

# COMPARING JVM WEB FRAMEWORKS

**Matt Raible**

<http://raibledesigns.com>

@mraible

The background of the slide features a serene landscape at sunset. A bright sun sits low on the horizon behind a range of mountains, casting a warm, golden glow across the sky and reflecting off the calm surface of a lake in the foreground. The overall atmosphere is peaceful and inspiring.

# Who is **Matt Raible**?

Father, Skier, Cyclist

**Web Framework Connoisseur**

Founder of AppFuse



**Bus Lover**

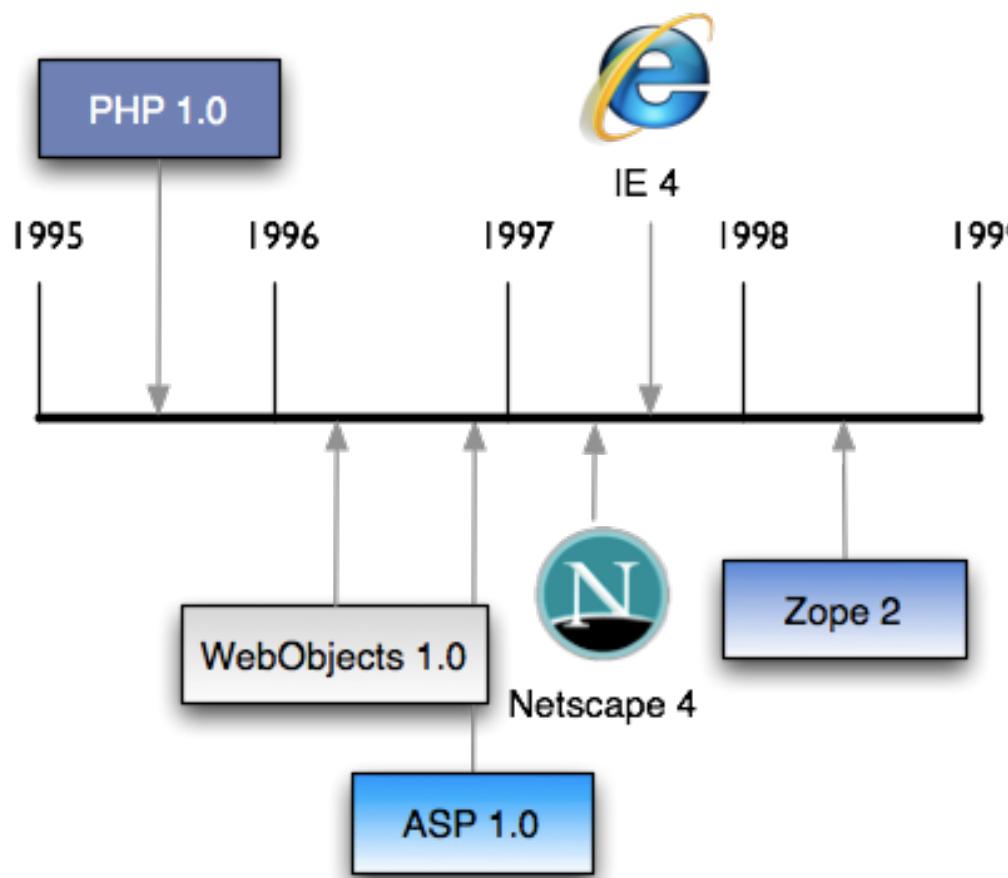
Blogger on raibledesigns.com

# Session Agenda

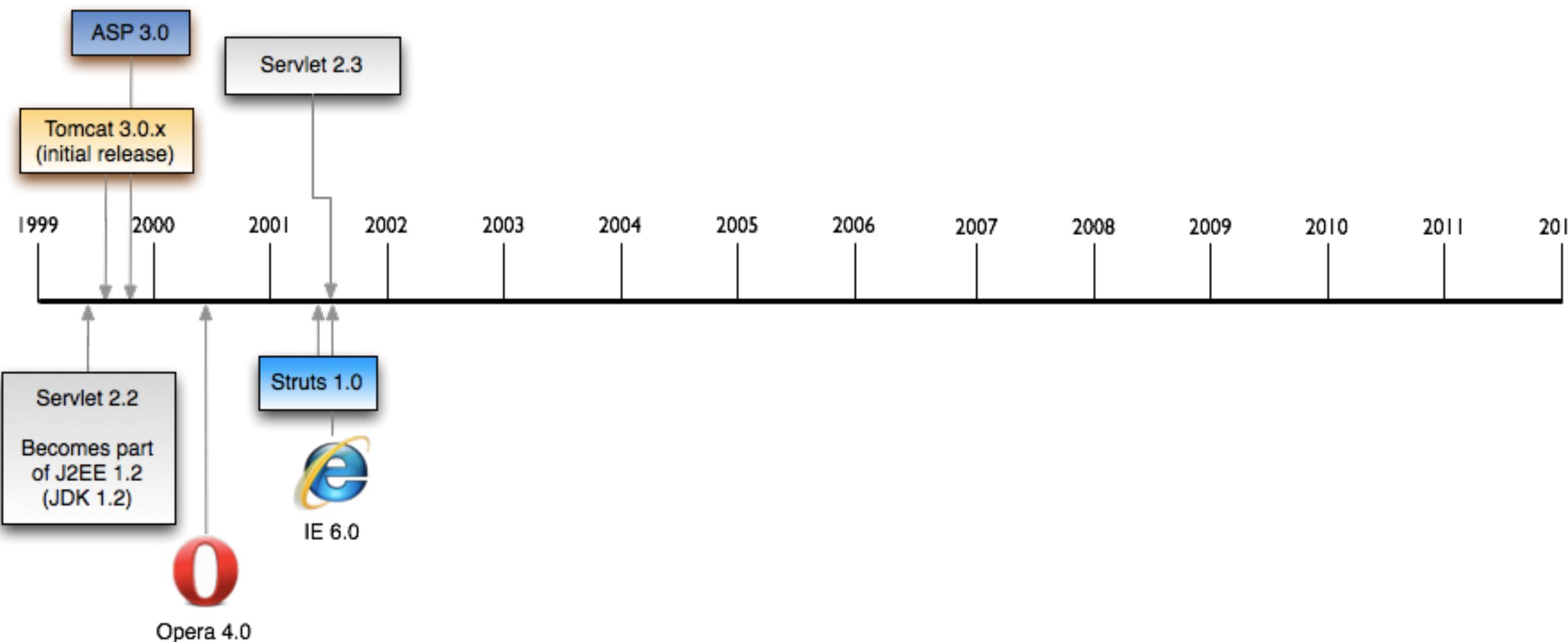
- ▶ History of JVM Web Frameworks
- ▶ The Paradox of Choice
- ▶ Methods and Metrics
- ▶ Conclusion
- ▶ Q and A



