

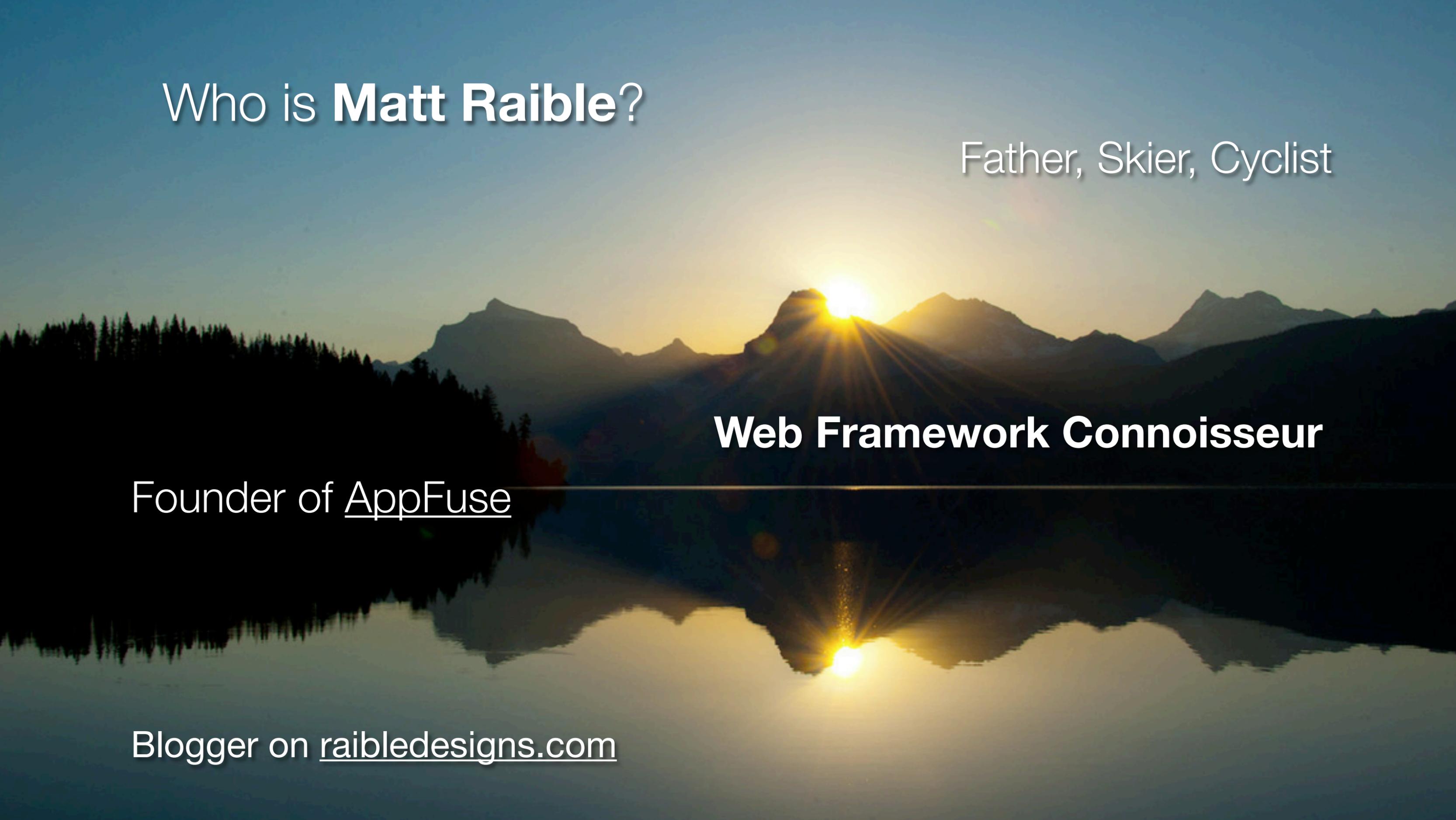
# COMPARING JVM WEB FRAMEWORKS

**Matt Raible**

<http://raibledesigns.com>

@mraible

**DEVOXX**  
WE CODE IN PEACE

A scenic landscape at sunset. The sun is low on the horizon, casting a golden glow over a range of mountains. The sun's rays are visible, and its reflection is clearly seen in a calm lake in the foreground. The sky is a mix of blue and orange, and the mountains are silhouetted against the bright light.

Who is **Matt Raible**?

Father, Skier, Cyclist

**Web Framework Connoisseur**

Founder of [AppFuse](#)

Blogger on [raibledesigns.com](#)

# Introductions

- ▶ Are you currently developing web applications for the JVM?
- ▶ Have you written web apps with Servlets or JSF?
- ▶ Experience with Grails, GWT, Rails, Spring MVC, Wicket, Tapestry or Play?
- ▶ Does anyone hate a framework? Love a framework?

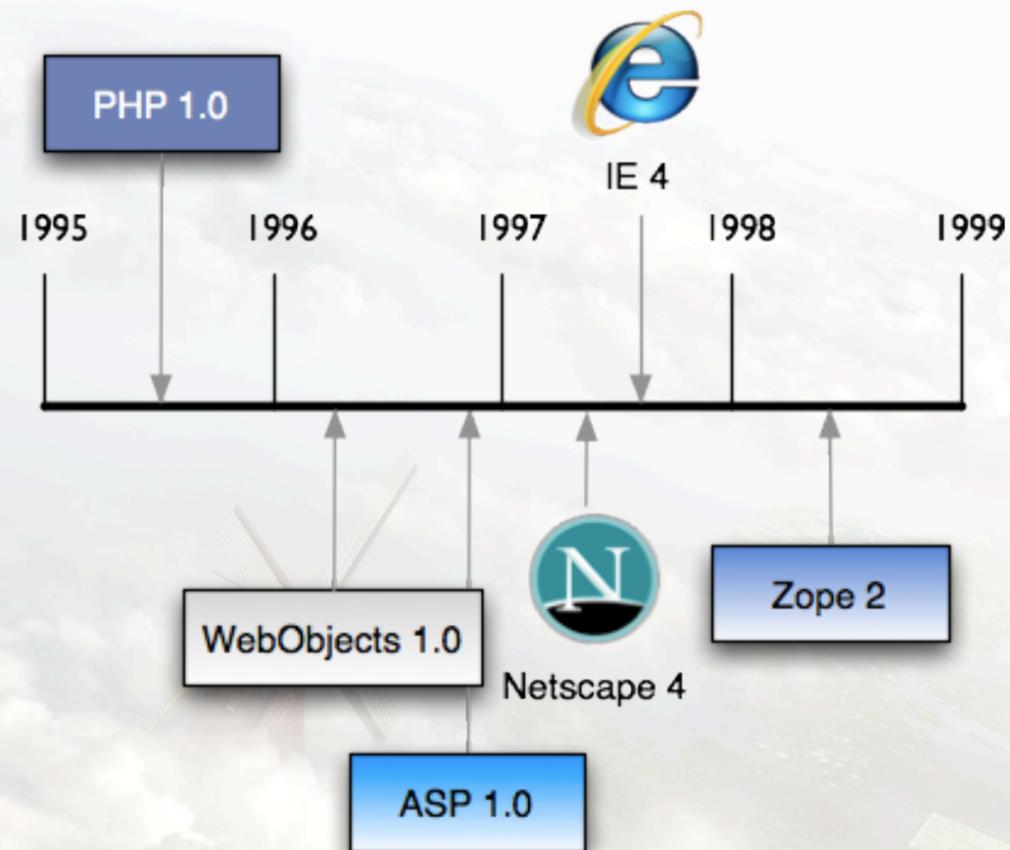


# Session Agenda

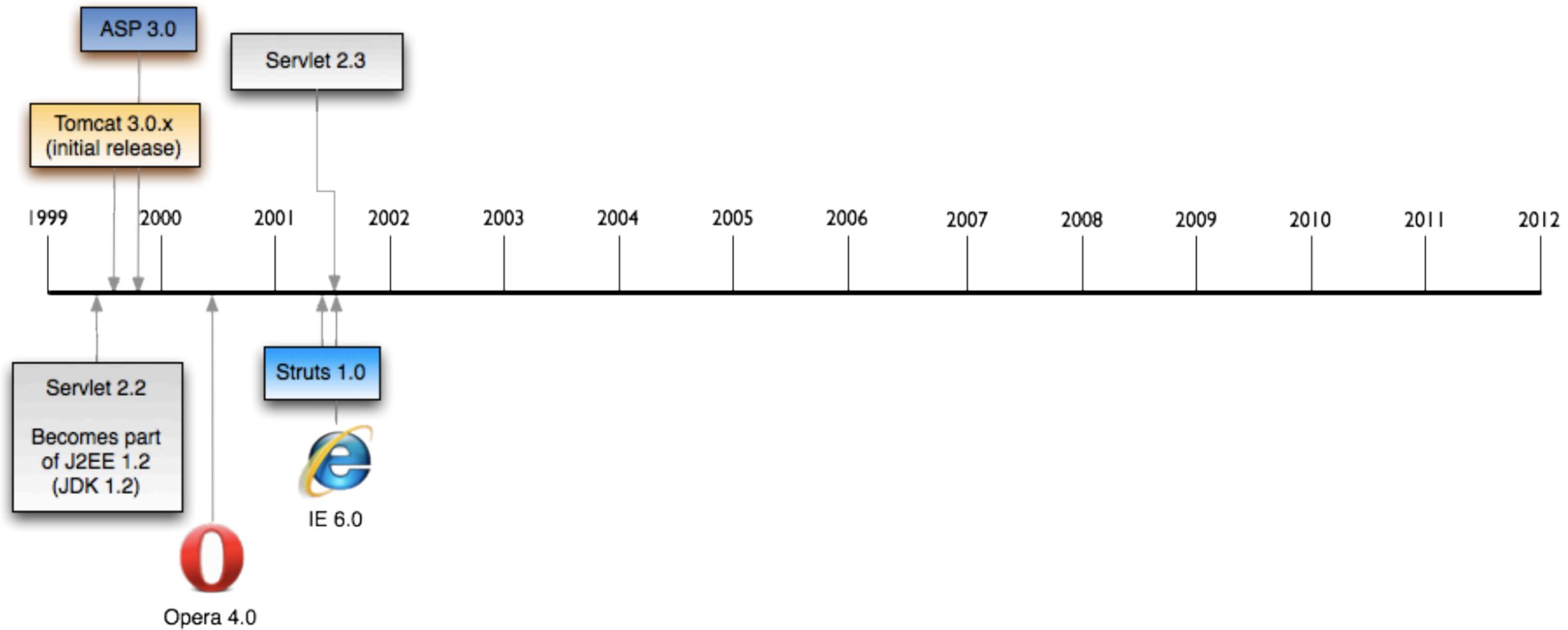
- ▶ History of JVM Web Frameworks
- ▶ The Paradox of Choice
- ▶ Methods and Metrics
- ▶ Conclusion
- ▶ Q and A



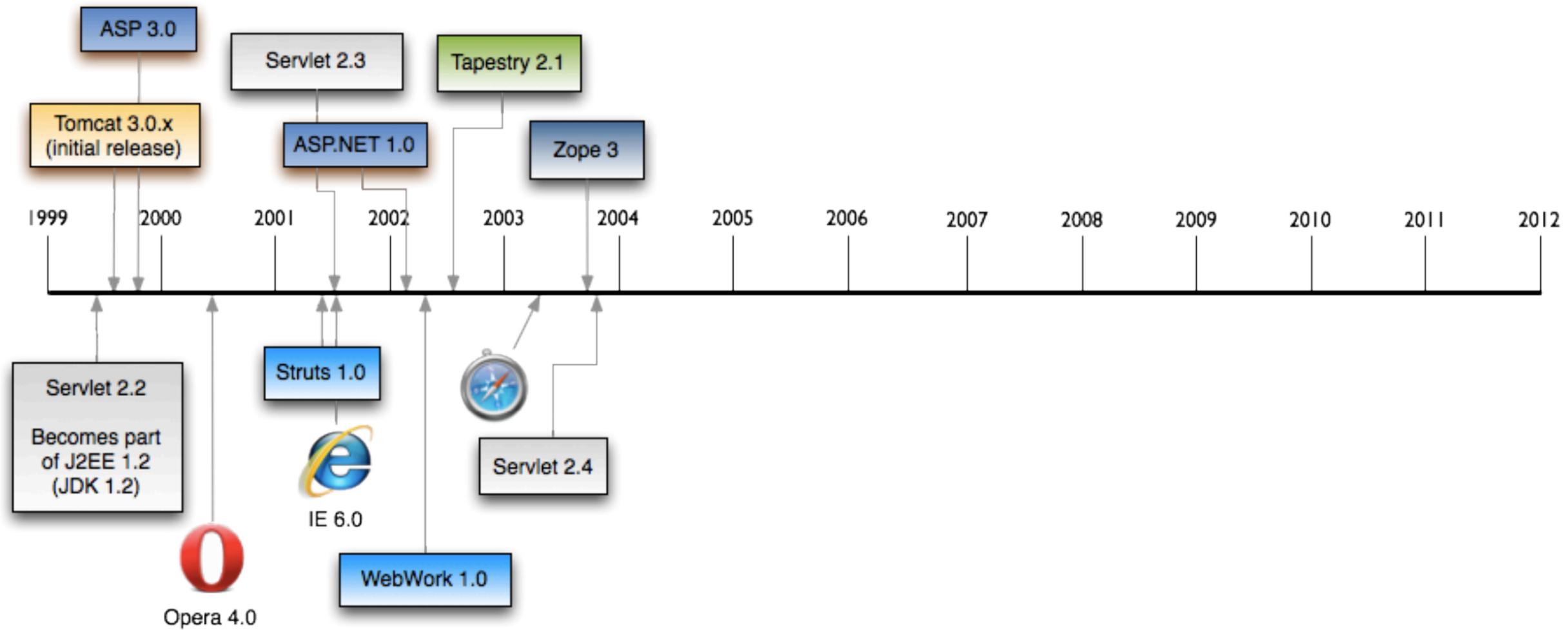
# History of Web Frameworks



# History of Web Frameworks



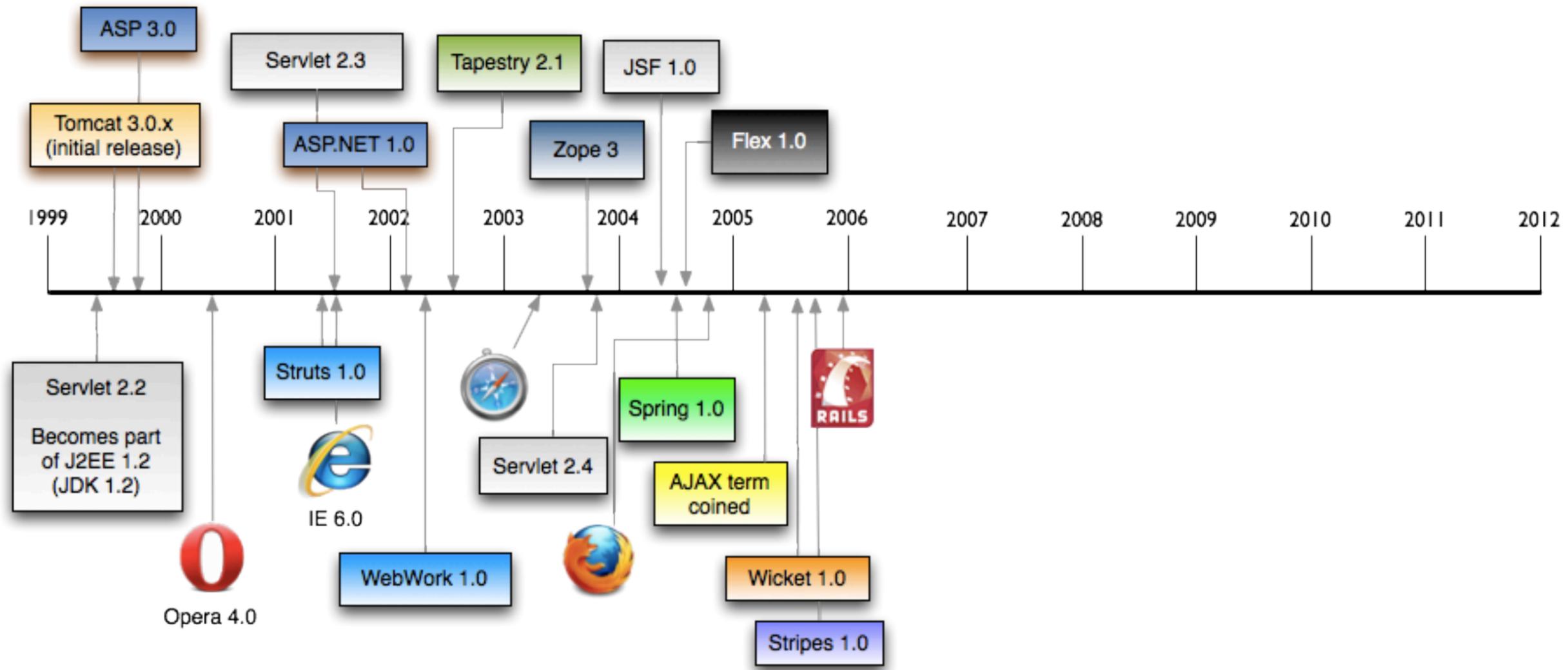
# History of Web Frameworks



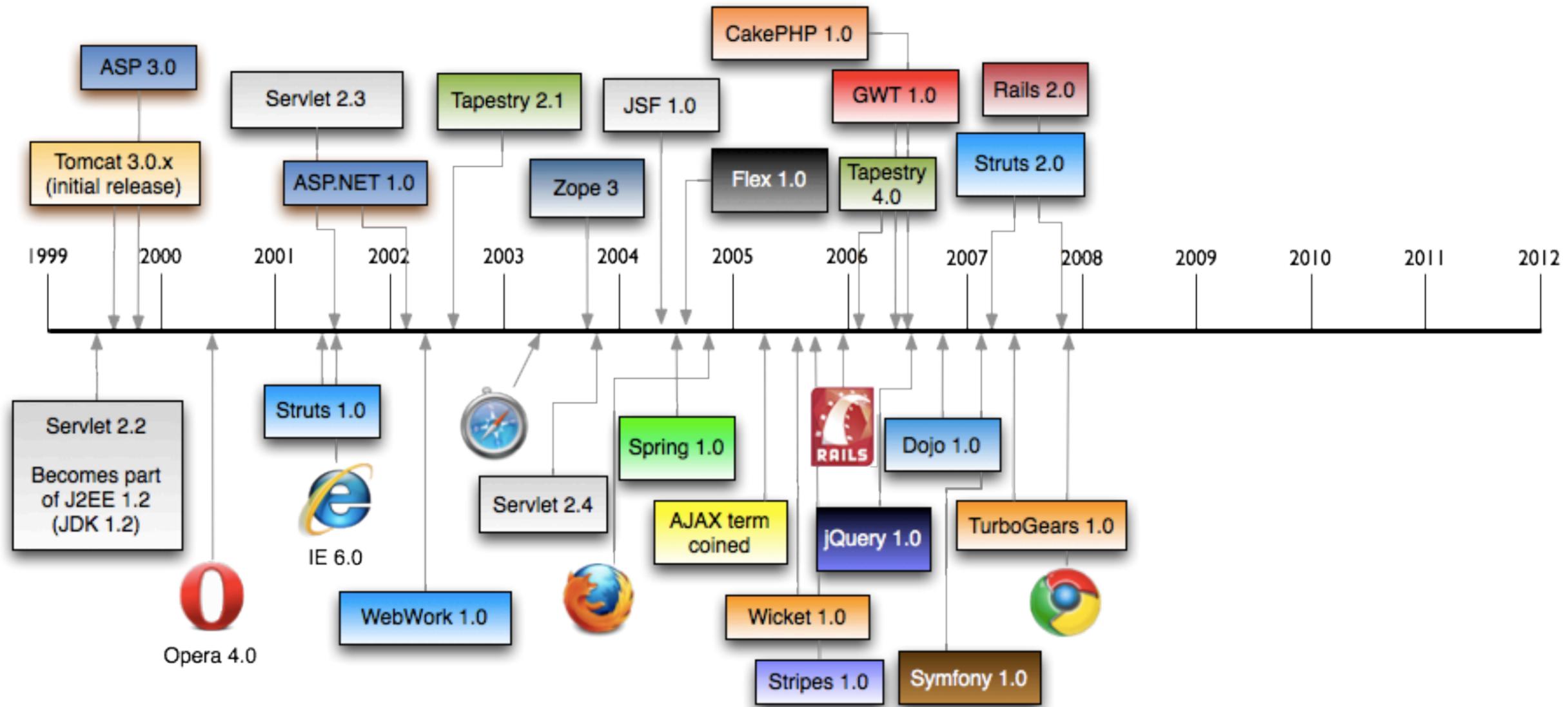
# Comparing Web Frameworks

The screenshot shows a web browser window with the address bar containing `www.theserverside.com/news/thread.tss?thread_id=29817`. The page header features the site logo "TheServerSide.COM" and navigation links for various categories like JAVA, SOA, EBIZQ, TEST/QA, .NET, AJAX, and TSSJS. Below the header is a search bar and a "SITE INDEX" link. The main content area displays the thread title "Comparing Web Frameworks" with a breadcrumb trail "Home > News > Comparing Web Frameworks". There are buttons for "SHARE" (with social media icons), "GET THREAD FEED", and "REPLY TO THIS". The post content includes the author "Dion Almaer", the date "November 05 2004 10:59 EST", and the text: "Matt Raible has a new presentation in which he compares a sprinkling of web frameworks. He discusses the technical, and political merits of Struts, Spring, Tapestry, WebWork, and JavaServer Faces. Do you agree with his conclusions?". At the bottom, there is a "Threaded Messages (96)" section.

