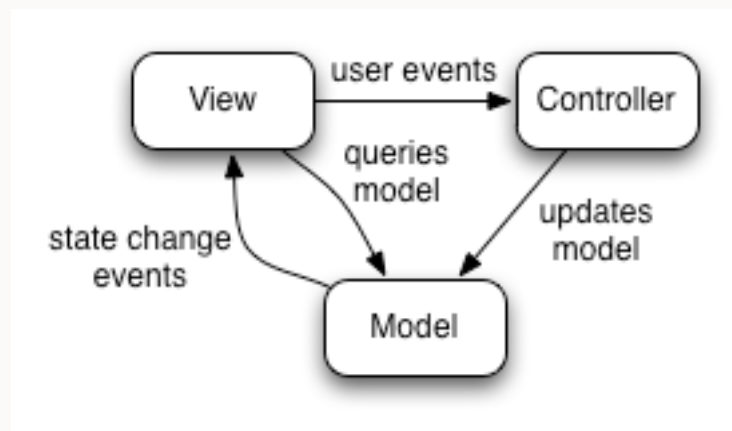
# PACKAGING AND SELENIUM

- Package as one or two WARs using the `UrlRewriteFilter` to manipulate service URIs
- [http://raibledesigns.com/rd/entry/packaging\\_a\\_sofea\\_application\\_for](http://raibledesigns.com/rd/entry/packaging_a_sofea_application_for)
- Use Cargo and Selenium to test the UI
- Make sure to set IDs on elements!
- Can still test GWT libraries with this setup
- [http://raibledesigns.com/rd/entry/testing\\_gwt\\_libraries\\_with\\_selenium](http://raibledesigns.com/rd/entry/testing_gwt_libraries_with_selenium)

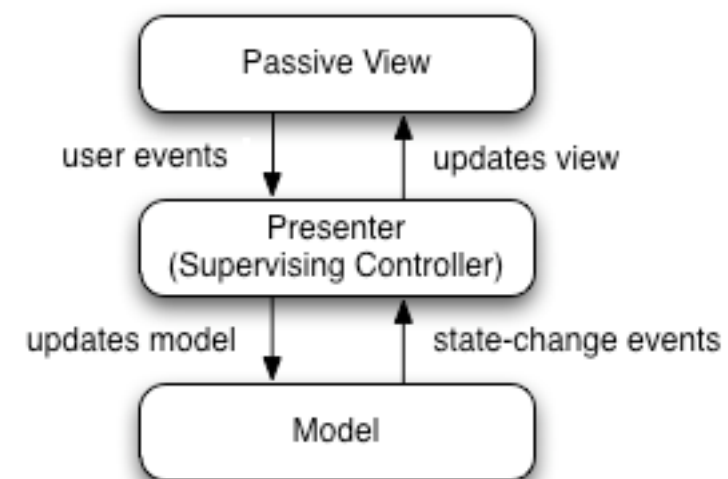


# MVC VS. MVP

[http://raibledesigns.com/rd/entry/gxt\\_s\\_mvc\\_framework](http://raibledesigns.com/rd/entry/gxt_s_mvc_framework)



<http://code.google.com/events/io/2009/sessions/GoogleWebToolkitBestPractices.html>





# MVP RESOURCES

- MVP Example from Hive Development
  - <http://blog.hivedevelopment.co.uk/2009/08/google-web-toolkit-gwt-mvp-example.html>
- GWT Presenter
- Google GIN
- GWT Log



# OVERLAY TYPES

- Easy, efficient JSON
- <http://googlewebtoolkit.blogspot.com/2008/08/getting-to-really-know-gwt-part-2.html>

```
// An overlay type
class Customer extends JavaScriptObject {

    // Overlay types always have protected, zero-arg ctors
    protected Customer() { }

    // Typically, methods on overlay types are JSNI
    public final native String getFirstName() /*-{ return this.FirstName; }-*/;
    public final native String getLastName() /*-{ return this.LastName; }-*/;

    // Note, though, that methods aren't required to be JSNI
    public final String getFullName() {
        return getFirstName() + " " + getLastName();
    }
}
```