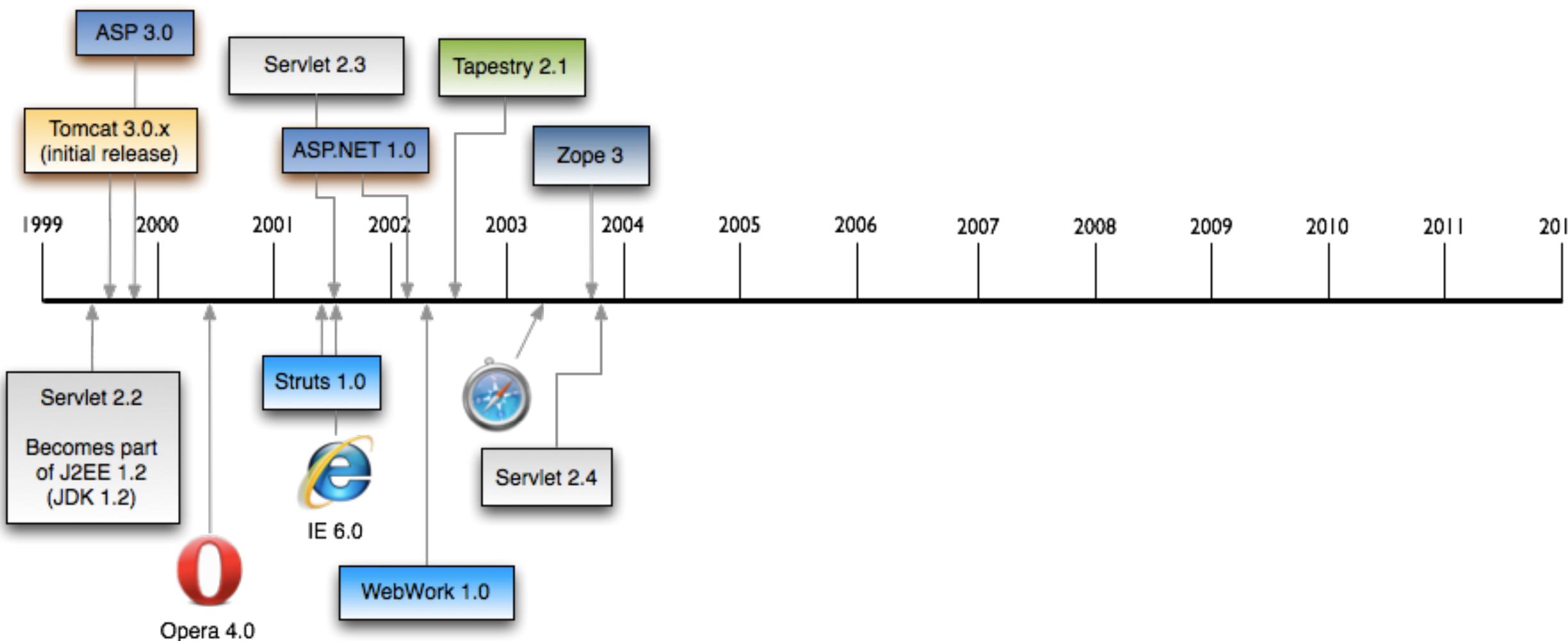
# History of Web Frameworks



# History of Web Frameworks



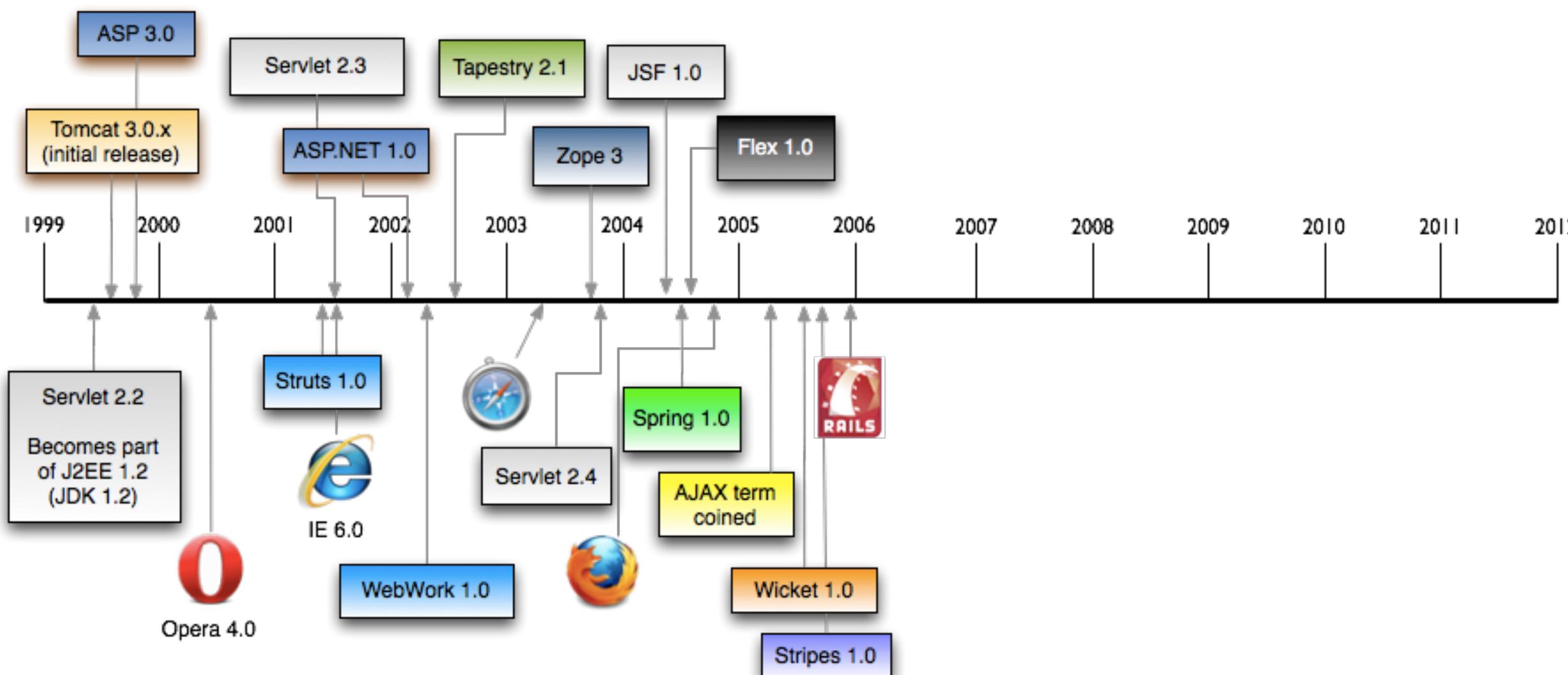
# History of Web Frameworks



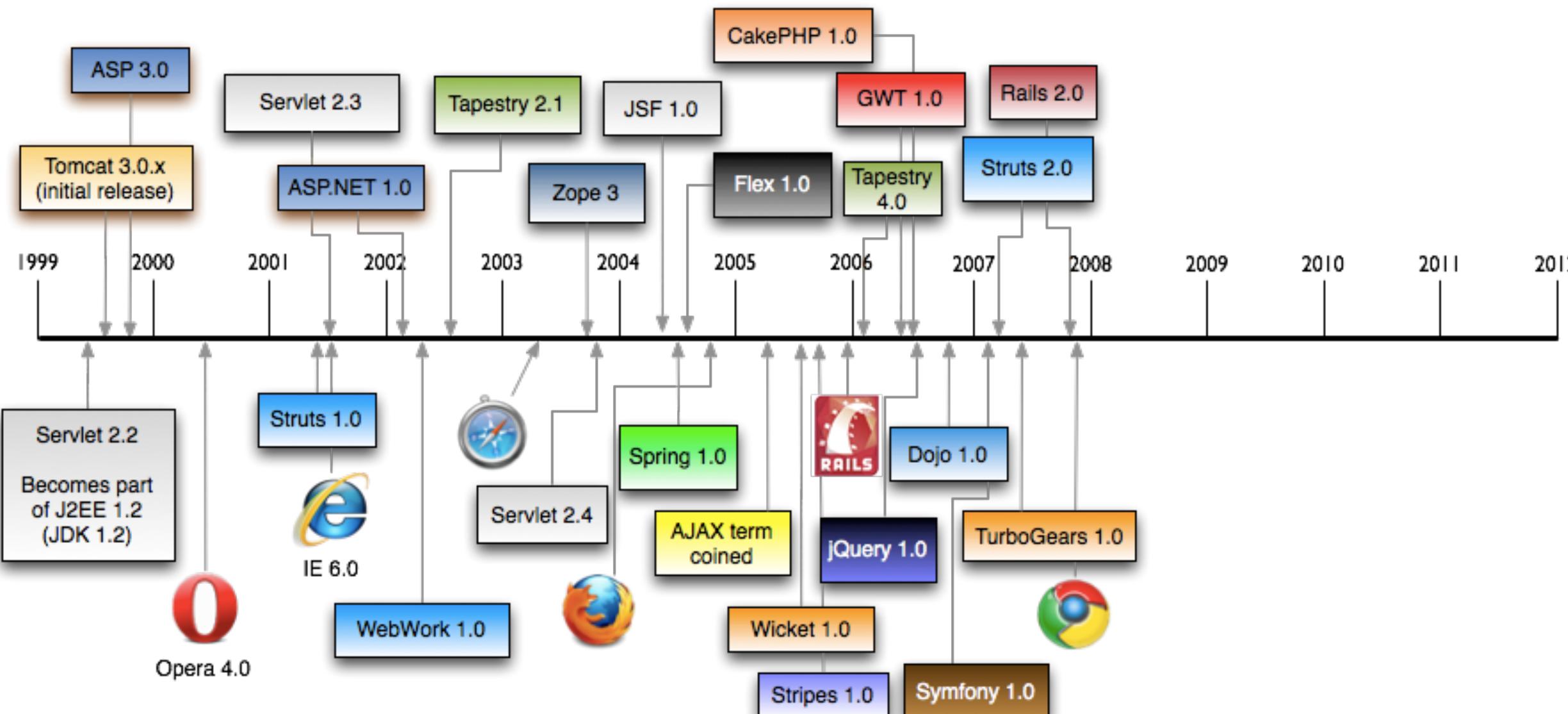
# Comparing Web Frameworks

The screenshot shows a web browser window with the title bar "Comparing Web Frameworks" and the URL "www.theserverside.com/news/thread.tss?thread\_id=29817". The page is from TheServerSide.com, a community for Enterprise Java developers. The main navigation menu includes categories like JAVA, SOA, EBIZQ, TEST/QA, .NET, AJAX, and TSSJS (which is highlighted). Below the menu are links for "TODAY ON TSS", "DISCUSSIONS", "TOPICS", and "WHITE