# History of Web Frameworks



# History of Web Frameworks



# 2007

# DEVOXX

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## Raible Revisits Comparing Web Frameworks

Posted by [Bryan Clouser](#) on Nov 26, 2007

Sections [Development](#) Topics [JBoss Seam](#), [Struts](#), [JBoss](#), [Grails](#), [GWT](#), [Wicket](#), [Application Servers](#), [Flex](#), [Java Web Frameworks](#), [Flash](#), [AJAX](#), [Java](#), [Web Frameworks](#), [WOA](#), [RedHat](#), [Rich Internet Apps](#), [Groovy](#), [Web Servers](#), [Adobe](#), [Architecture](#), [JVM Languages](#), [Dynamic Languages](#), [Web Development](#)

Share [Bookmark this!](#)

This past week Matt Raible gave a [presentation](#) (PDF [1](#), [2](#)) at ApacheCon comparing Java Web Frameworks. This is a follow up to a presentation he gave a few years ago. The list of Java Web Frameworks covered in the 2 PDFs:

- [JSF](#)
- [Spring MVC](#)
- [Struts 2](#)
- [Stripes](#)
- [Tapestry](#)
- [Wicket](#)

The new talk targets a slightly different list of technologies as a result of the changing development landscape:

- [Flex](#)
- [Grails](#)
- [GWT](#)
- [Seam](#)
- [Struts 2](#)
- [Wicket](#)

### Educational Content

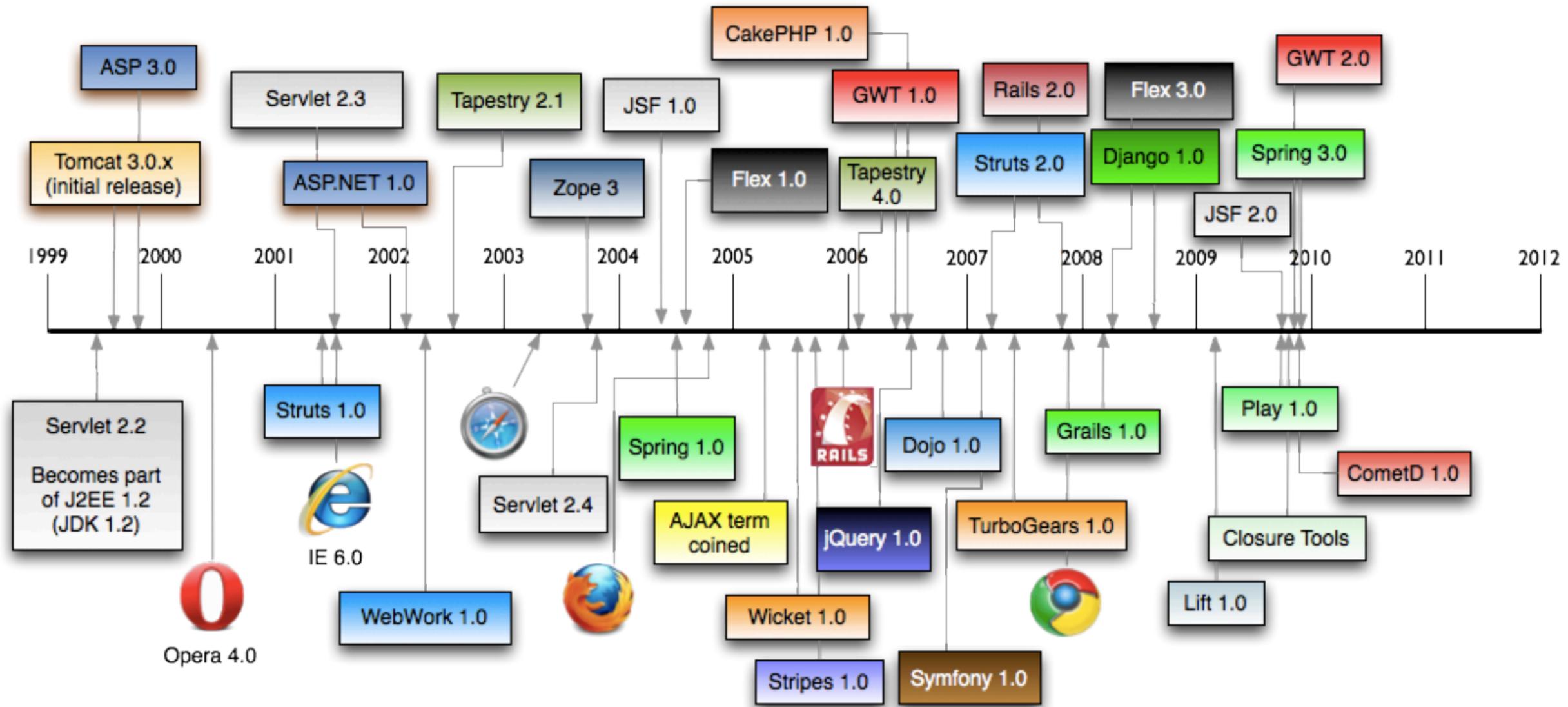
**Eval Begone!: Semi-Automated Removal of Eval from JavaScript Programs**  
Gregor Richards introduces Evalorizer, a heuristics based tool which is meant to replace JavaScript eval constructs with safer JavaScript correspondents. [Gregor Richards](#) Mar 27, 2013

**From Darwin to Design**  
Stuart Church discusses applying the theories of species evolution, especially evolutionary and behavioral ecology, to software design. [Stuart Church](#) Mar 27, 2013

**Eucalyptus FastStart**  
Cost-effective dev and test on an AWS-compatible private cloud  
[Download FastStart](#)

All Articles Presentations Interviews Books Research

# History of Web Frameworks



# Response to Matt Raible's Presentation at Devoxx 2010

Posted on Sonntag, 21st November, 2010

## "Comparing JVM Web Frameworks" – a response to Matt Raible

DECEMBER 4, 2010 BY PETER THOMAS 23 COMMENTS

Home > Technical > Critical analysis of frameworks comparison

### Critical analysis of frameworks comparison

December 5th, 2010 Nicolas Frankel

# Marc Logemann Blog

CEO of LOGENTIS GmbH on java development and surrounding topics.

MONTAG, 22. NOVEMBER 2010

## On Matt Raible's web framework comparison

TheServerSide.COM  
Your Enterprise Java Community

DESIGN/ARCHITECTURE

EJB

WEB SERVICES

WEB APPLICATIONS

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IBM WebSphere Extended Deployment Compute Grid

Home > Discussions > News > Comparing JVM Web Frameworks - a response to Matt Raible

## Discussions

News: Comparing JVM Web Frameworks - a response to Matt Raible

## Lift

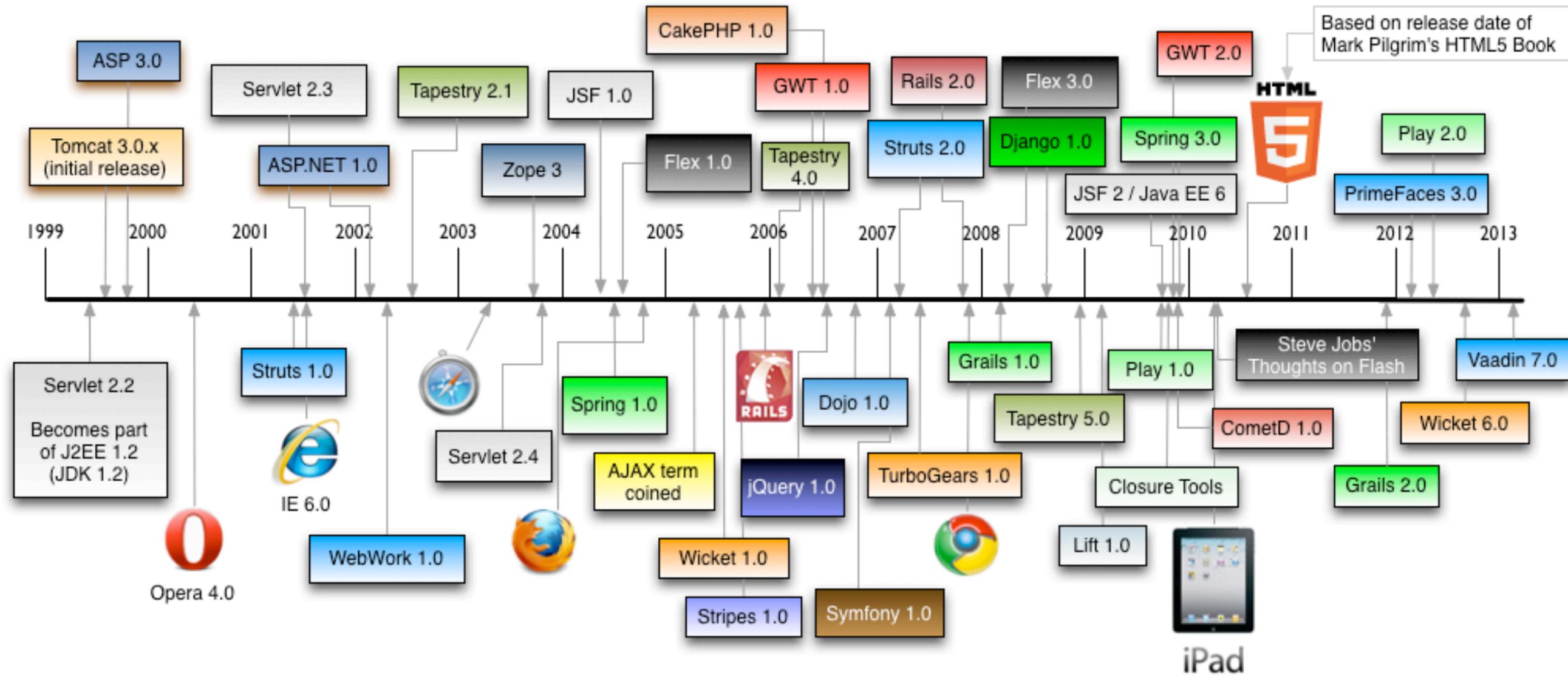
The official Lift blog

« Back to posts

## My take on Matt Raible's spreadsheet

When I first caught wind of Matt Raible's [spreadsheet](#) comparing different web frameworks, I thought it was a joke. I still do, but lots of people are taking it seriously (although, [others aren't.](#))

# Today

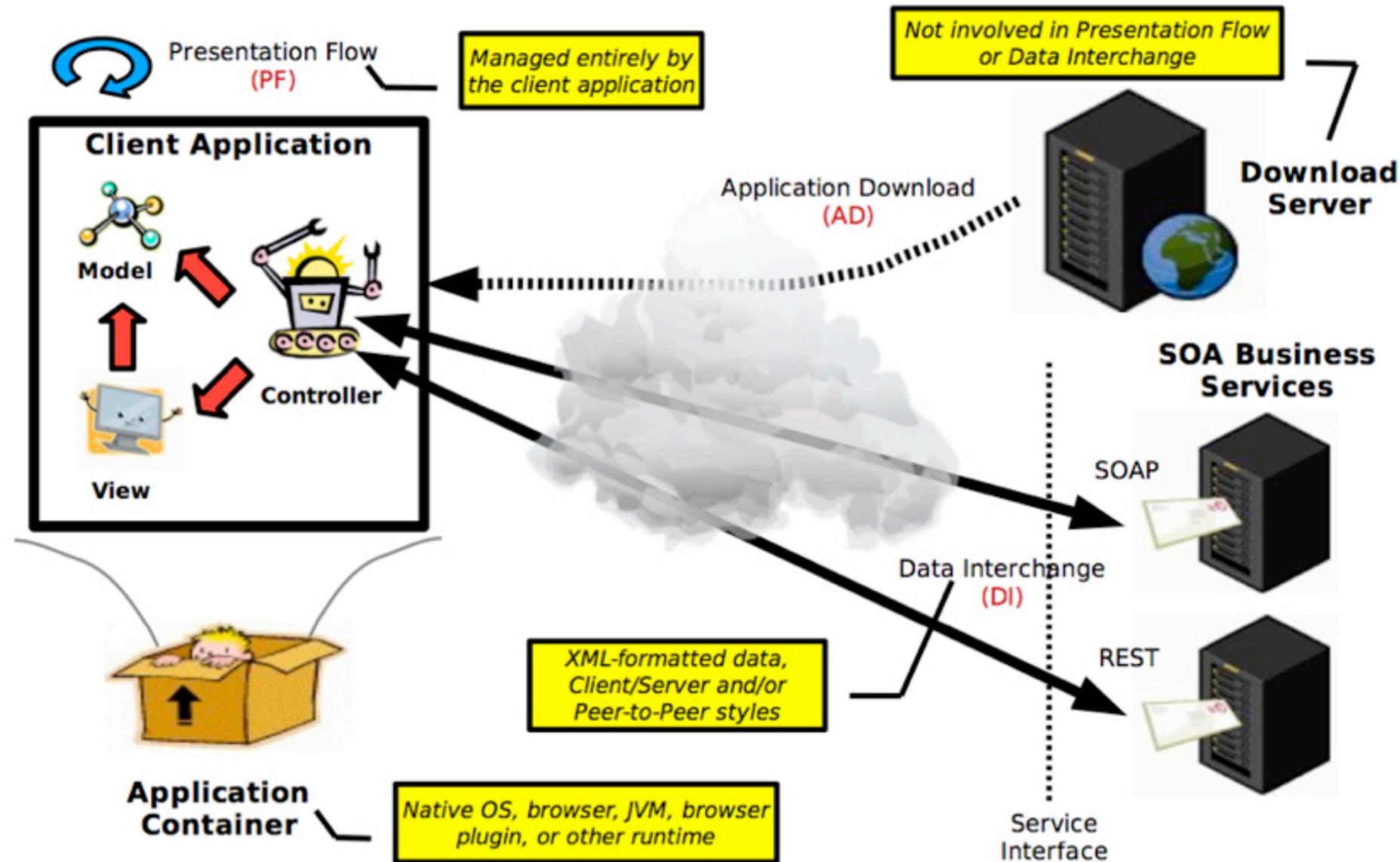


# Too many web frameworks?



# Remember SOFEA?

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



# SOFEA became a Reality



JavaScript **MVC**

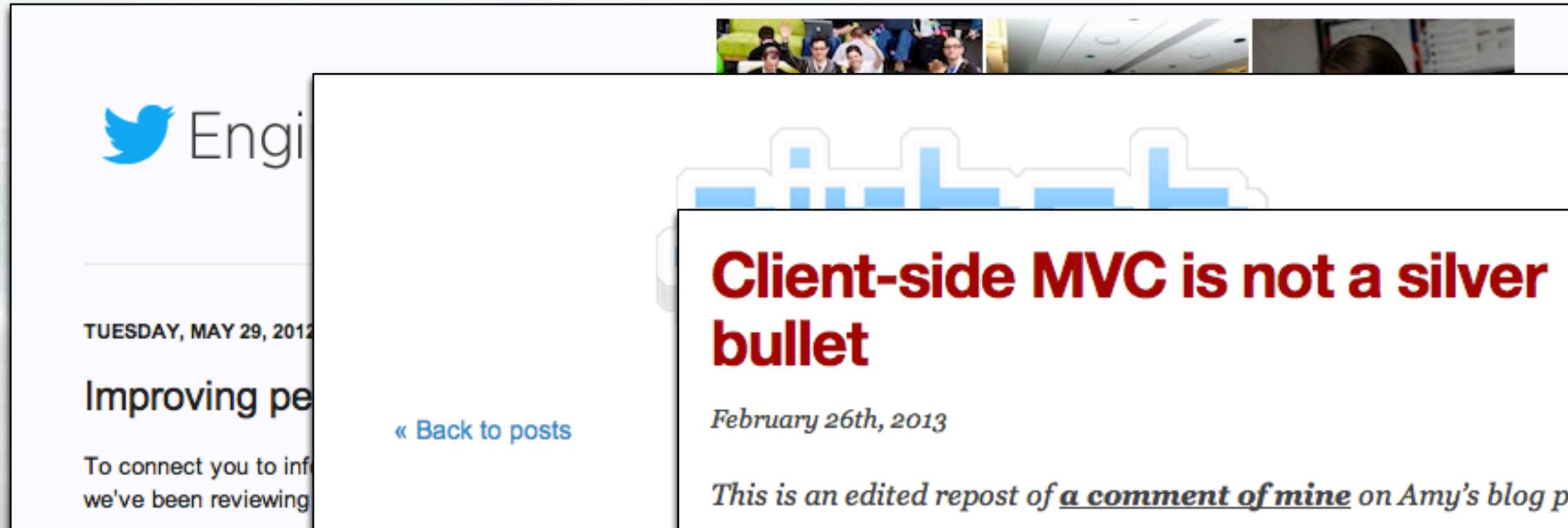


**HTML**



Sencha Ext JS

PhoneGap



Engi

TUESDAY, MAY 29, 2012

Improving pe

To connect you to inf  
we've been reviewing

« Back to posts



## Client-side MVC is not a silver bullet

February 26th, 2013

*This is an edited repost of [a comment of mine](#) on Amy's blog post about [why we shut down Charm](#).*

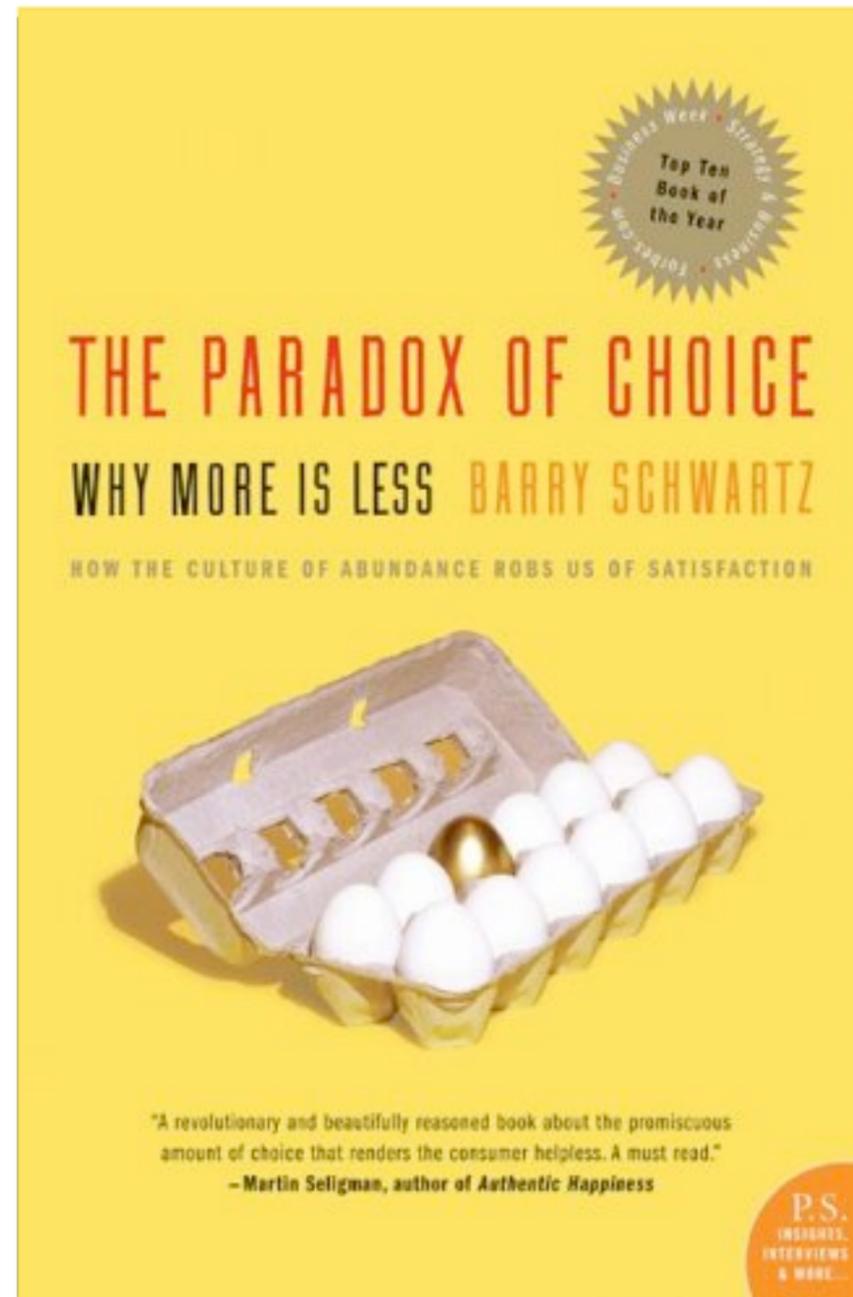
Charm, as it is, is using Backbone.js, Underscore.js and Zepto on the front-end, and Rails 2.3, Postgres, memcached, redis, resque, and for websockets Sinatra, and a few other things. The front-end is communicating with the back-end via a JSON API.

I've come to the realization that this much **client-side processing and decoupling is detrimental to both the speed of development, and application performance** (a ton of JavaScript has to be loaded and evaluated each time you fire up the app). It's better to let the server handle HTML rendering and minimize the use of JavaScript on the client.