# OVERLAY TYPES

```
var jsonData = [  
  { "FirstName" : "Jimmy", "LastName" : "Webber" },  
  { "FirstName" : "Alan", "LastName" : "Dayal" },  
  { "FirstName" : "Keanu", "LastName" : "Spoon" },  
  { "FirstName" : "Emily", "LastName" : "Rudnick" }  
];
```

```
class MyModuleEntryPoint implements EntryPoint {  
  public void onModuleLoad() {  
    Customer c = getFirstCustomer();  
    // Yay! Now I have a JS object that appears to be a Customer  
    Window.alert("Hello, " + c.getFirstName());  
  }  
  
  // Use JSNI to grab the JSON object we care about  
  // The JSON object gets its Java type implicitly  
  // based on the method's return type  
  private native Customer getFirstCustomer() /*-{  
    // Get a reference to the first customer in the JSON array from earlier  
    return $wnd.jsonData[0];  
  }-*/;  
}
```

[http://raibledesigns.com/rd/entry/json\\_parsing\\_with\\_javascript\\_overlay](http://raibledesigns.com/rd/entry/json_parsing_with_javascript_overlay)



# GWT SUMMARY

- Widgets are awesome and lead to über productivity
- More time spent with testing and infrastructure than development (a good thing!)
- Works great with JSON
- Debugging, IDE and Refactoring support are major advantages over raw JavaScript



# WHY GRAILS?

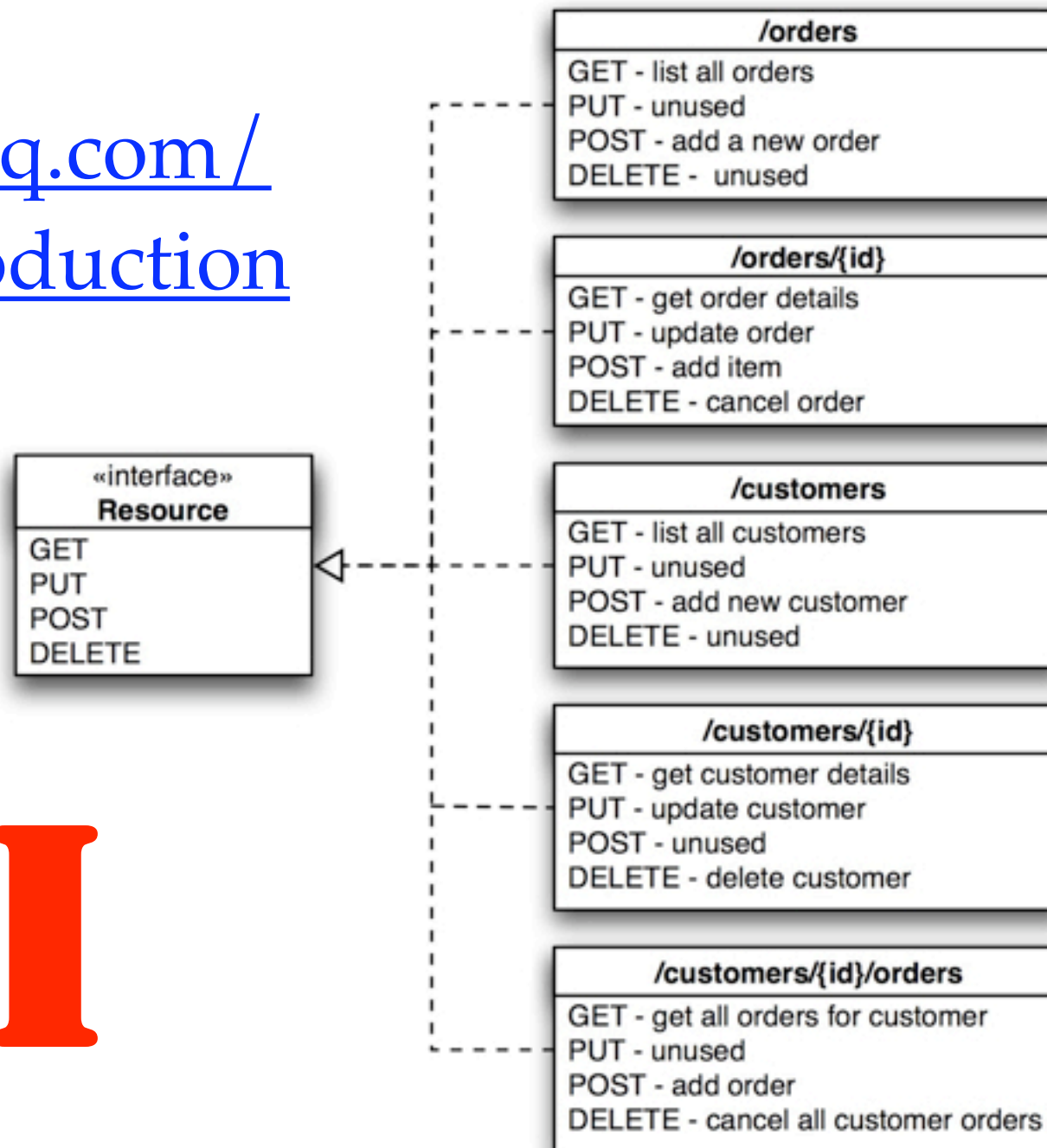
- Existing backend in Spring and Hibernate
- Fast to develop with
- REST support built-in
- Architect Decision