PAPERS". A secondary navigation bar includes DESIGN/ARCHITECTURE, EJB, WEB SERVICES, WEB APPLICATIONS, DEVELOPMENT, PERFORMANCE/SCALABILITY, TOOLS, and MOBILE APP DEV. There is also a search bar and a "SITE INDEX" link. The main content area shows a news thread titled "Comparing Web Frameworks" with 96 messages. The post was made by Dion Almaer on November 05 2004 at 10:59 EST. The message discusses Matt Raible's presentation comparing Struts, Spring, Tapestry, WebWork, and JavaServer Faces. Below the message is a reply button labeled "REPLY TO THIS". At the bottom of the page is a link to "Threaded Messages (96)".

# History of Web Frameworks



# History of Web Frameworks



# 2007

The screenshot shows a Mac OS X desktop with a web browser window open to the InfoQ website. The page title is "Raible Revisits Comparing Web Frameworks". The article was posted by Bryan Clauer on Nov 26, 2007. It discusses Matt Raible's presentation at ApacheCon comparing Java Web Frameworks. The list of frameworks covered includes JSF, Spring MVC, Struts 2, Stripes, Tapestry, Wicket, Flex, Grails, GWT, Seam, Struts 2, and Wicket. The page also features a sidebar with "Educational Content" sections for Eval Begone!, From Darwin to Design, and Eucalyptus FastStart. A sidebar navigation on the right lists categories like All, Articles, Presentations, Interviews, Books, and Research.