Our First No

traditional web frameworks are still relevant

# The Paradox of Choice



# Good Decisions Involve

1. Figure out your goal or goals
2. Evaluate the importance of each goal
3. Array the options
4. Evaluate how likely each of the options is to meet your goals
5. Pick the winning option
6. Modify goals

# Maximizer vs. Satisficer

- ▶ maximizer - tries to make **best possible** choice
- ▶ satisficer - tries to find **first suitable** choice



(Photo: [Tori Cat](#) at Flickr)

# How do you choose?



# The Real Problem



# The Real Problem



# The Real Problem





# How to Constrain Choices

- ▶ **2006:** Choose based on the type of app you're developing
- ▶ **2010:** Choose based on 20 different criteria (the Matrix)
- ▶ **2013:** Narrowed it to 5
  - Community / Support
  - HTML5
  - REST
  - Mobile
  - Performance
  - Page Speed

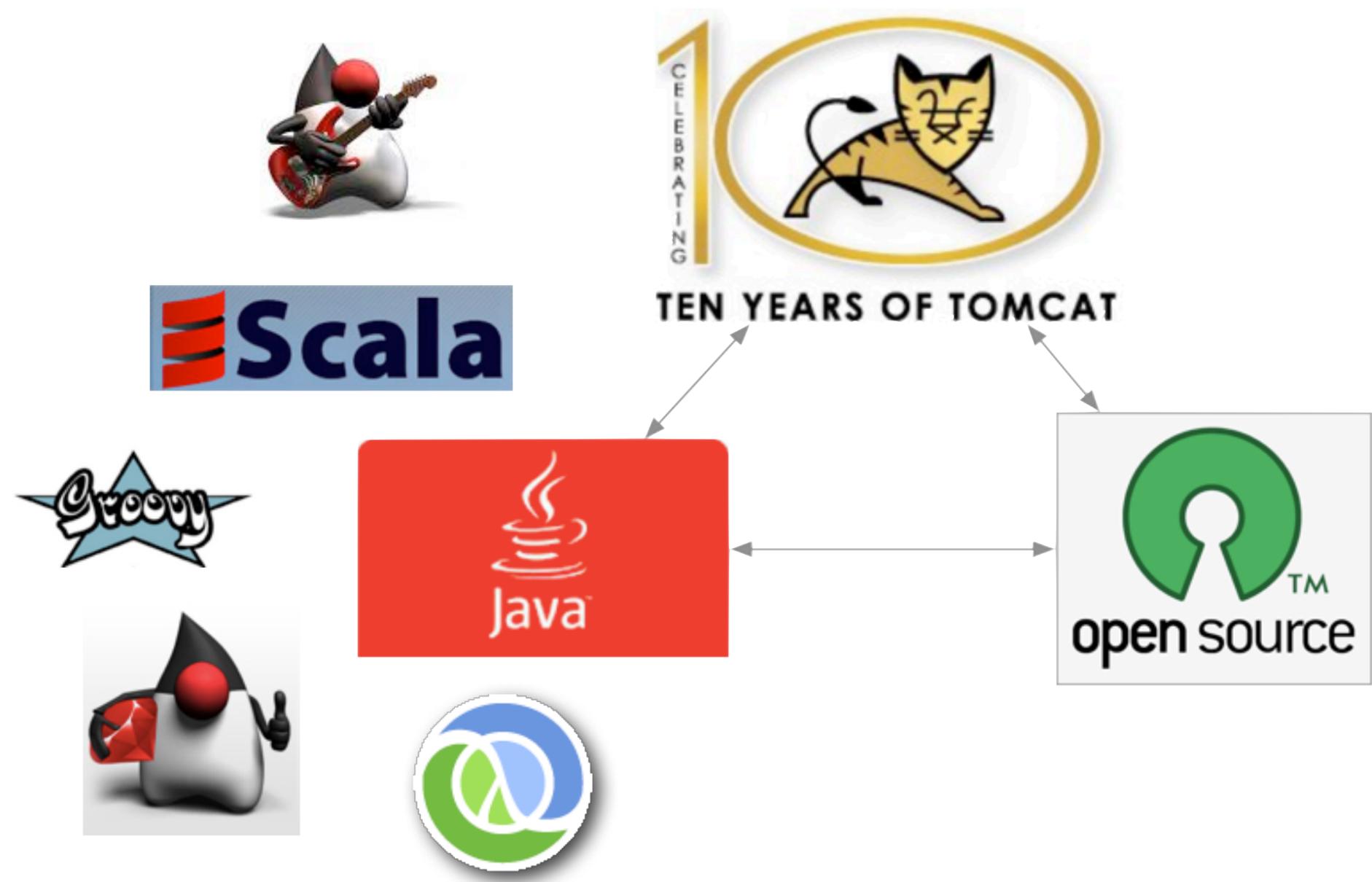


# Predetermined Constraints

- ▶ Language
- ▶ Platform
- ▶ Application Type



# Choose the JVM



# Get Fast Hardware



LookupActivity.java - [Wiktionary] - Wiktionary - [~/IdeaProjects/Wiktionary] - IntelliJ IDEA (Leda) IU-123.23

```
    * Before jumping into background thread, start sliding in the
    * {@link ProgressBar}. We'll only show it once the animation finishes.
    */
    @Override
    protected void onPreExecute() {
        mTitleBar.startAnimation(mSlideIn);
    }

    /**
     * Perform the background query using {@link ExtendedWikiHelper}, which
     * may return an error message as the result.
     */
```

Debugger: Wiktionary

Frames: " <1 > main "@830,013,381...  
onPreExecute():271, LookupActivity\$LookupTa  
executeOnExecutor():586, AsyncTask (android.os)  
execute():534, AsyncTask (android.os)  
startNavigating():157, LookupActivity (com.example.wiktionary)  
onNewIntent():237, LookupActivity (com.example.wiktionary)

Variables:

- this = {com.example.android.wiktionary.LookupActivity}
- mTitleBar = {android.widget.LinearLayout}
- mSlideIn = {android.view.animation.Animation}

Watches:

- mTitle: TextView
- mTitleBar: View
- moveTaskToBack: boolean
- mEntryTitle: String

5: Debug 6: TODO Android Documentation Event Log

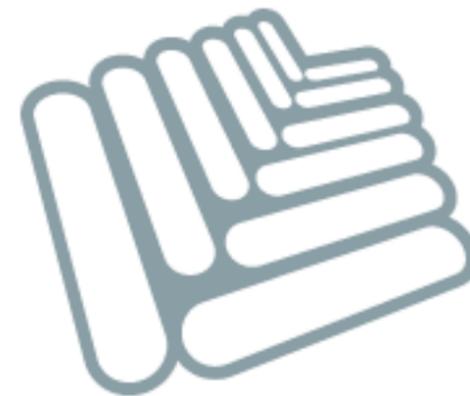
All files are up-to-date (5 minutes ago) 1:3 UTF-8 601M of 711M

# Goals

- ▶ Pure Web Frameworks
- ▶ Full Stack Frameworks
- ▶ SOFEA Frameworks
  - API Frameworks
  - JavaScript MVC Frameworks



# Full Stack Frameworks



# API Frameworks



Apache CXF

VERT.X



# JavaScript MVC Frameworks



Spine



# JavaScript MVC Frameworks

The screenshot shows a web browser window with the following content:

- Browser Tab:** cb The Top 10 Javascript MVC x
- Address Bar:** codebrief.com/2012/01/the-top-10-javascript-mvc-frameworks-reviewed/
- Page Header:** CodeBrief (left), Archives Projects RSS (right)
- Main Content:**
  - ## The Top 10 Javascript MVC Frameworks Reviewed
  - Jan 13th, 2012
  - UPDATE 1/14/2012:** *Added Batman.js and Angular.js due to popular demand and because they looked impressive.*
  - Over the last several months I have been in a constant search for the perfect javascript MVC framework. Driven by a dire need for the right level of abstraction and features, I have tried out - some more cursorily than others - every framework I could get my hands on. Here lies a brief synopsis of each framework. Lastly, I share the framework which I ultimately decided on.
  - Specifically, the following four features are very important to me:

    - **UI Bindings** - I'm not just talking about templates, I'm talking about a declarative approach to automatically updating the view layer when the underlying model changes. Once you have used a framework (such as Flex) that supports UI bindings, you can never go back.
    - **Composed Views** - Like all software developers, I enjoy creating modular reusable code.
- Right Sidebar:**
  - ### About



This is the personal blog of Gordon L. Hempton: a hacker and self-proclaimed designer located in Seattle, WA. Co-Founder of [GroupTalent](#).
  - ### Related Posts

    - [Ember.js Analytics Integration](#)
    - [Hacking the CoffeeScript Redux Compiler](#)
    - [Anatomy of an Ember.js App Part I Redux: Routing and Outlets](#)
    - [The Twelve Hacker Archetypes](#)
    - [Make the Most of Your Routes](#)

- ▶ Apache: Wicket, Struts, Sling, Tapestry, Click
- ▶ GWT: SmartGWT, GXT, Vaadin, Errai
- ▶ JSF: Mojarra (RI), MyFaces, Tomahawk, IceFaces, RichFaces, PrimeFaces
- ▶ Spring MVC, Stripes, RIFE, ZK

[http://en.wikipedia.org/wiki/Comparison\\_of\\_web\\_application\\_frameworks#Java](http://en.wikipedia.org/wiki/Comparison_of_web_application_frameworks#Java)

# Frameworks I've Used

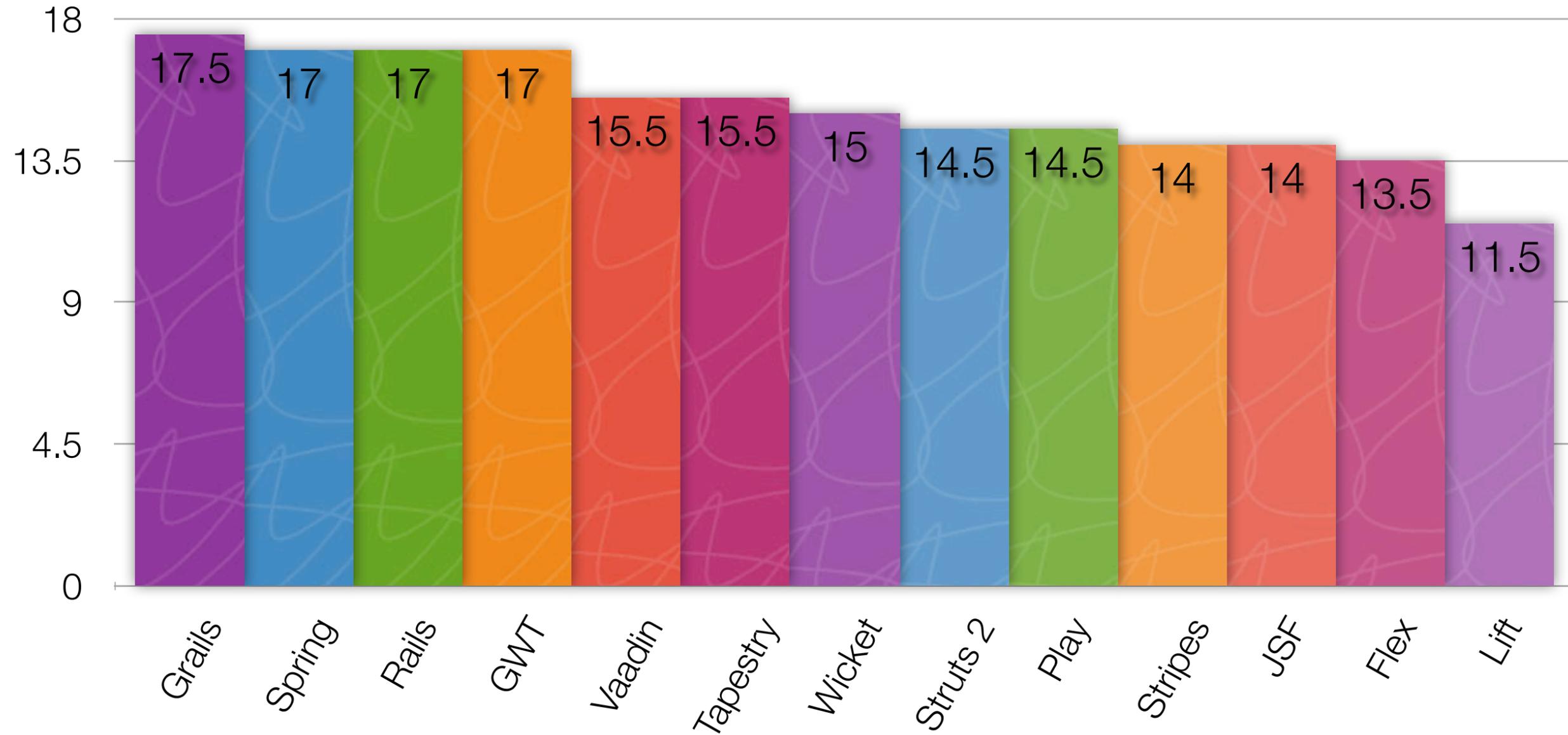
- ▶ Apache: **Wicket**, **Struts**, Sling, **Tapestry**, Click
- ▶ GWT: SmartGWT, **GXT**, Vaadin, Errai
- ▶ JSF: **Mojarra**, **MyFaces**, **Tomahawk**, IceFaces, RichFaces, **PrimeFaces**
- ▶ **Spring MVC**, **Stripes**, RIFE, ZK

# Comparison Matrix

Criteria	Struts 2	Spring MVC	Wicket	JSF 2	Tapestry	Stripes	GWT	Grails	Rails	Flex	Vaadin	Lift	Play
Developer Productivity	0.50	0.50	0.50	0.50	1.00	0.50	1.00	1.00	1.00	0.00	1.00	0.50	1.00
Developer Perception	0.50	1.00	1.00	0.50	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Learning Curve	1.00	1.00	0.50	0.50	0.50	1.00	1.00	1.00	1.00	1.00	1.00	0.50	1.00
Project Health	0.50	1.00	1.00	1.00	1.00	0.50	1.00	1.00	1.00	0.50	1.00	1.00	1.00
Developer Availability	0.50	1.00	0.50	1.00	1.00	0.50	1.00	0.50	1.00	1.00	0.50	0.00	0.50
Job Trends	1.00	1.00	0.50	1.00	0.50	0.00	1.00	0.50	1.00	1.00	0.00	0.00	0.50
Templating	1.00	1.00	1.00	0.50	1.00	1.00	0.50	1.00	1.00	0.50	0.50	0.50	0.50
Components	0.00	0.00	1.00	1.00	1.00	0.00	0.50	0.50	0.50	1.00	1.00	0.00	0.00
Ajax	0.50	1.00	0.50	0.50	0.50	0.50	1.00	0.50	0.50	0.50	1.00	1.00	0.50
Plugins or Add-Ons	0.50	0.00	1.00	1.00	0.50	0.00	1.00	1.00	1.00	1.00	1.00	0.50	1.00
Scalability	1.00	1.00	0.50	0.50	0.50	1.00	1.00	0.50	0.50	0.50	0.50	1.00	1.00
Testing	1.00	1.00	0.50	0.50	1.00	1.00	0.50	1.00	1.00	0.00	0.50	0.50	1.00
i18n and l10n	1.00	1.00	1.00	0.50	1.00	1.00	1.00	1.00	0.50	0.50	1.00	1.00	1.00
Validation	1.00	1.00	1.00	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.50	0.50
Multi-language Support (Groovy / Scala)	0.50	0.50	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00
Quality of Documentation/Tutorials	0.50	1.00	0.50	0.50	0.50	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Books Published	1.00	1.00	0.50	1.00	0.50	0.50	1.00	1.00	1.00	1.00	0.50	0.50	0.00
REST Support (client and server)	0.50	1.00	0.50	0.00	0.50	0.50	0.50	1.00	1.00	0.50	0.50	0.50	0.50
Mobile / iPhone Support	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.50	1.00	1.00	1.00
Degree of Risk	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.50	0.50	0.50
<b>Totals</b>	14.5	17	15	14	15.5	14	17	17.5	17	13.5	15.5	11.5	14.5

<http://bit.ly/jvm-frameworks-matrix>

# Matrix Results



# Matrix Results

- ▶ Grails (17.5)
- ▶ GWT (17)
- ▶ Ruby on Rails (17)
- ▶ Spring MVC (17)
- ▶ Vaadin and Tapestry (15.5)
- ▶ Wicket (15)



# Weighted Matrix

Weight	Criteria	Struts 2	Spring MVC	Wicket	JSF	Tapestry	Stripes	GWT	Grails	Rails	Flex	Vaadin	Lift	Play
10	Developer Productivity	5.00	5.00	5.00	5.00	10.00	5.00	10.00	10.00	10.00	0.00	10.00	5.00	10.00
0	Developer Perception	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	Learning Curve	5.00	5.00	2.50	2.50	2.50	5.00	5.00	5.00	5.00	5.00	5.00	2.50	5.00
5	Project Health	2.50	5.00	5.00	5.00	5.00	2.50	5.00	5.00	5.00	2.50	5.00	5.00	5.00
5	Developer Availability	2.50	5.00	2.50	5.00	5.00	2.50	5.00	2.50	5.00	5.00	2.50	0.00	2.50
0	Job Trends	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	Templating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0	Components	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	Ajax	2.50	5.00	2.50	2.50	2.50	2.50	5.00	2.50	2.50	2.50	5.00	5.00	2.50
5	Plugins or Add-Ons	2.50	0.00	5.00	5.00	2.50	0.00	5.00	5.00	5.00	5.00	5.00	2.50	5.00
10	Scalability	10.00	10.00	5.00	5.00	5.00	10.00	10.00	5.00	5.00	5.00	5.00	10.00	10.00
10	Testing	10.00	10.00	5.00	5.00	10.00	10.00	5.00	10.00	10.00	0.00	5.00	5.00	10.00
0	i18n and l10n	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	Validation	5.00	5.00	5.00	2.50	5.00	5.00	5.00	5.00	5.00	5.00	5.00	2.50	2.50
10	Multi-language Support (Groovy / Scala)	5.00	5.00	10.00	10.00	10.00	10.00	0.00	10.00	0.00	0.00	10.00	0.00	10.00
10	Quality of Documentation/Tutorials	5.00	10.00	5.00	5.00	5.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
0	Books Published	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	REST Support (client and server)	5.00	10.00	5.00	0.00	5.00	5.00	5.00	10.00	10.00	5.00	5.00	5.00	5.00
10	Mobile / iPhone Support	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00	5.00	10.00	10.00	10.00
0	Degree of Risk	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100	<b>Weighted Totals</b>	70	85	67.5	62.5	77.5	77.5	80	90	82.5	50	82.5	62.5	87.5

# Weighted Results

- ▶ Grails (90)
- ▶ Play (87.5)
- ▶ Spring MVC (85)
- ▶ Ruby on Rails (82.5)
- ▶ Vaadin (82.5)
- ▶ GWT (80)



# David Pollack's Lift Ratings



- ▶ Developer Productivity: Lift gets a 11, Rails gets a 5, most Java-based frameworks get a 1 or less.
- ▶ Developer Perception: Every web framework gets a 1.
- ▶ Learning Curve: Lift gets a 2.
- ▶ Job Trends, yep, it's zero.

\* Matt's scale is 0-1 and my ratings are on Matt's scale, except mine goes to 11.

<http://lift.la/my-take-on-matt-raibles-spreadsheet>

# Peter Thomas's Perfbench

- ▶ Seam / JSF vs. Wicket Performance Comparison
  - January 2009: Seam 2.1.1 and Wicket 1.3.5
  - Average page response time in milliseconds

action	Seam / JSF					Wicket				
	users-1	users-5	users-10	users-15	users-20	users-1	users-5	users-10	users-15	users-20
get login	569	521	406	385	747	154	40	37	45	63
post login	392	626	979	973	1189	303	166	191	268	296
ajax post search	35	117	158	288	336	15	40	95	152	224
get view hotel	19	106	154	250	294	8	43	49	88	82
post book hotel	28	71	118	181	207	28	43	82	77	96
ajax post cc number	23	59	84	148	152	4	11	19	28	23
ajax post cc name	18	61	88	132	119	3	3	10	22	18
post booking details	16	52	111	149	105	9	20	37	53	42
post confirm booking	33	126	273	488	756	29	159	317	471	808
get logout	15	24	292	107	180	8	58	71	44	46

# Peter Thomas's Perfbench

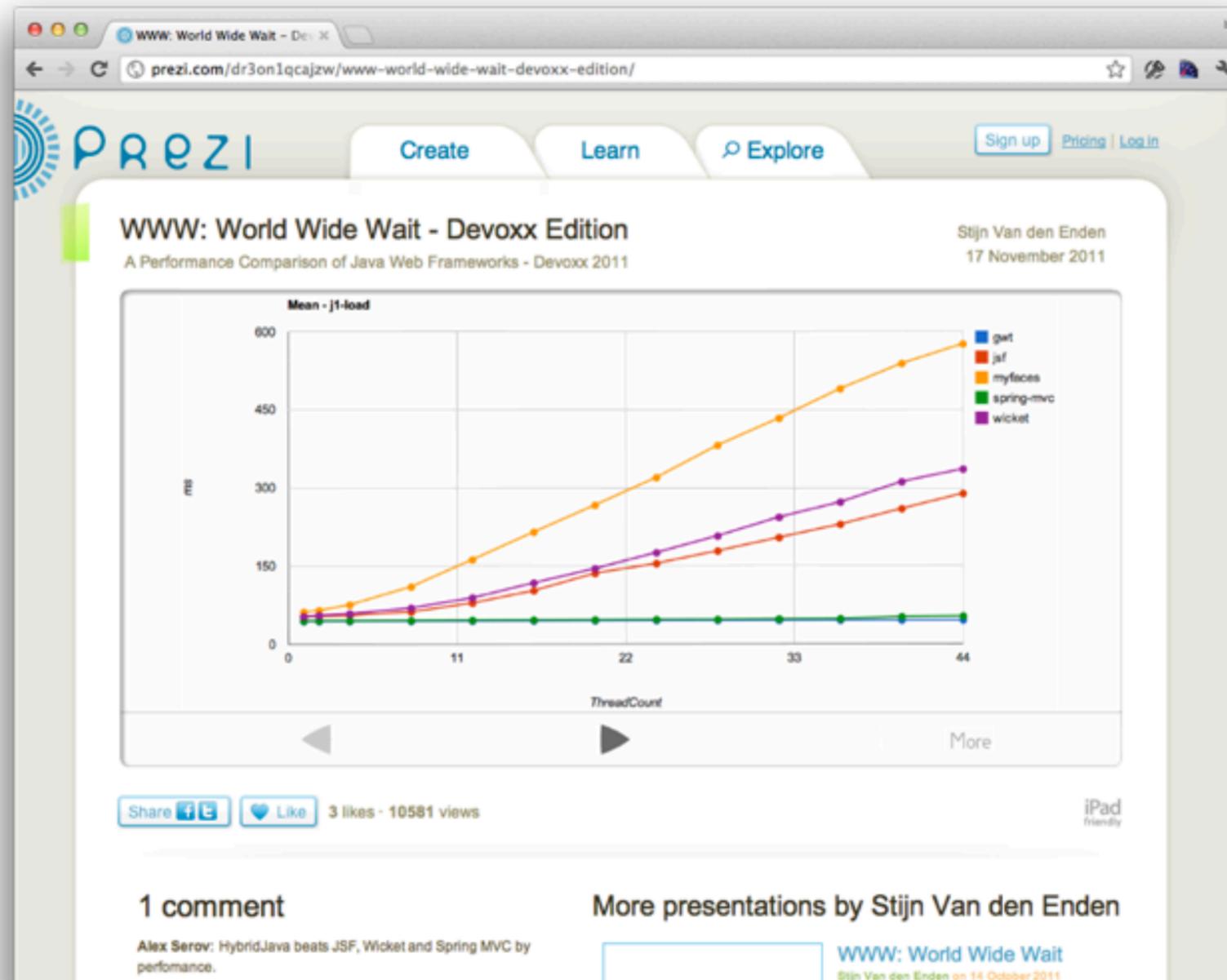
- ▶ On the Seam / JSF side, the 20 sessions each take up about 800 KB adding up to around 16 MB total. On the Wicket side the 20 sessions add up to around 1.5 MB.