# REST

<http://www.infoq.com/articles/rest-introduction>

# API





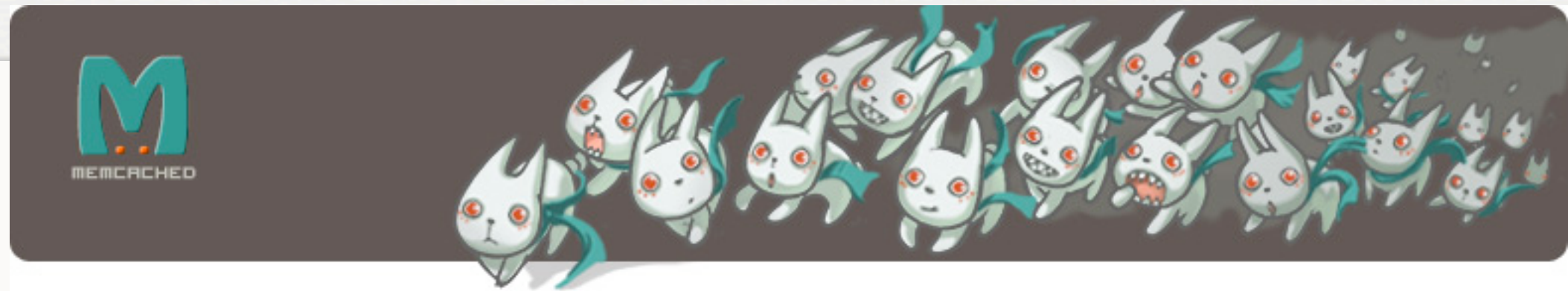
# GRAILS PLUGINS

- Stuck on version 1.0.4
- Test
- Quartz
- Ivy
- Searchable





# GRAILS + MEMCACHED



- Installing and using memcached
  - <http://www.ibm.com/developerworks/java/library/j-memcached1/index.html>
- Integration memcached into Grails
  - <http://www.ibm.com/developerworks/java/library/j-memcached2.html>



# GRAILS SUMMARY

- Grails 1.0.4 JSON Parser fails for deep object graphs
- Very productive, mostly because of Groovy
- Changing services requires restart, not so with controllers
- But ... Smart programmers use Python because Python is good. Python is good, because smart programmers use it.

-- <http://en.wikipedia.org/wiki/Tautology>





## CONCLUSION

*Last Monday, 1.5MM unique visitors, 2MM visits, 10MM pageviews*



# QUESTIONS?

## Contact Information

<http://raibledesigns.com>

<http://twitter.com/mraible>

## Download Presentation

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