Raible Revisits Comparing Web Frameworks

Posted by Bryan Clauer 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

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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](#)

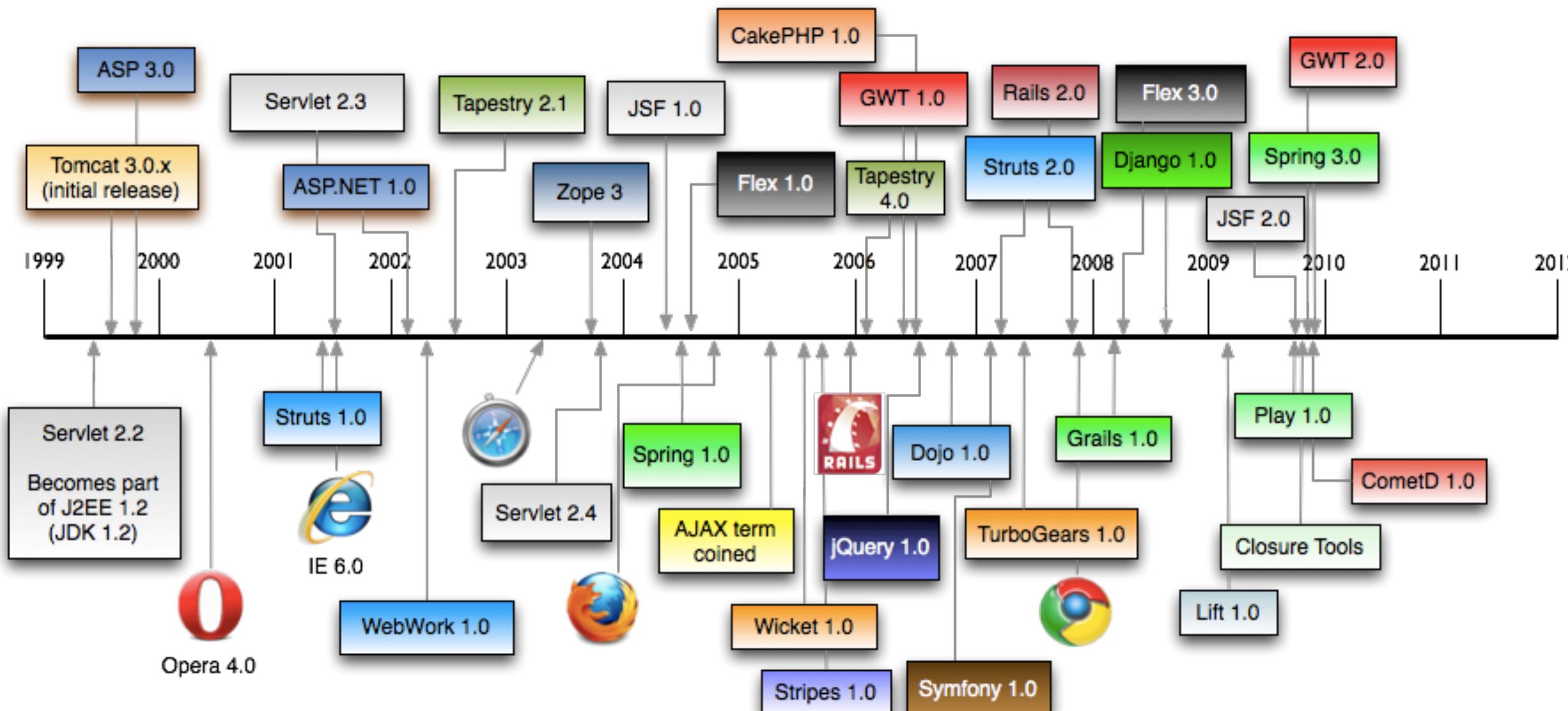
Educational Content

[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](#)

# 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

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[Home](#) > [Discussions](#) > [News](#) > Comparing JVM Web Frameworks - a response to Matt Raible

## Discussions

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

# Marc Logemann Blog

CEO of [LOGENTIS GmbH](#) on java development and surrounding topics.