	Seam / JSF	Wicket
Heap Size (bytes)	23,947,512	9,496,312
Classes	6,344	4,489
Objects	585,123	179,028
Class Loaders	370	234

- ▶ + Lots of banter between Peter and Seam developers @ <http://bit.ly/3X50Gc>

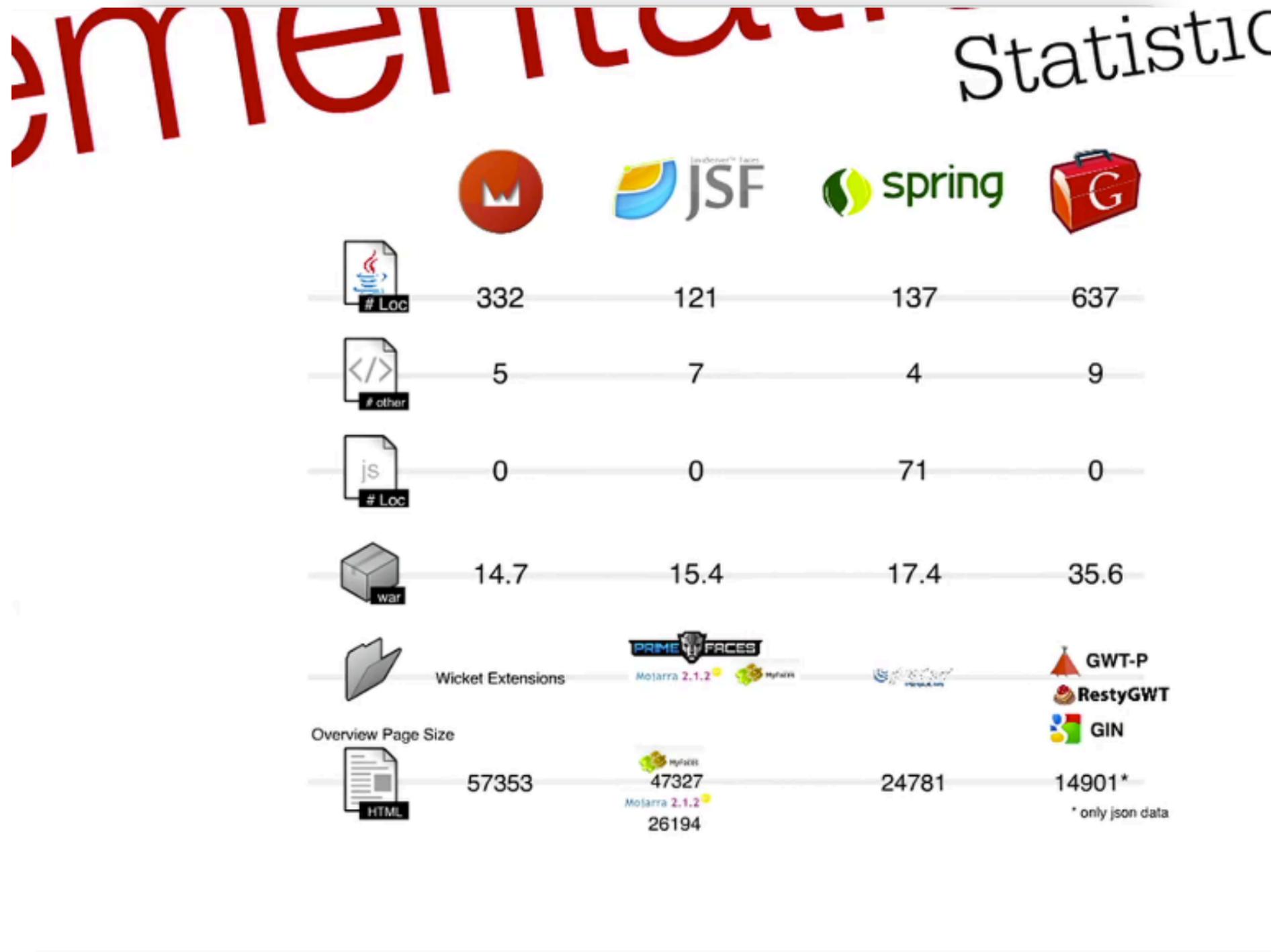
- ▶ Added Tapestry 5 and Grails in September 2009:
  - Grails was far more productive than Tapestry 5.
  - Grails still has some ways to go in terms of performance.
  - Overall, Wicket is fastest, with Tapestry coming a close second.
  - Wicket takes up the least amount of heap.
  - Session usage of the Seam + JSF combination is significantly higher compared to the rest.

# World Wide Wait - Devoxx



<http://www.parleys.com/d/2942>

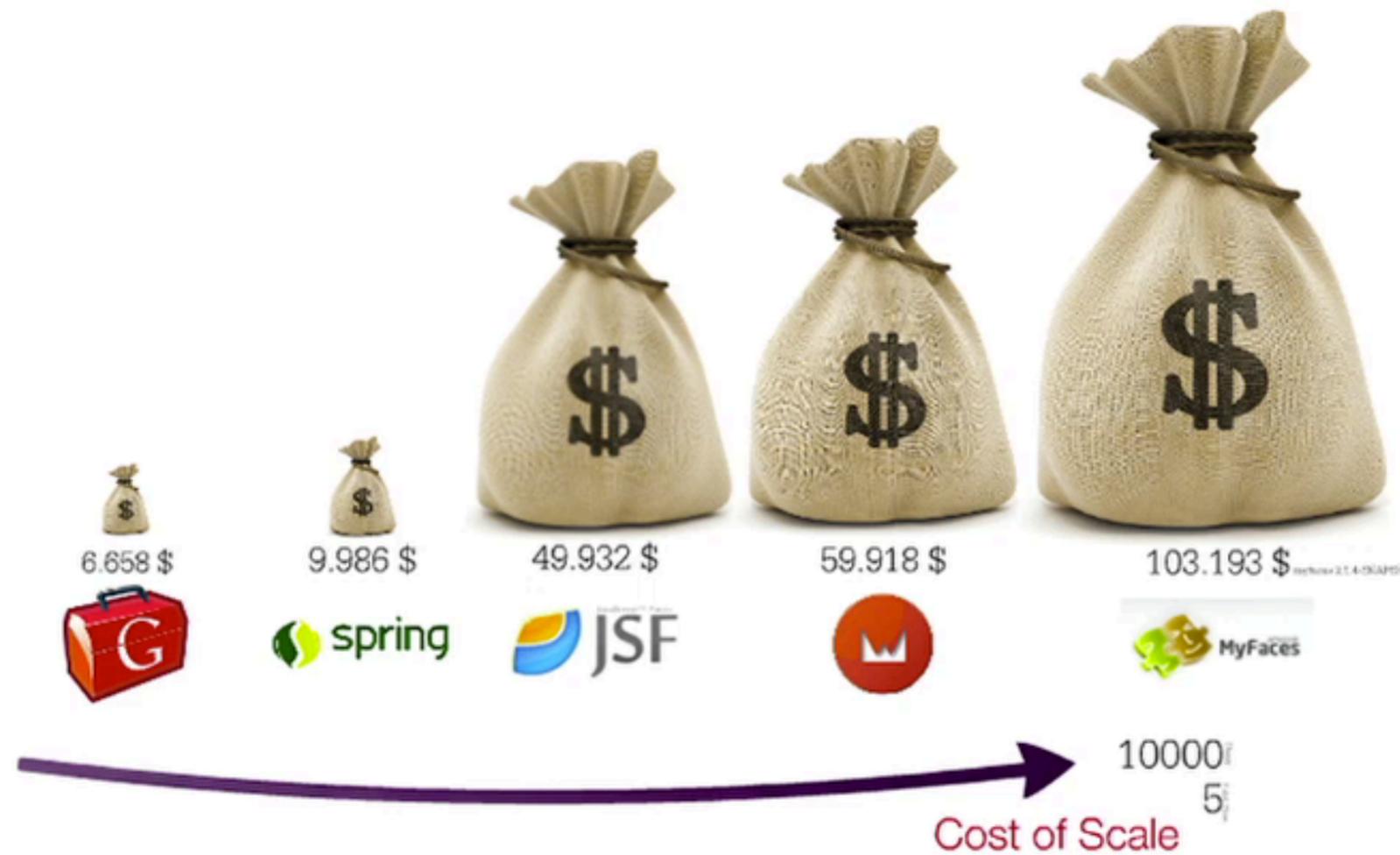
# World Wide Wait - Devovxx



> 16 GB of data

>700 hours of test runs

# World Wide Wait - Devovxx



# InfoQ's Top 20

Total number of participants: 1109

Option	Adoption Ready	Importance	Votes	Details
Spring MVC	84%	81%	607	Heatmap 
Play	71%	78%	582	Heatmap 
Grails	78%	75%	553	Heatmap 
JSF	74%	63%	434	Heatmap 
Struts	80%	60%	413	Heatmap 
Wicket	73%	70%	322	Heatmap 
Lift	63%	64%	294	Heatmap 
Tapestry	74%	69%	263	Heatmap 
Seam	68%	64%	257	Heatmap 
JRoR	66%	66%	216	Heatmap 
Vert.x	51%	68%	214	Heatmap 
Netty	70%	75%	214	Heatmap 
Sitemesh	72%	65%	196	Heatmap 
Scalatra	58%	63%	179	Heatmap 
Stripes	62%	61%	142	Heatmap 
Compojure	55%	57%	134	Heatmap 
VRaptor	62%	69%	124	Heatmap 
Conjure	51%	52%	123	Heatmap 
Noir	54%	60%	119	Heatmap 
Cascade	55%	47%	114	Heatmap 
Spark	48%	54%	86	Heatmap 

# devrates.com - by rating

The screenshot shows the devrates.com website with a search filter for "web framework". The page displays a grid of project cards for PrimeFaces, Grails, Tapestry, Vaadin, Wicket, ExtJS, and Django. Each card includes the project logo, a brief description, tags, and a statistics section with an overall rating and user statistics.

Project	Overall Rating	Used by	Rated by	Last Release
PrimeFaces	9.4	57 users	25 users	3.5
Grails	9.4	79 users	37 users	2.2.0
Tapestry	8.7	25 users	15 users	5.3.6
Vaadin	8.6	36 users	18 users	7.0.0
Wicket	-	-	-	-
ExtJS	-	-	-	-
Django	-	-	-	-
Play	-	-	-	-

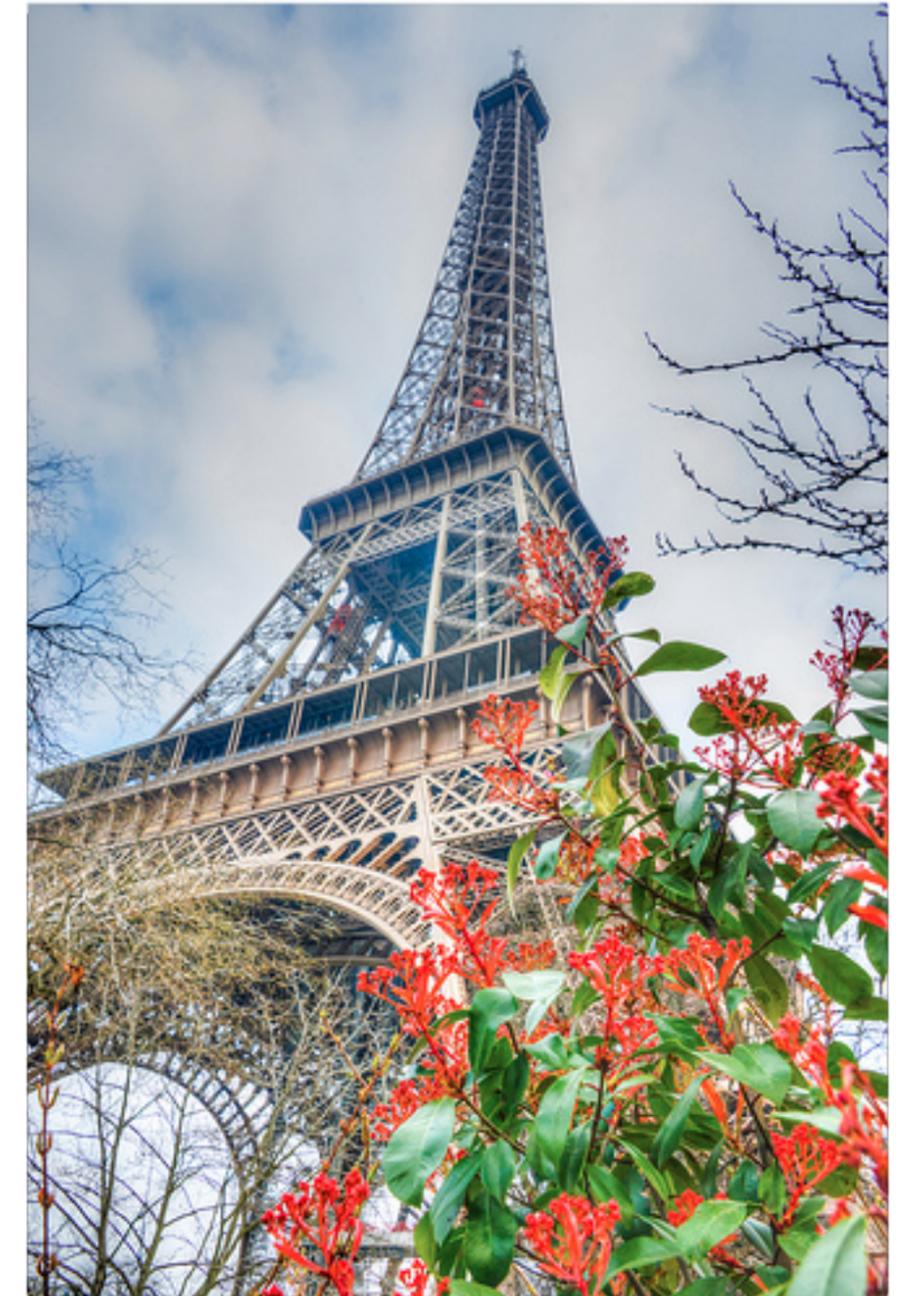
# devrates.com - popular

The screenshot shows the DevRates website interface. The browser address bar displays the URL: `devrates.com/project/list/popular?query=%5Bweb+framework%5D`. The site header includes navigation links for Stats, Projects, Users, and Blog, along with a search bar containing "[web framework]". Below the header, there are tabs for "name", "rating", "popular", and "recent", with "popular" selected. The main content area displays a grid of project cards for various web frameworks:

- Grails**: Overall rating 9.4. Used by 79 users, rated by 37 users. Last release 2.2.0 (3 months ago). Tags: web framework, rad, java, groovy, mvc.
- GWT**: Overall rating 7.2. Used by 65 users, rated by 20 users. Last release 2.5.0 (4 months ago). Tags: web framework, java, ajax.
- PrimeFaces**: Overall rating 9.4. Used by 57 users, rated by 25 users. Last release 3.5 (1 month ago). Tags: web framework, jsf, java, component.
- Play**: Overall rating 8.4. Used by 49 users, rated by 22 users. Last release 2.1.0 (1 month ago). Tags: web framework, java, scala, mvc.
- Struts**: (Card partially visible at the bottom left).
- Wicket**: (Card partially visible at the bottom middle).
- Vaadin**: (Card partially visible at the bottom right).
- Rails**: (Card partially visible at the bottom middle).

# Top JVM Frameworks

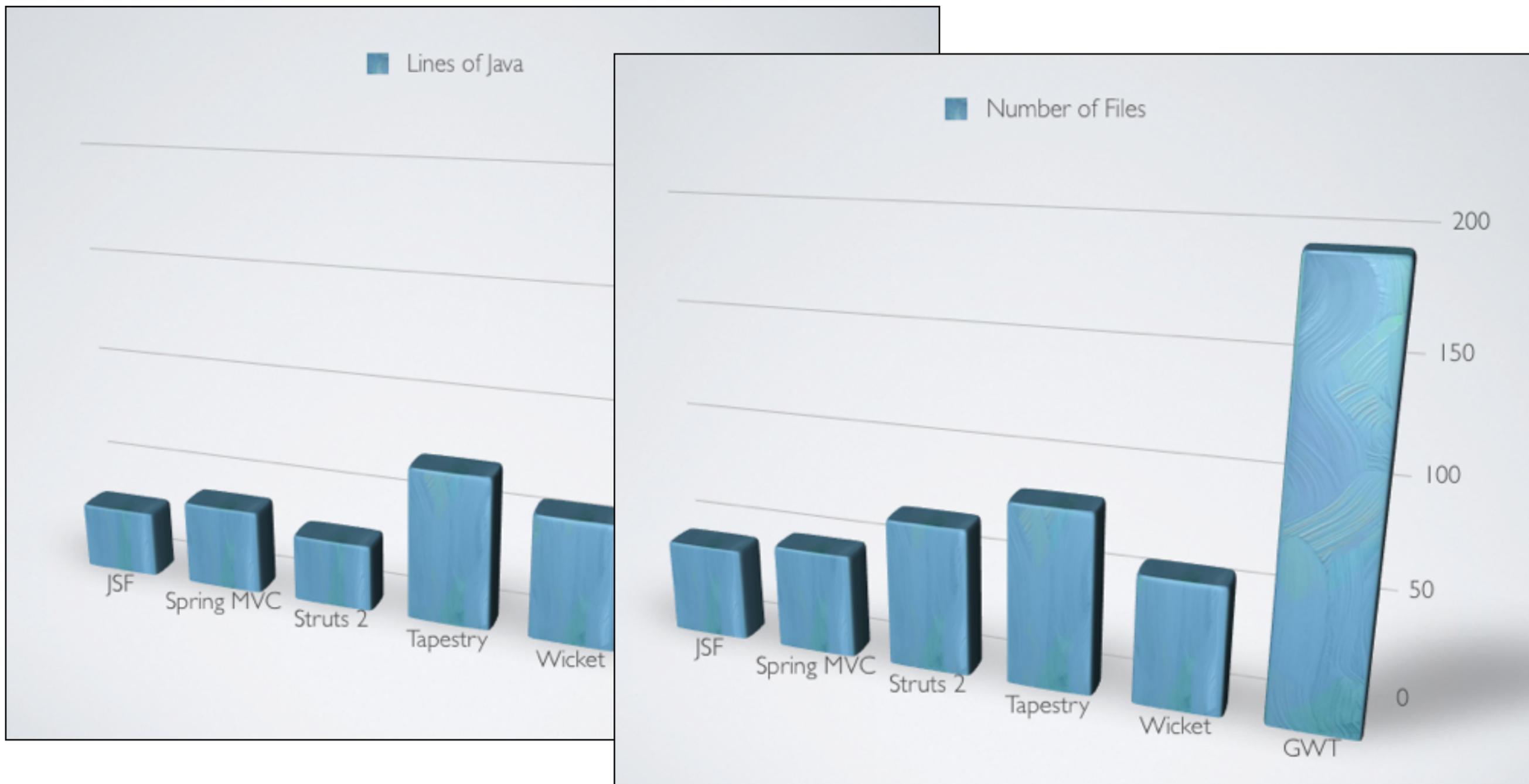
- ▶ Raible Matrix: Grails, GWT, Rails, Spring MVC
  - Weighted: Grails, Play, Spring MVC, Rails, Vaadin
- ▶ Peter Thomas: Wicket
- ▶ InfoQ: Spring MVC, Play, Grails, JSF, Struts
- ▶ devrates.com:
  - PrimeFaces, Grails, Tapestry, Vaadin, Wicket



- ▶ Full Stack: Choose by language (JRuby, Groovy, Java or Scala)
- ▶ Pure Web Framework: Spring MVC, Struts 2, JSF w/ PrimeFaces, Tapestry, Wicket or Vaadin
- ▶ JavaScript MVC: Ember, Angular JS, Backbone
  - API Framework: Jackson + ?



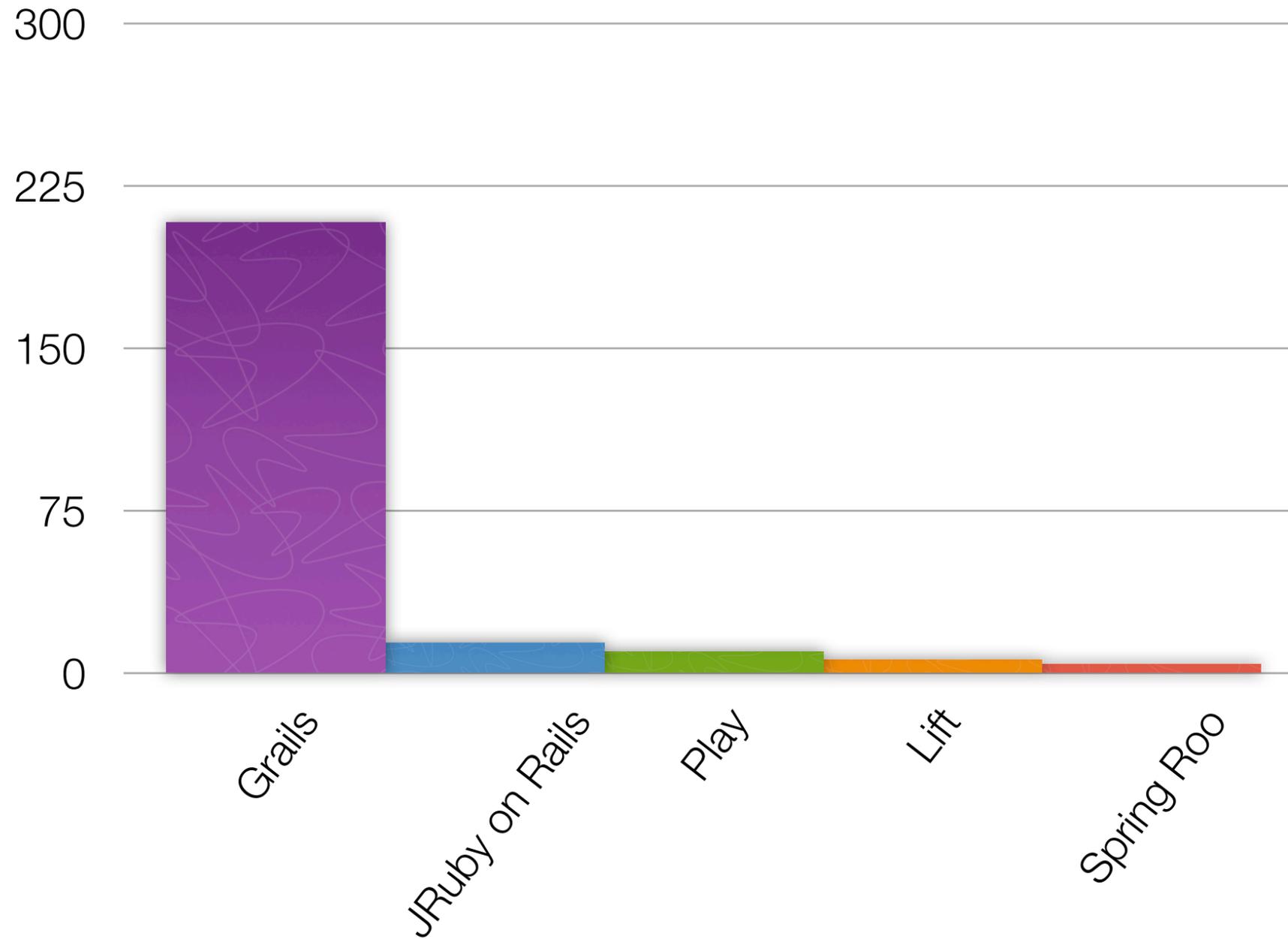
# The Problem with GWT



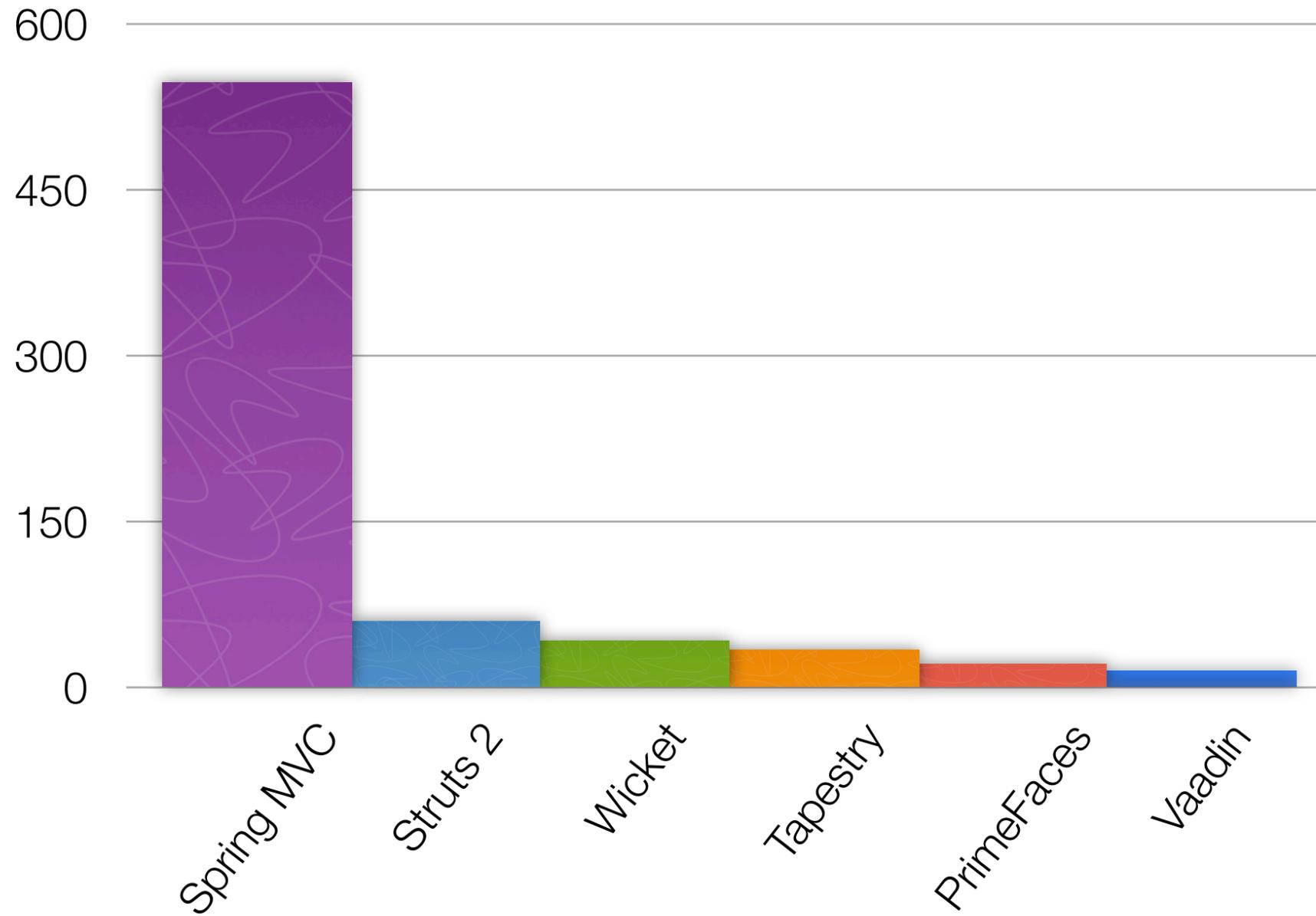
# Comparison Statistics

- ▶ Elimination Criteria
  - At least 1 release in 2012
  - At least 1 book on Amazon
  - At least 10 jobs on dice.com
  - At least 250 questions on Stack Overflow
- ▶ Remove Seam (development halted)

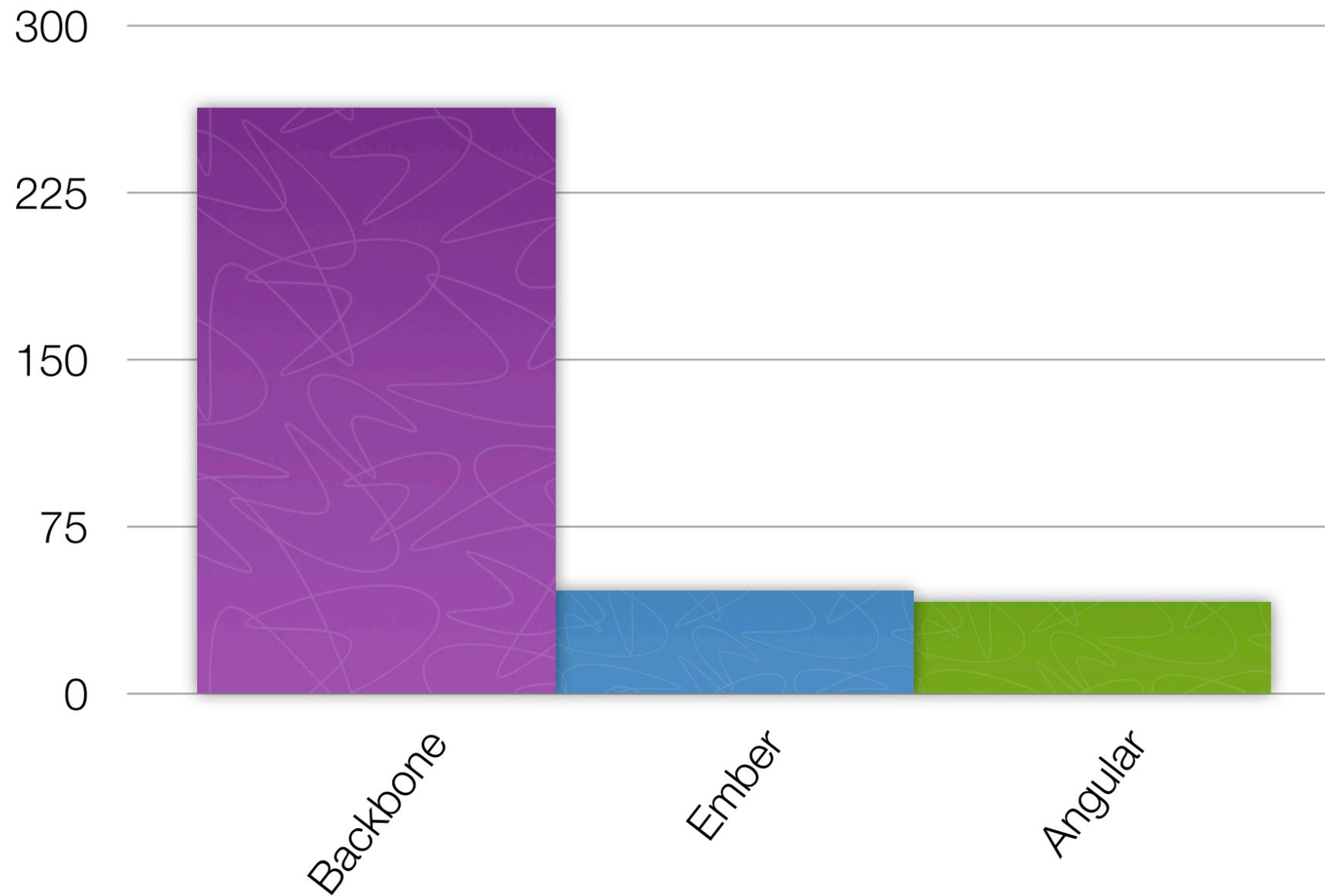
## Full Stack Frameworks, March 2013



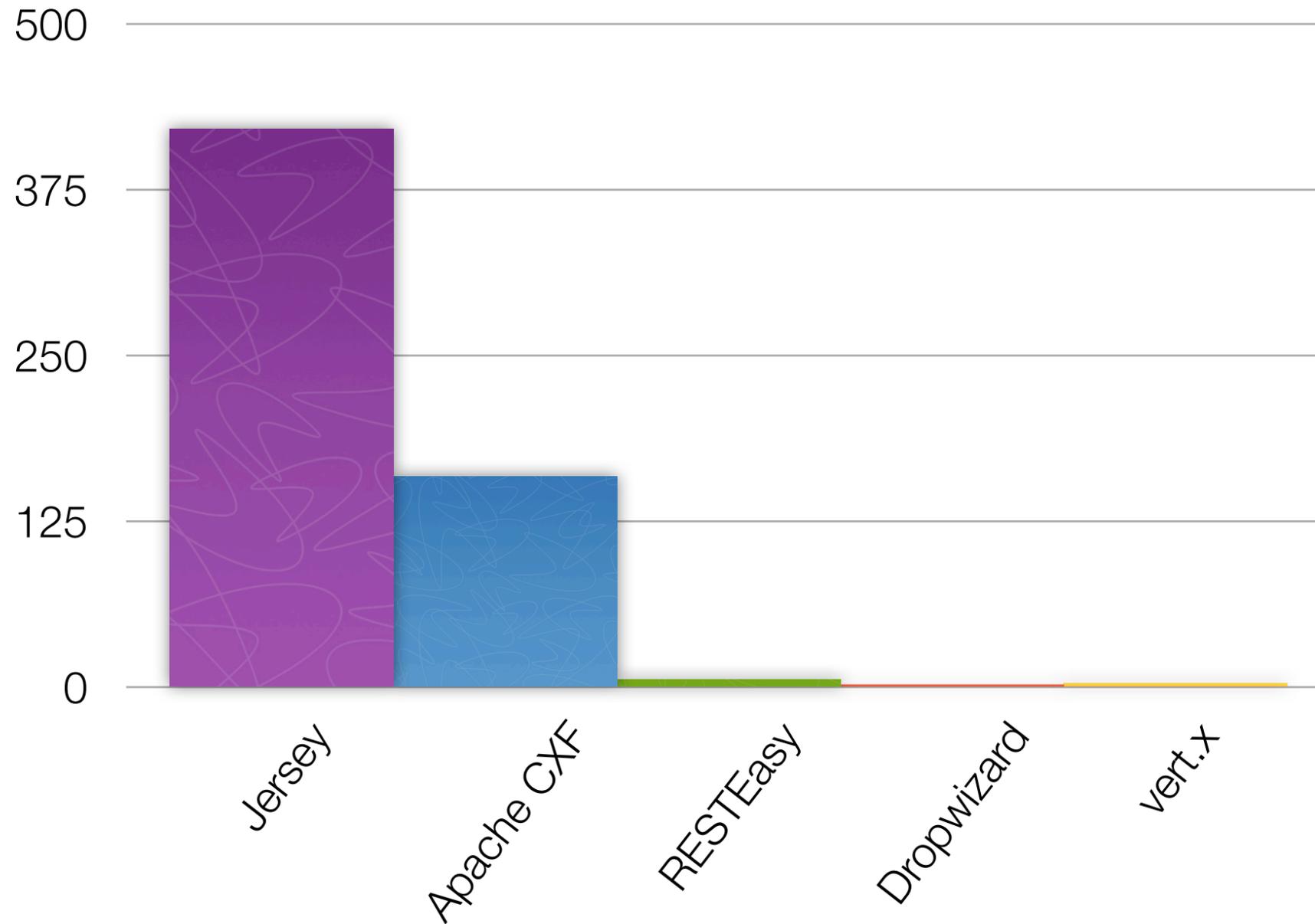
## Pure Web Frameworks, March 2013



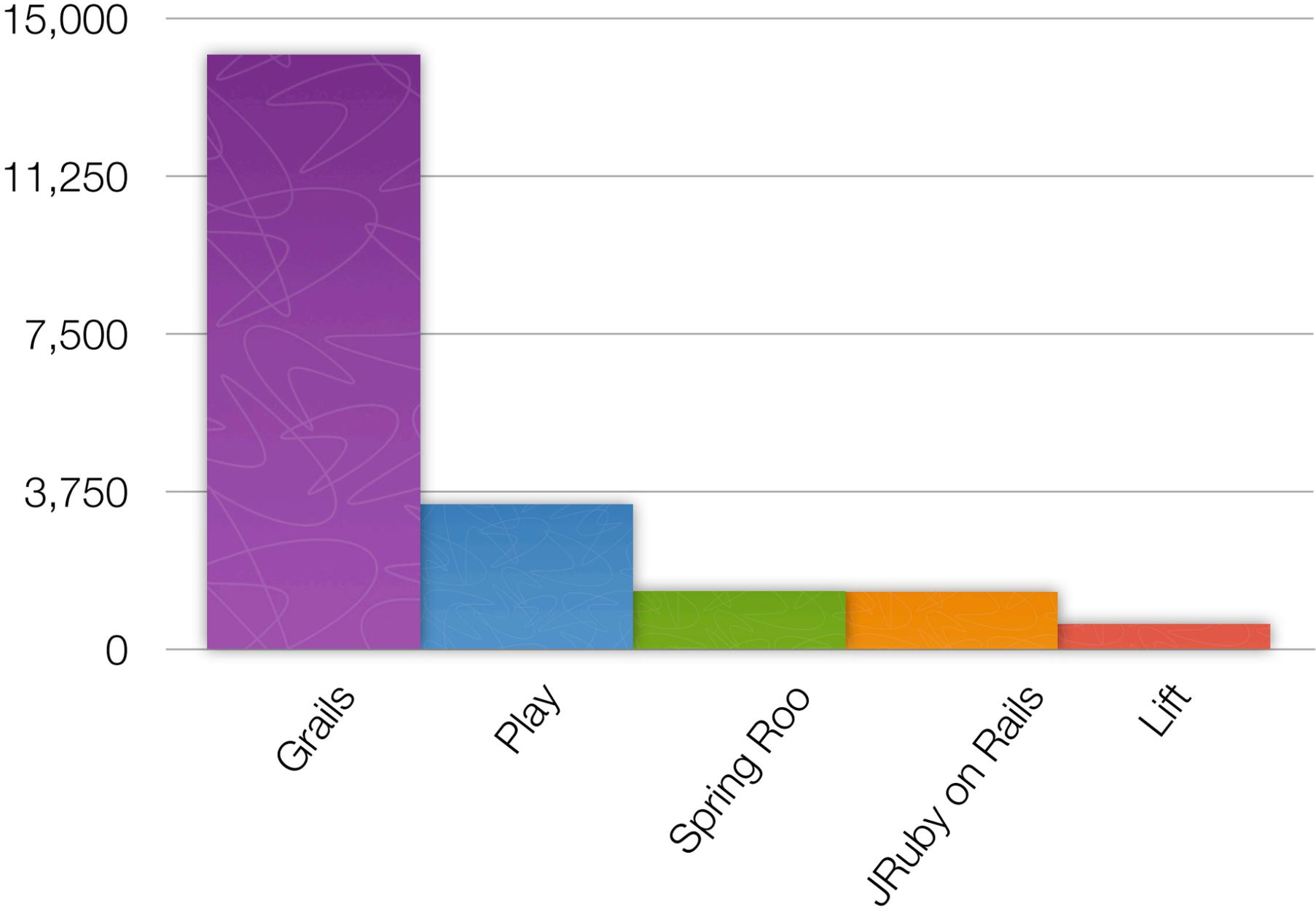
## JavaScript MVC Frameworks, March 2013



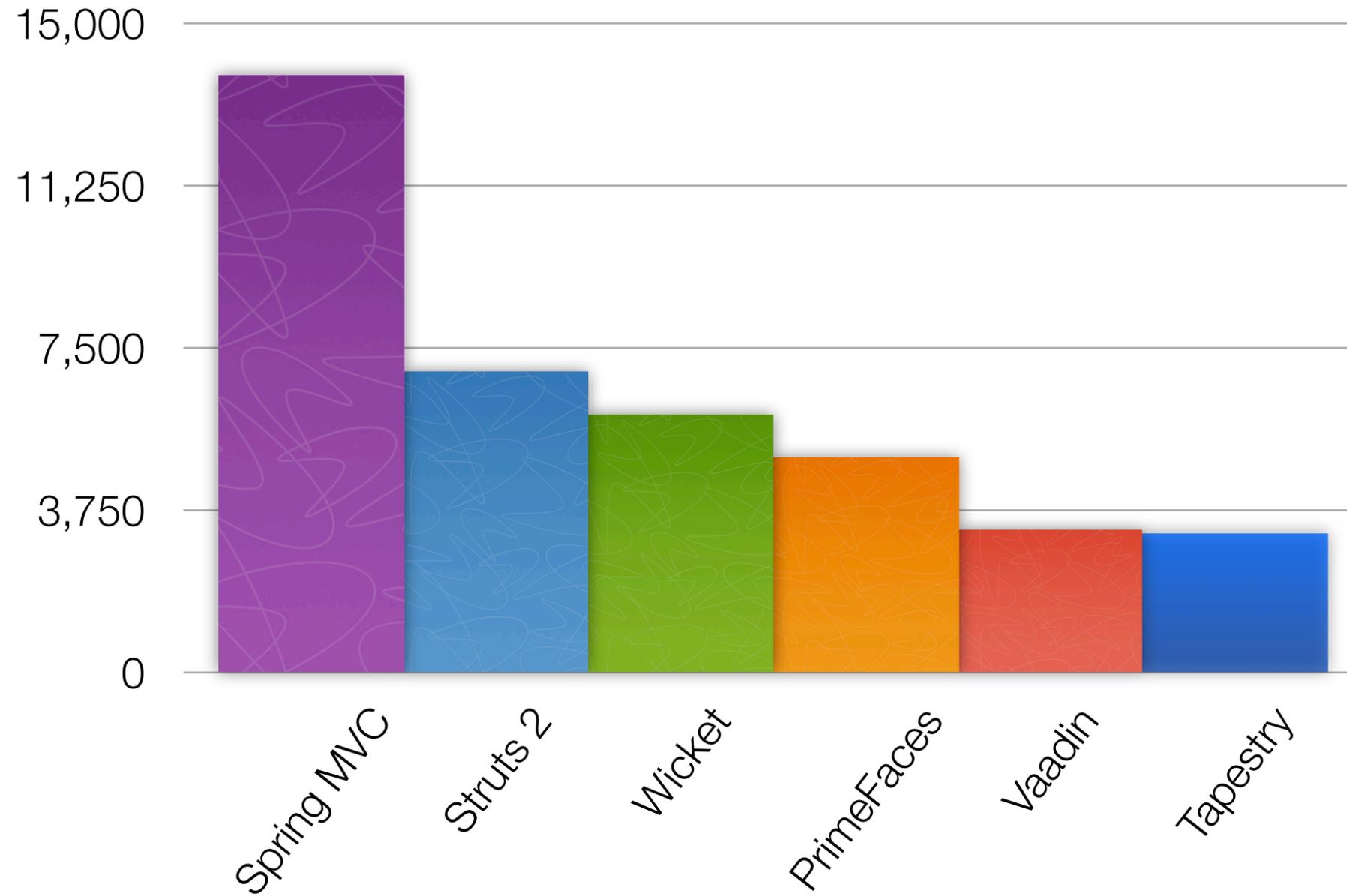
## JVM API Frameworks, March 2013



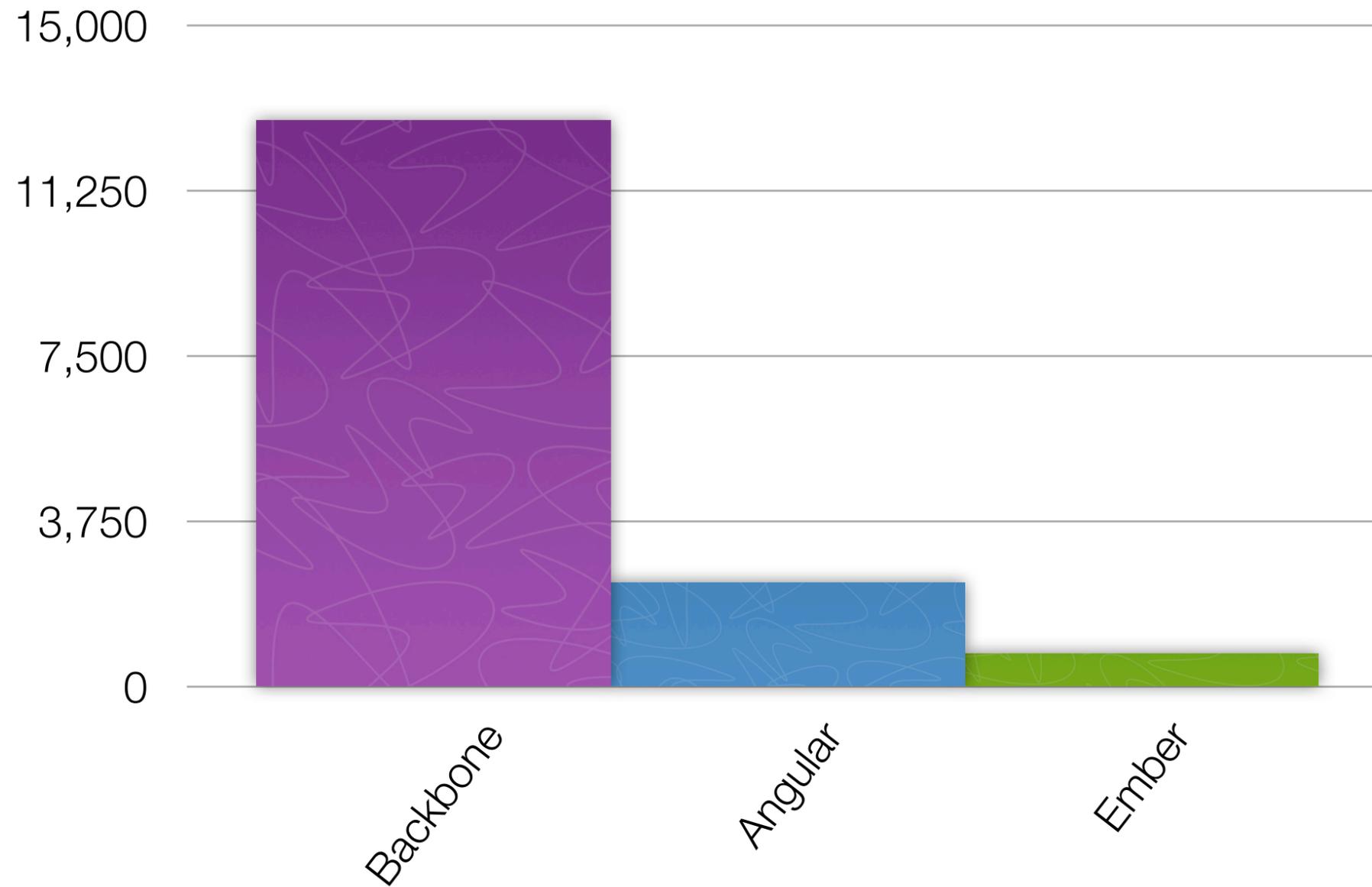
Full Stack Frameworks, March 2013



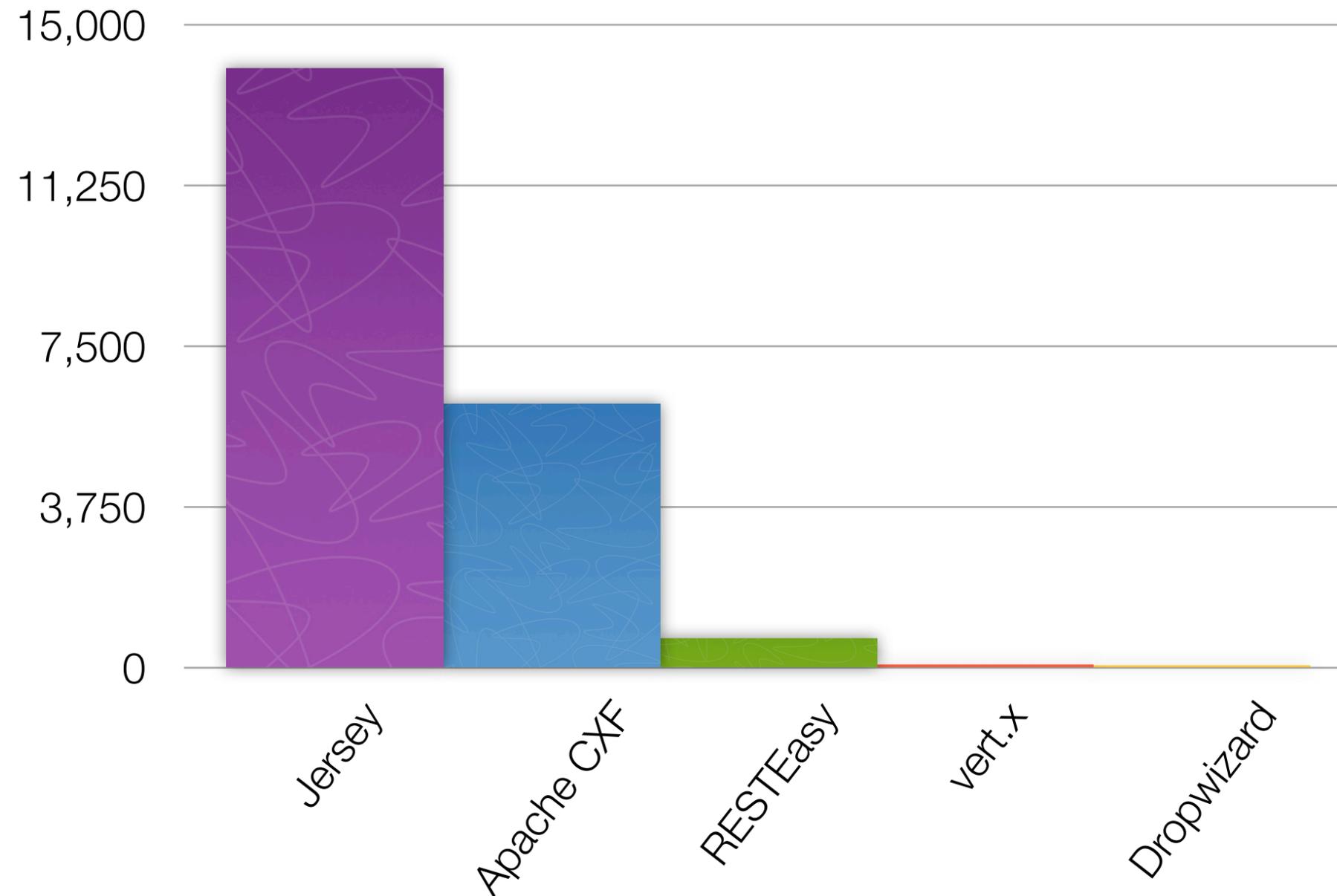
Pure Web Frameworks, March 2013



JavaScript MVC Frameworks, March 2013



## JVM API Frameworks, March 2013



# Google Trends



## Trends

Web Search Interest: **jruby rails**, **grails**, "play framework", **lift scala**, "spring roo". Worldwide, 2004 - present.



Explore trends

Hot searches

### Interest over time

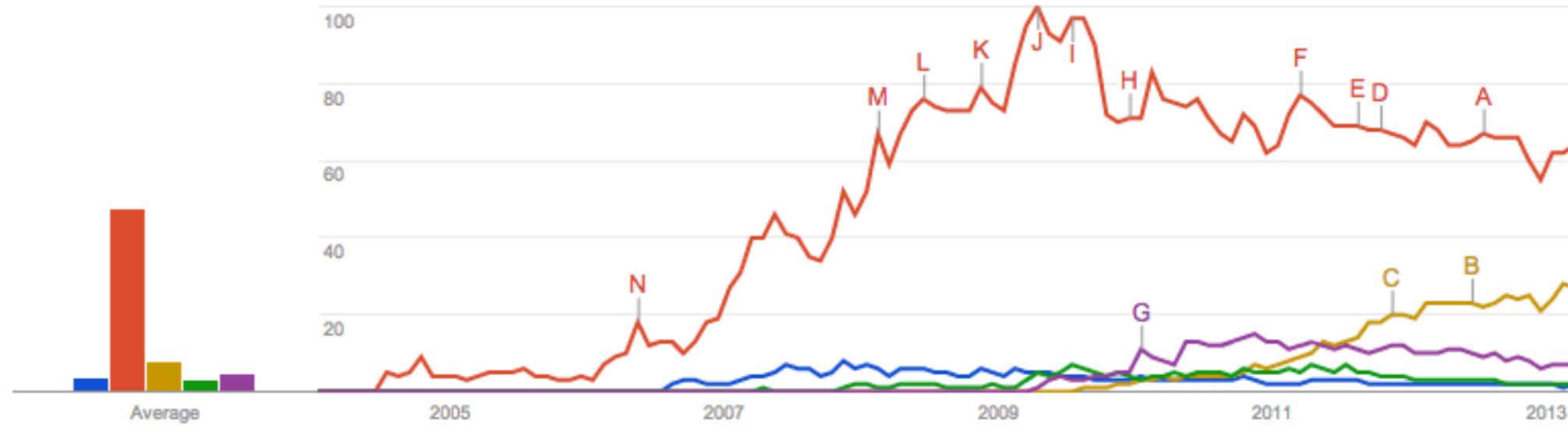
The number 100 represents the peak search interest

News headlines  Forecast

### Search terms

- × jruby rails
- × grails
- × "play framewor
- × lift scala
- × "spring roo"

▶ Other comparisons



Embed

# Google Trends



## Trends

Web Search Interest: "spring mvc", "struts 2", jsf primefaces, tapestry java, wicket java. Worldwide, 2004 - present.



Explore trends

Hot searches

Search terms ?

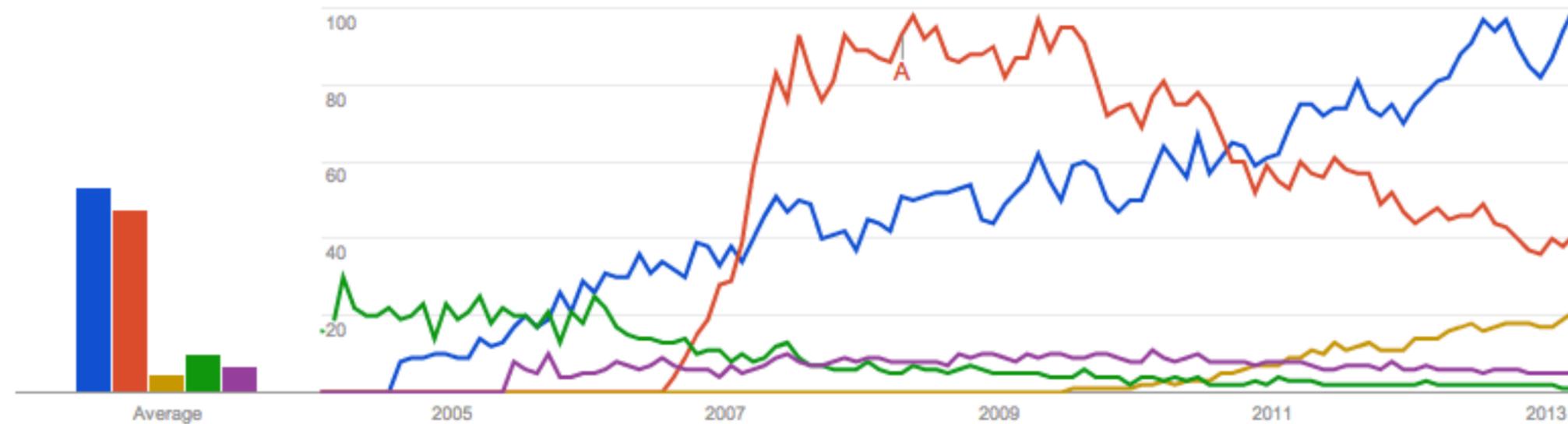
- × "Spring MVC"
- × "Struts 2"
- × JSF PrimeFaces
- × Tapestry Java
- × Wicket Java

▶ Other comparisons

## Interest over time ?

The number 100 represents the peak search interest

News headlines  Forecast ?



Embed

# Google Trends



## Trends

Web Search Interest: ember.js, angularjs, backbone.js. Worldwide, 2004 - present.



Explore trends

Hot searches

Search terms ?

× Ember.js

× AngularJS

× Backbone.js

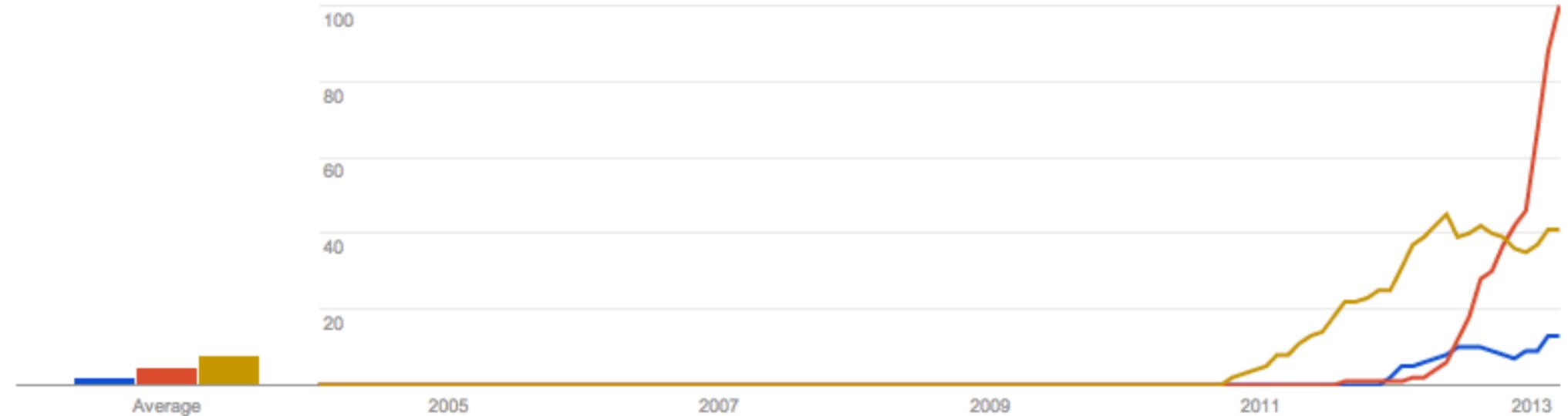
+ Add term

▶ Other comparisons

### Interest over time ?

The number 100 represents the peak search interest

News headlines ?  Forecast ?



# Google Trends



## Trends

Web Search Interest: jersey java, cxf java, resteasy, dropwizard, vert.x. Worldwide, 2004 - present.



Explore trends

Hot searches

### Interest over time ?

The number 100 represents the peak search interest

News headlines  Forecast ?

### Search terms ?

× Jersey Java

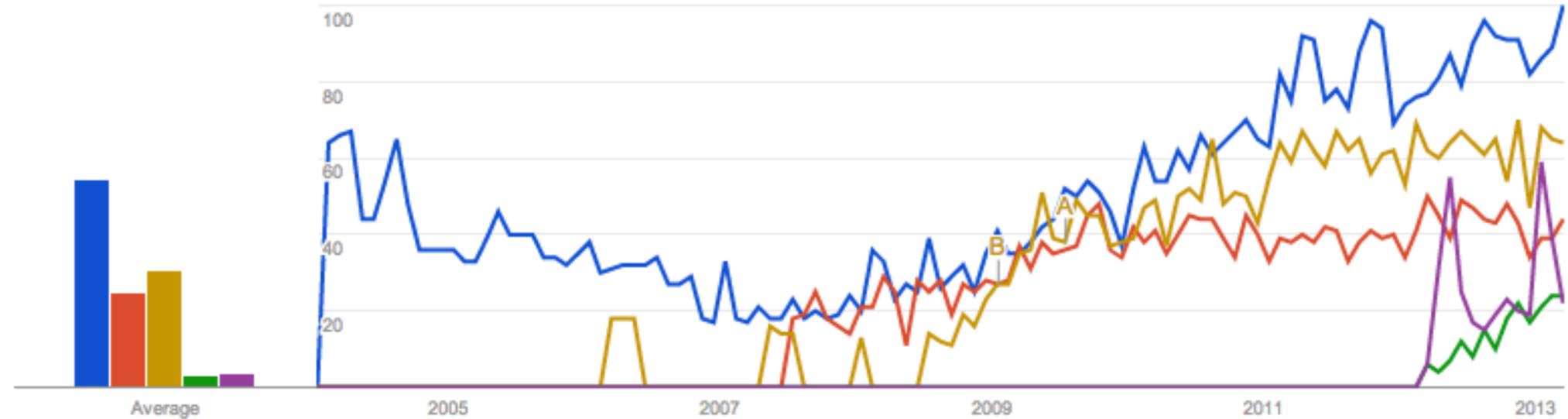
× CXF Java

× RESTEasy

× Dropwizard

× vert.x

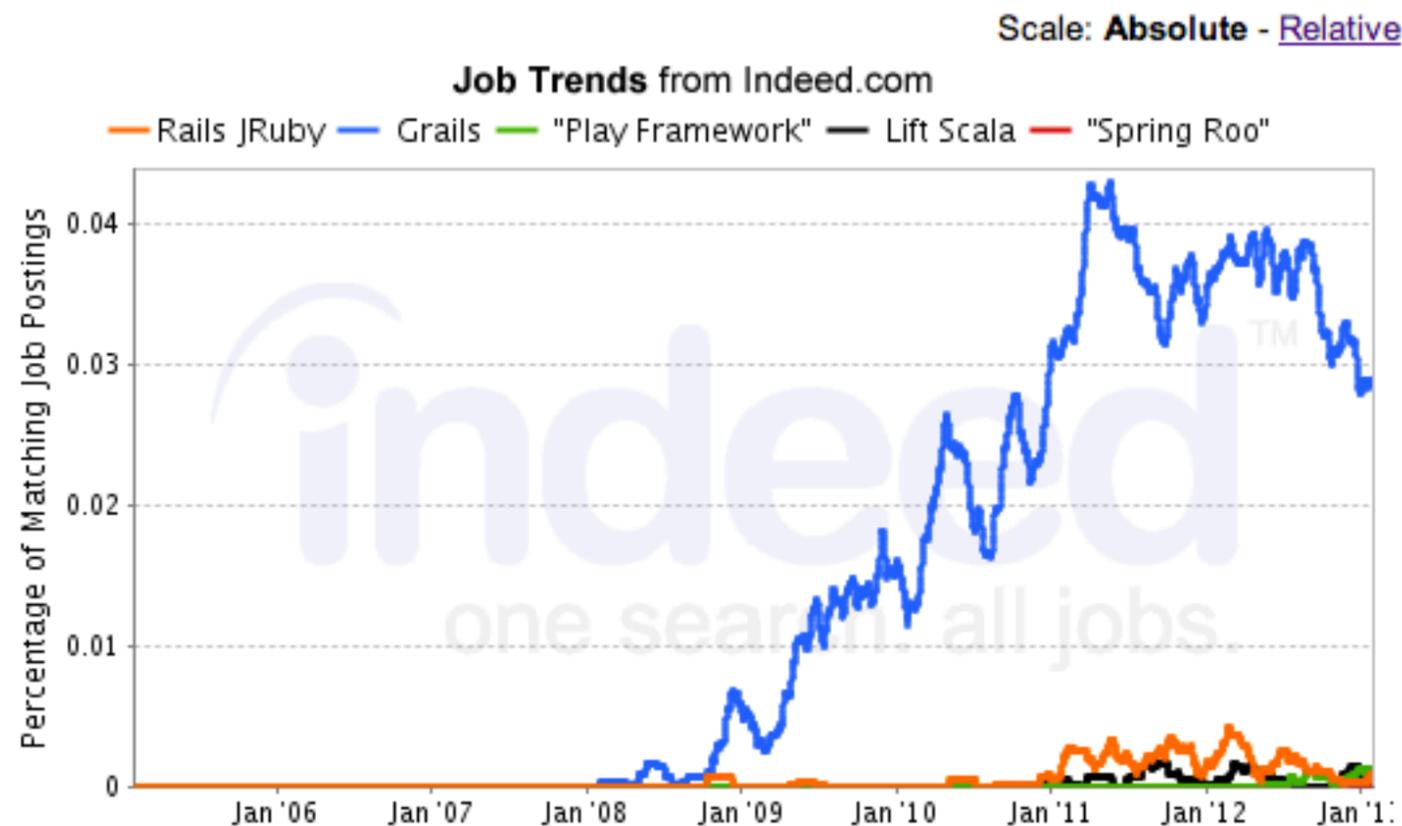
▶ Other comparisons



Embed

# Indeed Job Trends

## Rails JRuby, Grails, "Play Framework", Lift Scala, "Spring Roo" Job Trends



### Top Job Trends

1. [HTML5](#)
2. [MongoDB](#)
3. [iOS](#)
4. [Android](#)
5. [Mobile app](#)
6. [Puppet](#)
7. [Hadoop](#)
8. [jQuery](#)
9. [PaaS](#)
10. [Social Media](#)

Indeed.com searches millions of jobs from thousands of job sites.  
This job trends graph shows the percentage of jobs we find that contain your search terms.

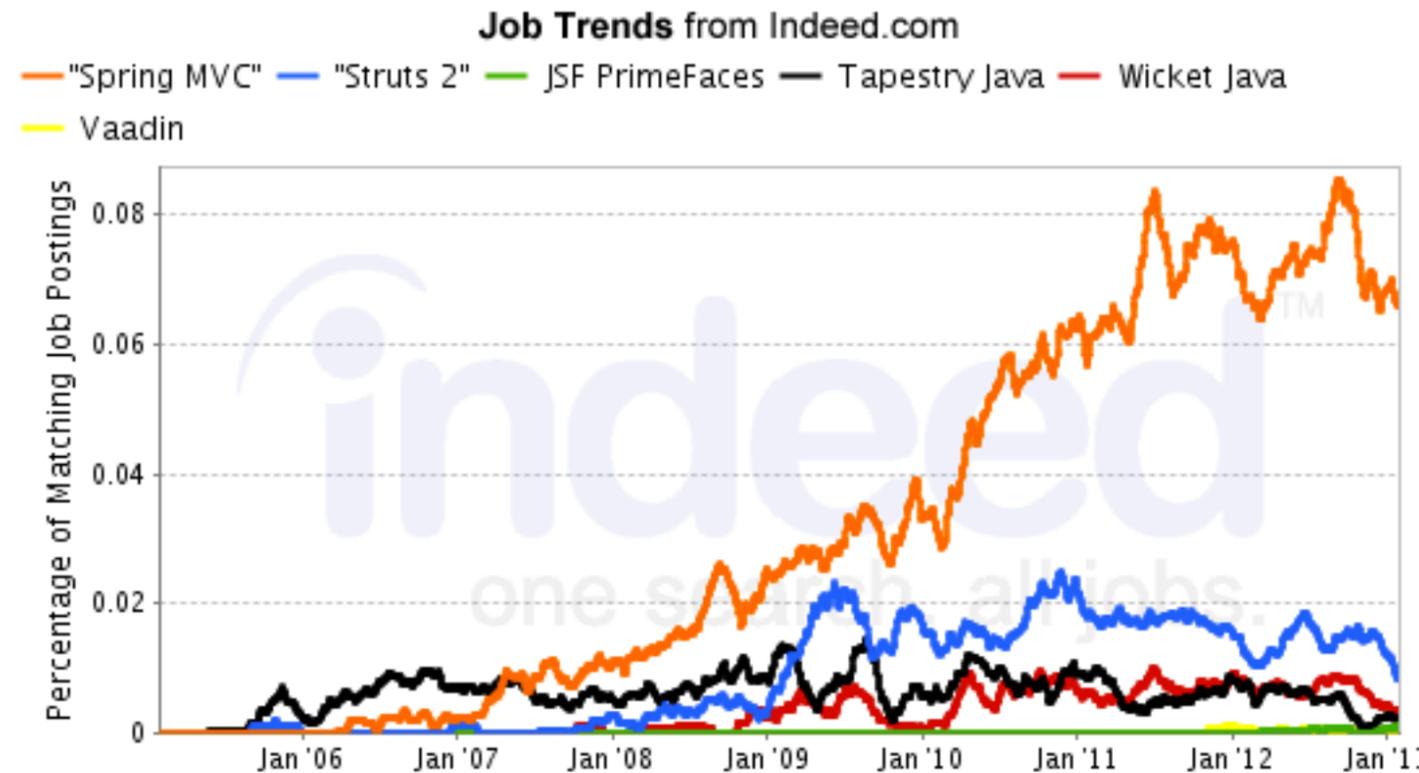
# Indeed Job Trends

## "Spring MVC", "Struts 2", JSF PrimeFaces, Tapestry Java, Wicket Java, Vaadin Job Trends

Scale: **Absolute** - [Relative](#)

▶ [Email to a friend](#)

▶ [Post on your blog/website](#)



### Top Job Trends

1. [HTML5](#)
2. [MongoDB](#)
3. [iOS](#)
4. [Android](#)
5. [Mobile app](#)
6. [Puppet](#)
7. [Hadoop](#)
8. [jQuery](#)
9. [PaaS](#)
10. [Social Media](#)

Indeed.com searches millions of jobs from thousands of job sites.  
This job trends graph shows the percentage of jobs we find that contain your search terms.

## Ember.js, AngularJS, Backbone.js Job Trends



Indeed.com searches millions of jobs from thousands of job sites.  
This job trends graph shows the percentage of jobs we find that contain your search terms.

▶ [Email to a friend](#)

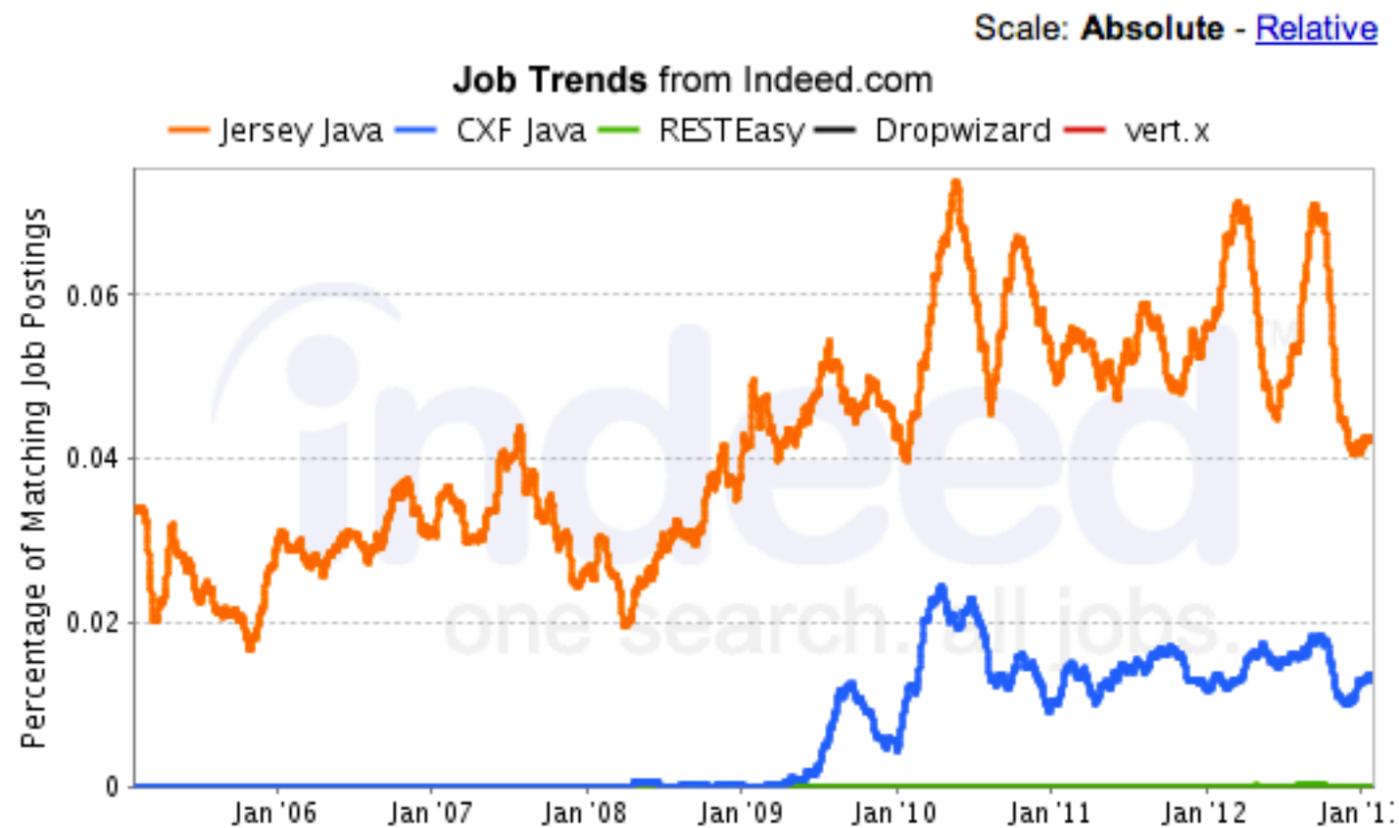
▶ [Post on your blog/website](#)

### Top Job Trends

1. [HTML5](#)
2. [MongoDB](#)
3. [iOS](#)
4. [Android](#)
5. [Mobile app](#)
6. [Puppet](#)
7. [Hadoop](#)
8. [jQuery](#)
9. [PaaS](#)
10. [Social Media](#)

# Indeed Job Trends

## Jersey Java, CXF Java, RESTEasy, Dropwizard, vert.x Job Trends



▶ [Email to a friend](#)

▶ [Post on your blog/website](#)

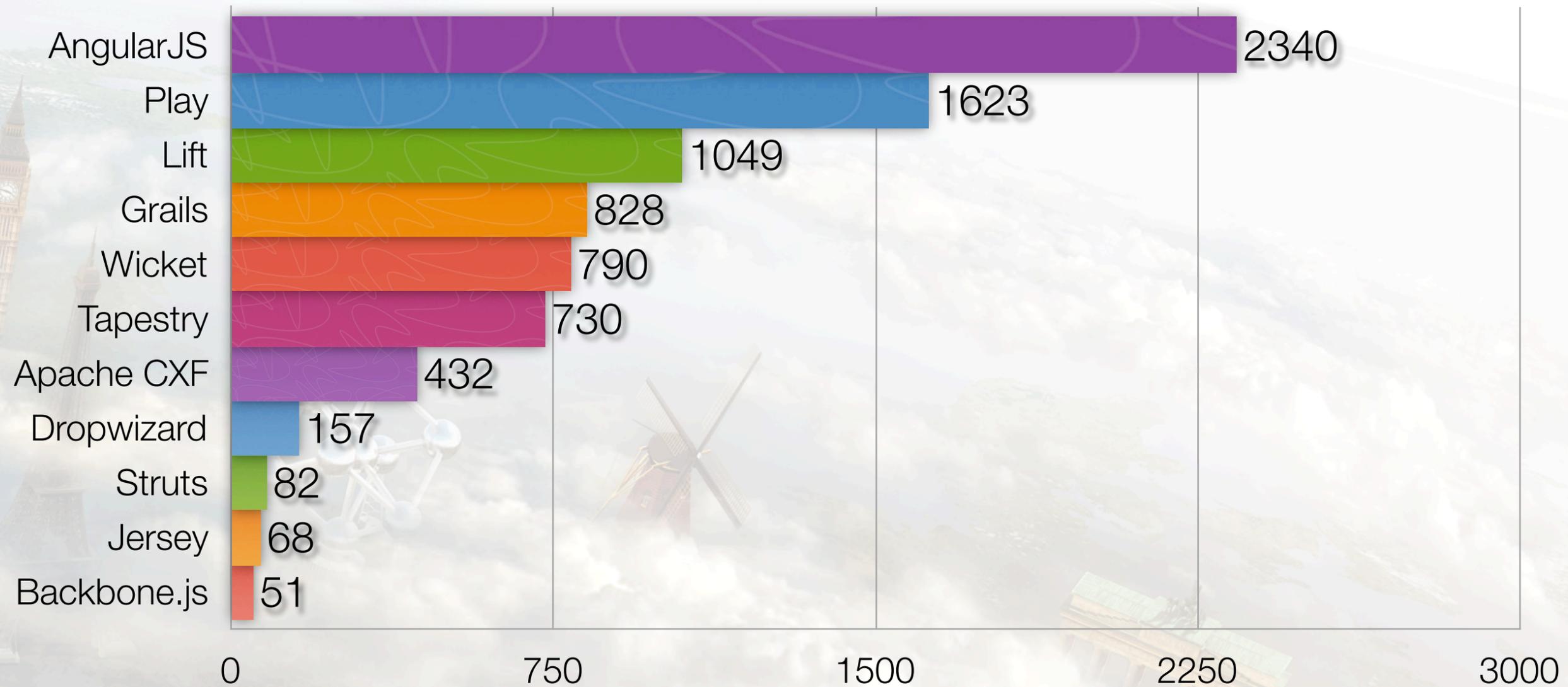
### Top Job Trends

1. [HTML5](#)
2. [MongoDB](#)
3. [iOS](#)
4. [Android](#)
5. [Mobile app](#)
6. [Puppet](#)
7. [Hadoop](#)
8. [jQuery](#)
9. [PaaS](#)
10. [Social Media](#)

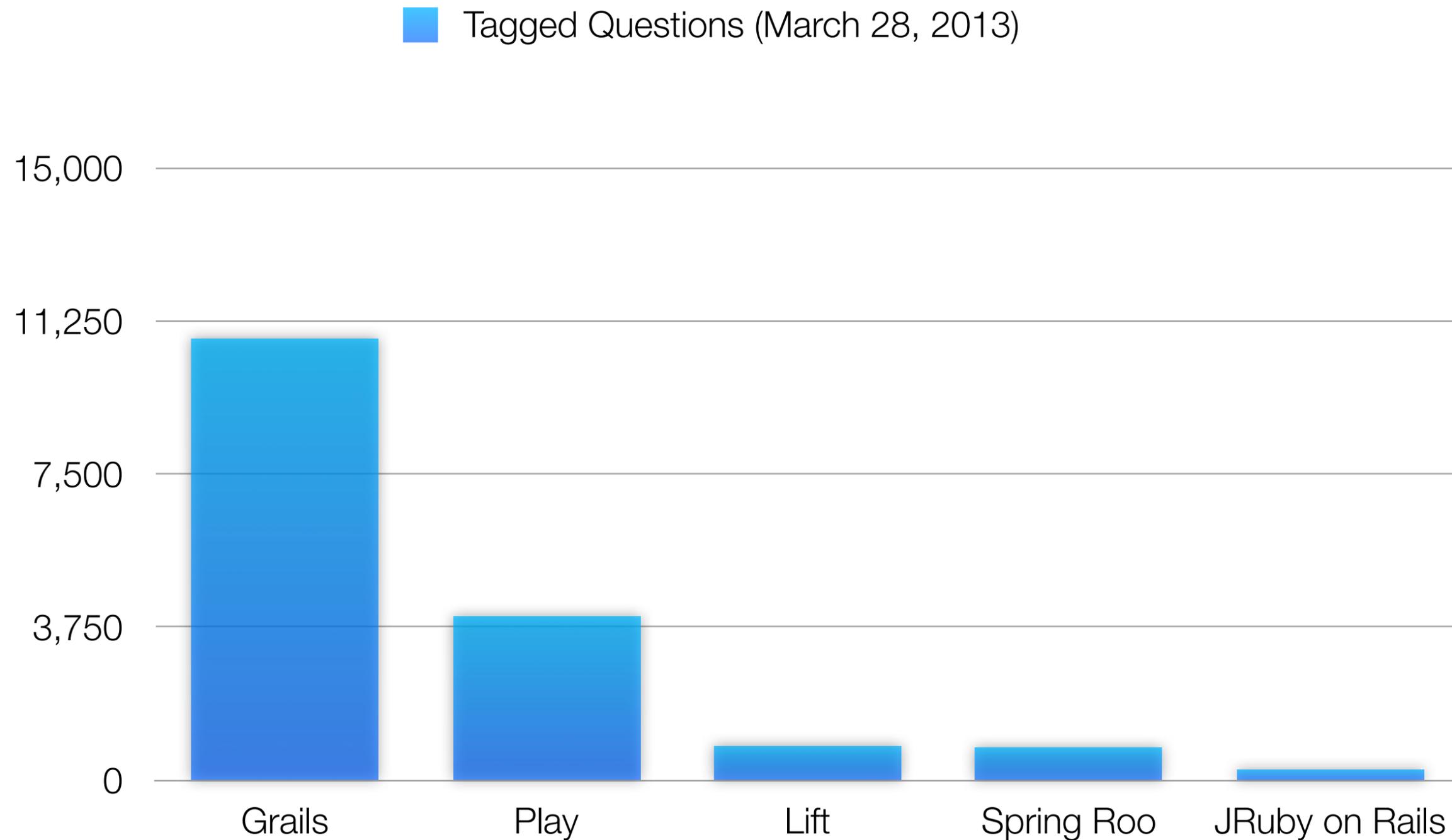
Indeed.com searches millions of jobs from thousands of job sites.  
This job trends graph shows the percentage of jobs we find that contain your search terms.

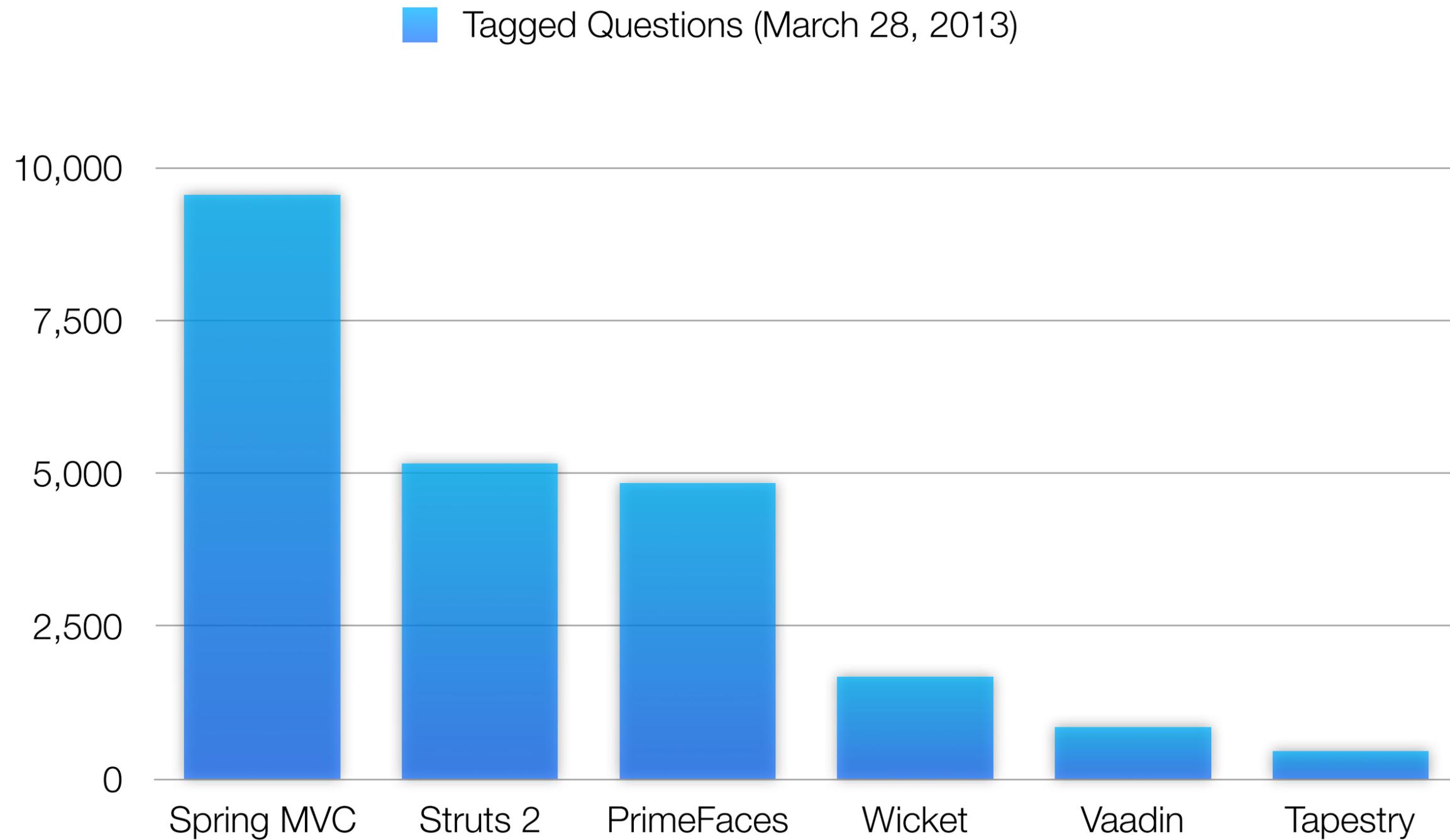
# Mailing List Traffic

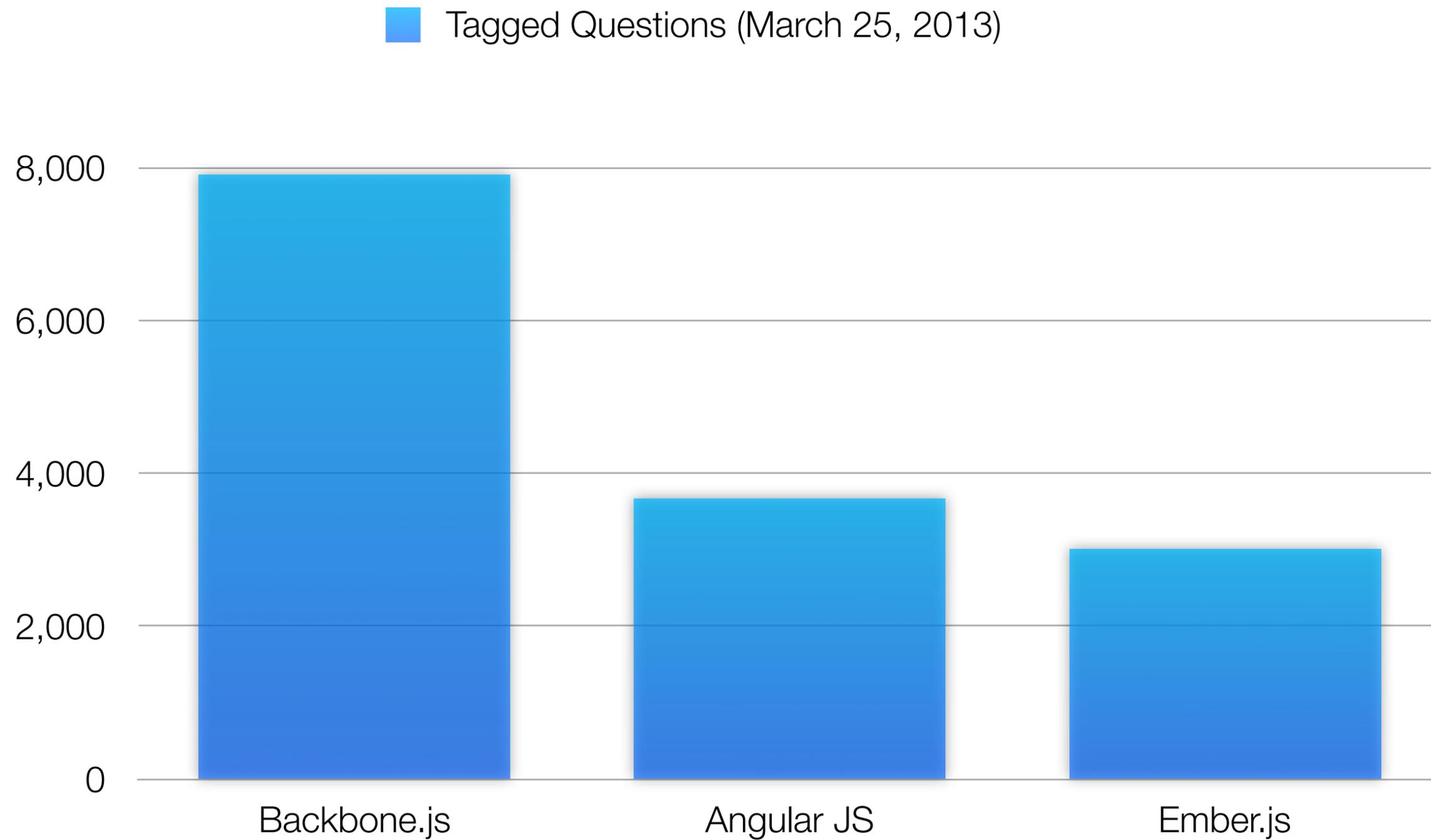
February 2013

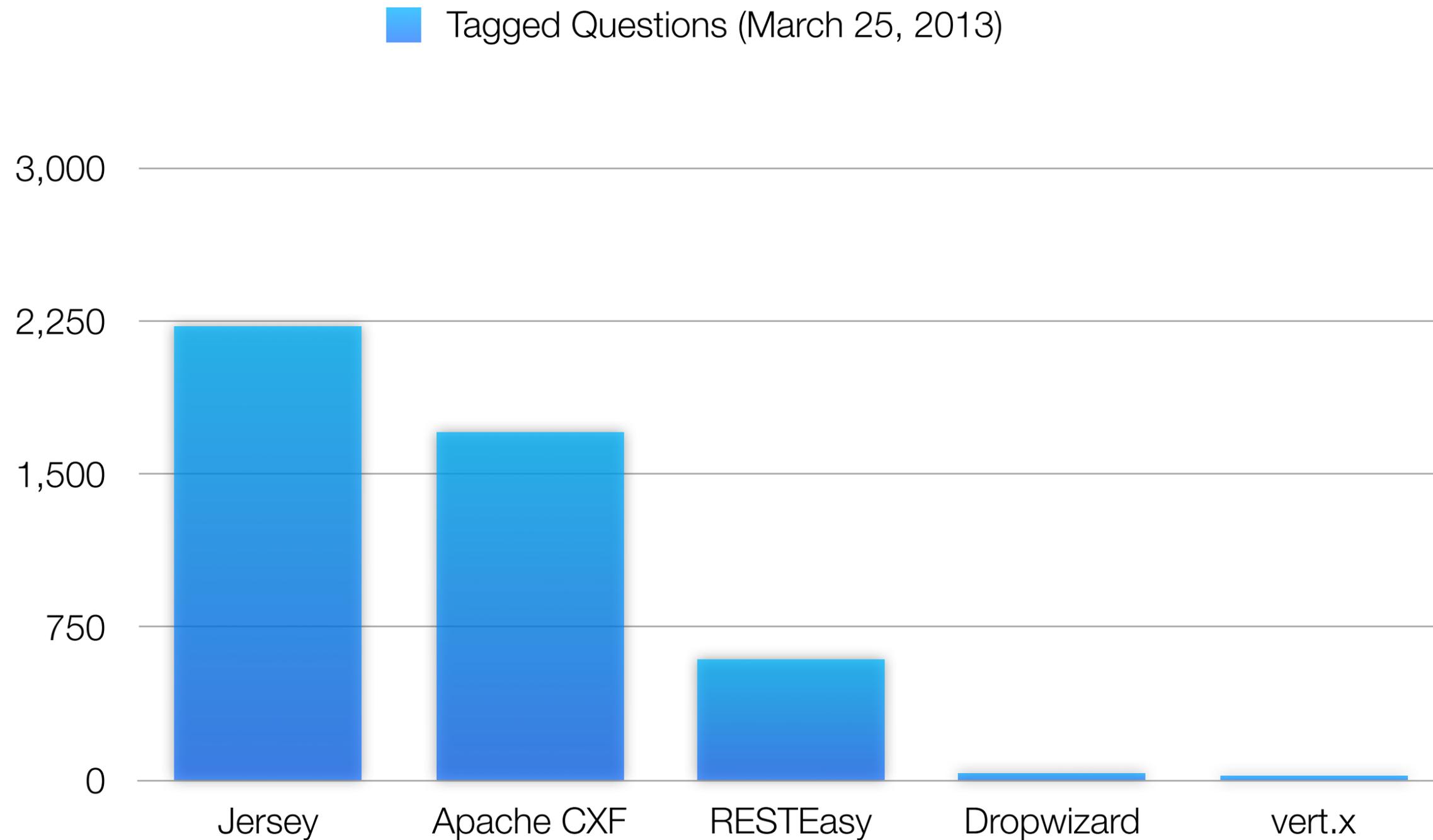


\* Frameworks not listed here use Forums, which don't provide this data.



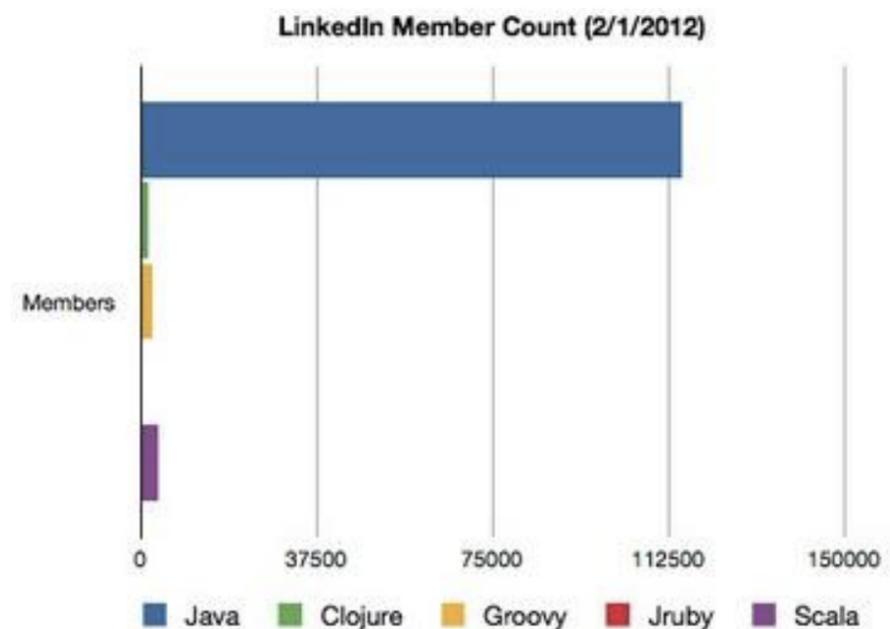






# Java Developers

“Java remains – in spite of the fragmented programming language landscape – a viable, growing language.”



<http://redmonk.com/sogrady/2012/02/08/language-rankings-2-2012/>

# Modern Principles

The screenshot shows a web browser window with the URL `blogs.atlassian.com/2012/01/modern-principles-in-web-development/`. The page header includes the Atlassian logo and the text 'Atlassian Blogs'. The main content area features the title 'Modern Principles in Web Development' and a byline: 'By Rich Manalang, Developer Advocate', 'About Developer', and 'On January 18, 2012'. Social sharing buttons for +1 (11), Tweet (162), and Like (8) are visible. The main text of the post reads: 'I've been kickstarting a bunch of small web apps lately. It seems like every time I start a new project, there's always something new that causes me to adjust my development principles. I thought it might be good to take a snapshot of what's "in" today. I like to think of web development phases starting from idea to delivery... all of it backed by strong principles of how to build great apps. The following are my core web development principles today:'. Below this is a bulleted list of principles.

## Modern Principles in Web Development

By Rich Manalang, Developer Advocate  
About Developer  
On January 18, 2012

+1 11 Tweet 162 Like 8

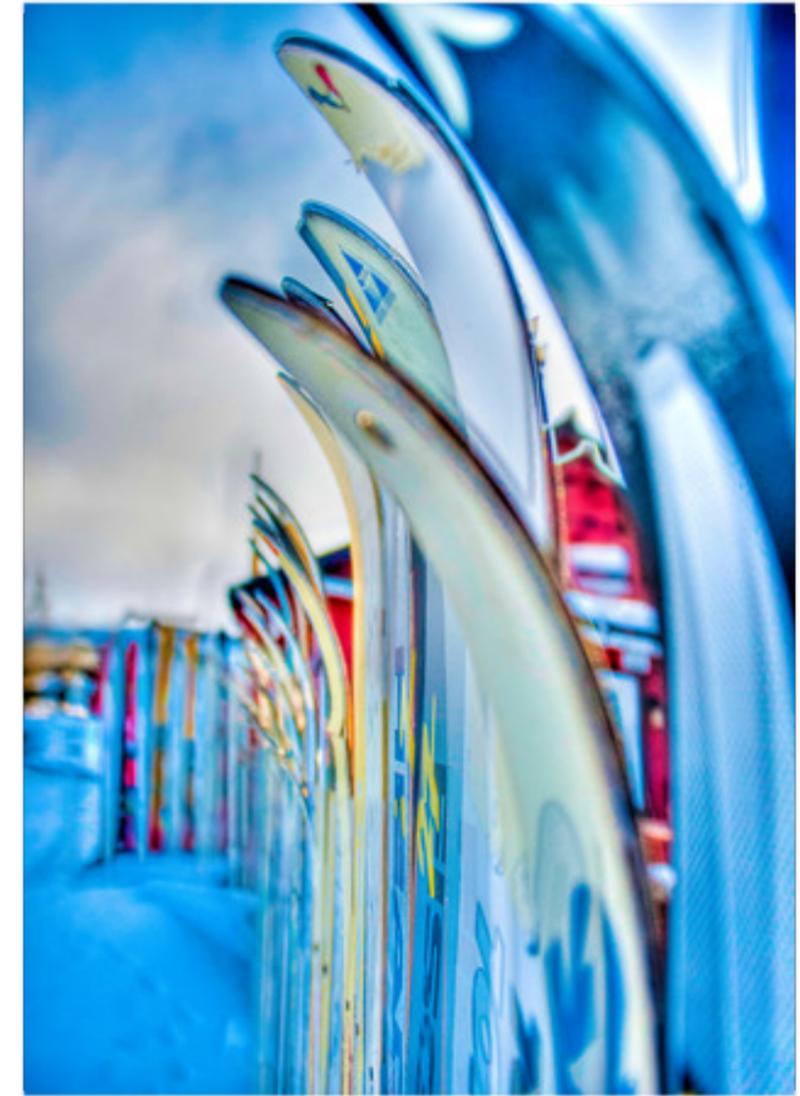
I've been kickstarting a bunch of small web apps lately. It seems like every time I start a new project, there's always something new that causes me to adjust my development principles. I thought it might be good to take a snapshot of what's "in" today. I like to think of web development phases starting from idea to delivery... all of it backed by strong principles of how to build great apps.

The following are my core web development principles today:

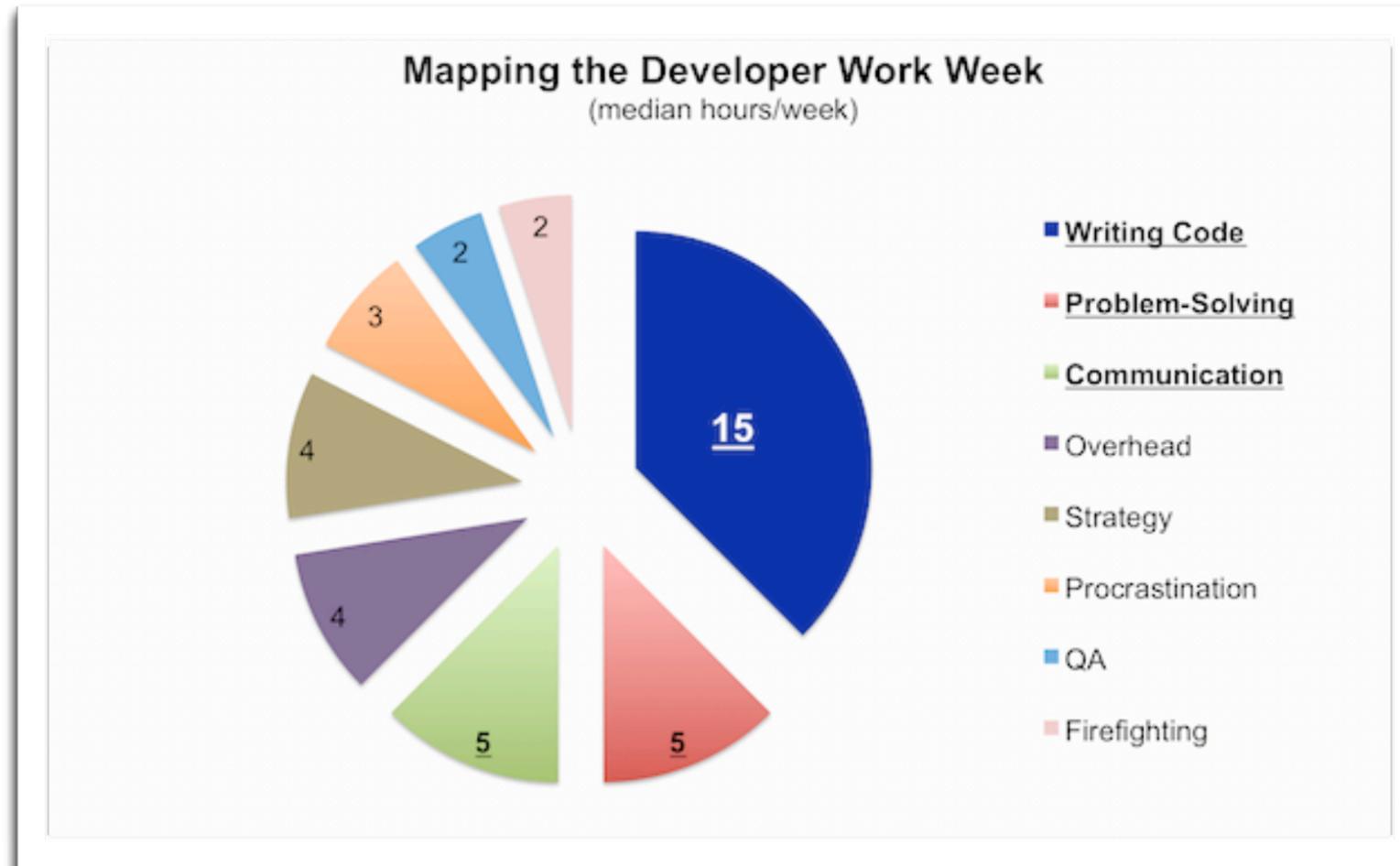
- Designing for mobile first (even if you're not building a mobile app)
- Build only single page apps
- Create and use your own REST API
- "Sex sells" applies to web apps

# The Modern JVM Web Developer

- ▶ Starts with Fast Hardware
- ▶ Uses IntelliJ IDEA   
2013 Jolt Awards Coding Tools
- ▶ Leverages JavaScript, HTML5, and CSS3
- ▶ Creates High Performance Web Sites
- ▶ For Mobile Devices
- ▶ In the Cloud
- ▶ And *cares* about Security

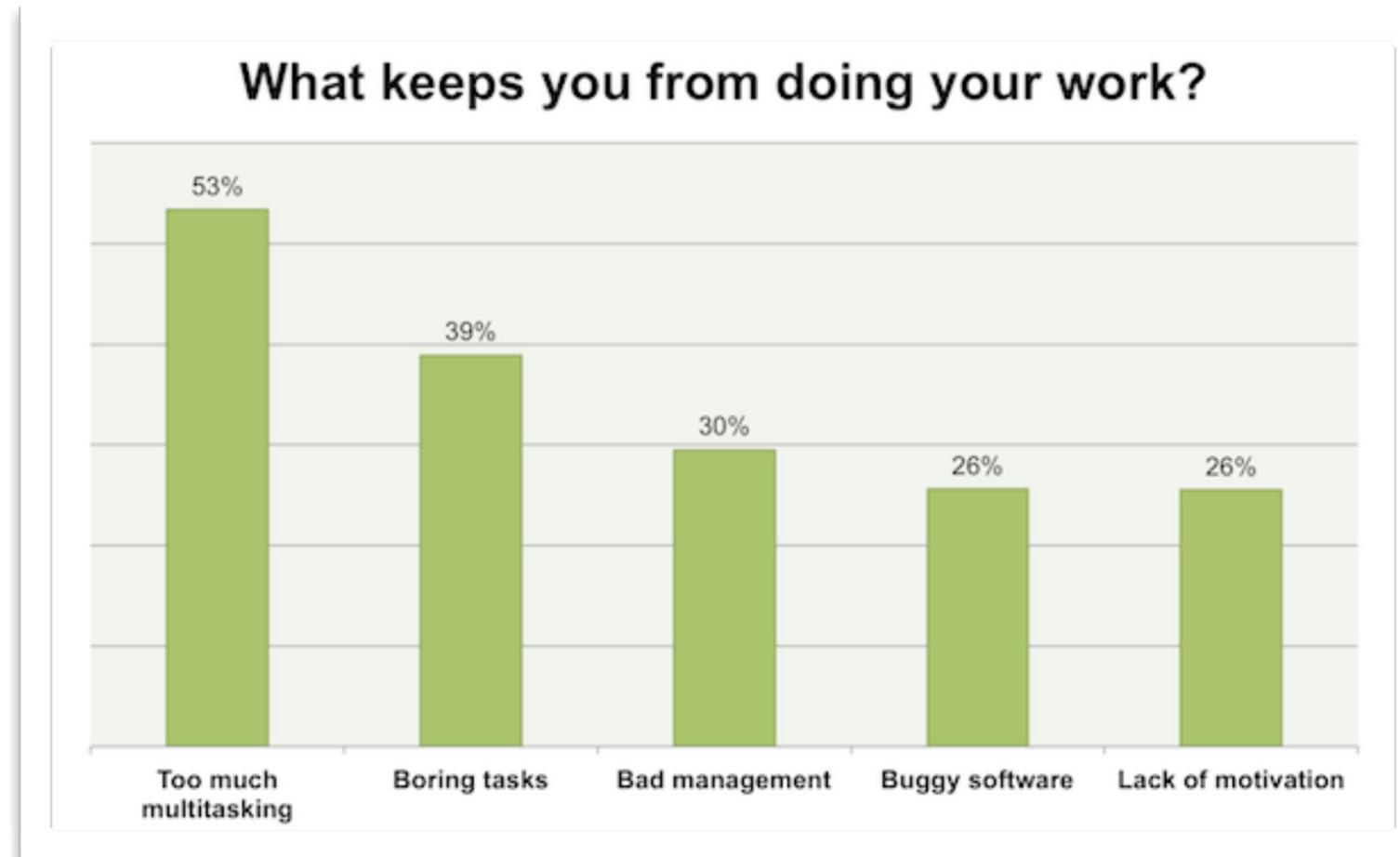


# Developer Productivity



<http://zeroturnaround.com/blog/developer-productivity-report-part-1-developer-timesheet/>

# Developer Productivity



<http://zeroturnaround.com/blog/developer-productivity-report-part-3-developer-efficiency/>

# There is no “best” framework



Just lots of awesome choices...

# Don't listen to me!



# Choose your own!

- ▶ Prioritize a list of goals that are important to your application.
- ▶ Pick 3-4 frameworks and do a spike with each, developing the same application.
- ▶ Document and rank each framework against your list of goals.
- ▶ Calculate and choose!
- ▶ Don't be a Picker.

# Questions?

## Contact Information

<http://raibledesigns.com>

[@mraible](#)

## Presentations



<http://slideshare.net/mraible>