MONTAG, 22. NOVEMBER 2010

## On Matt Raible's web framework comparision

### Lift

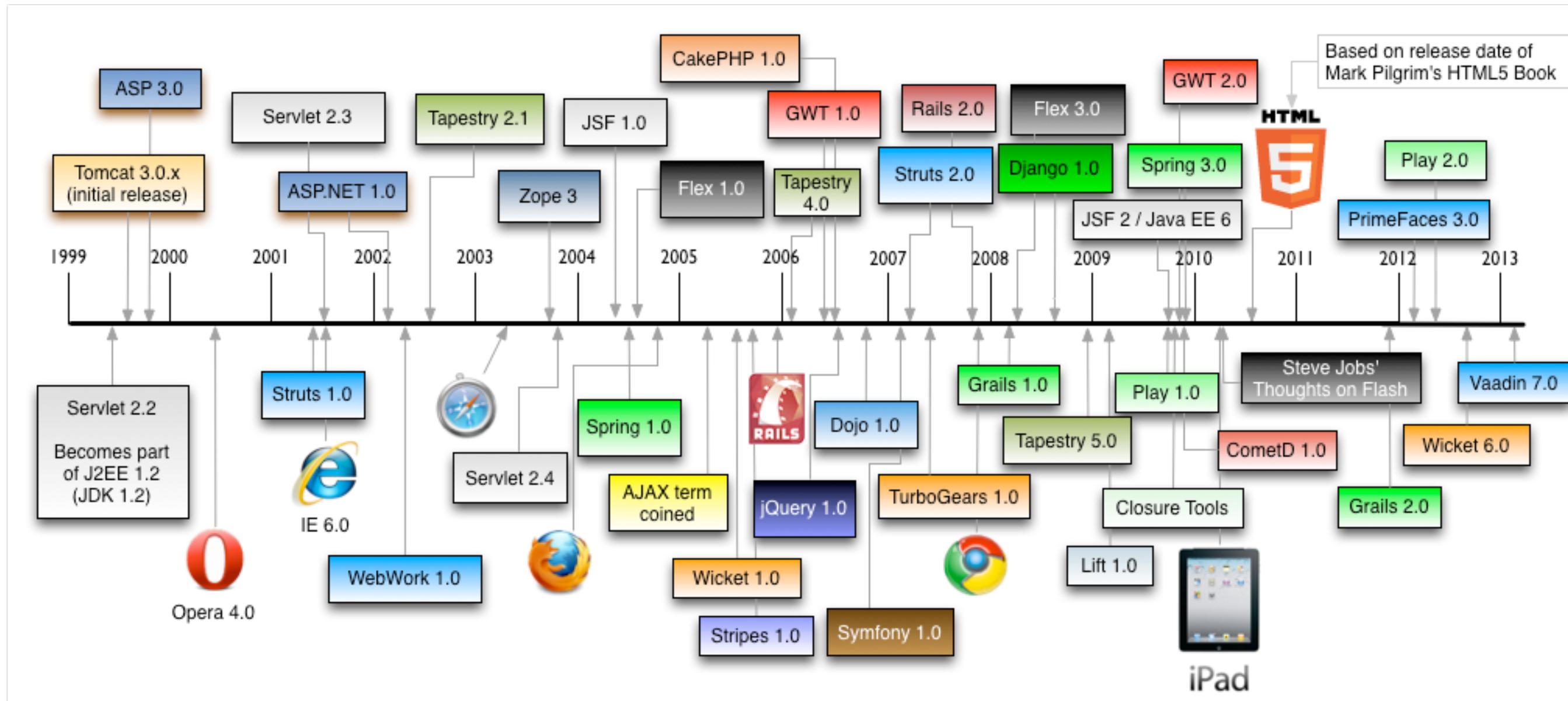
The official Lift blog

[« 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?



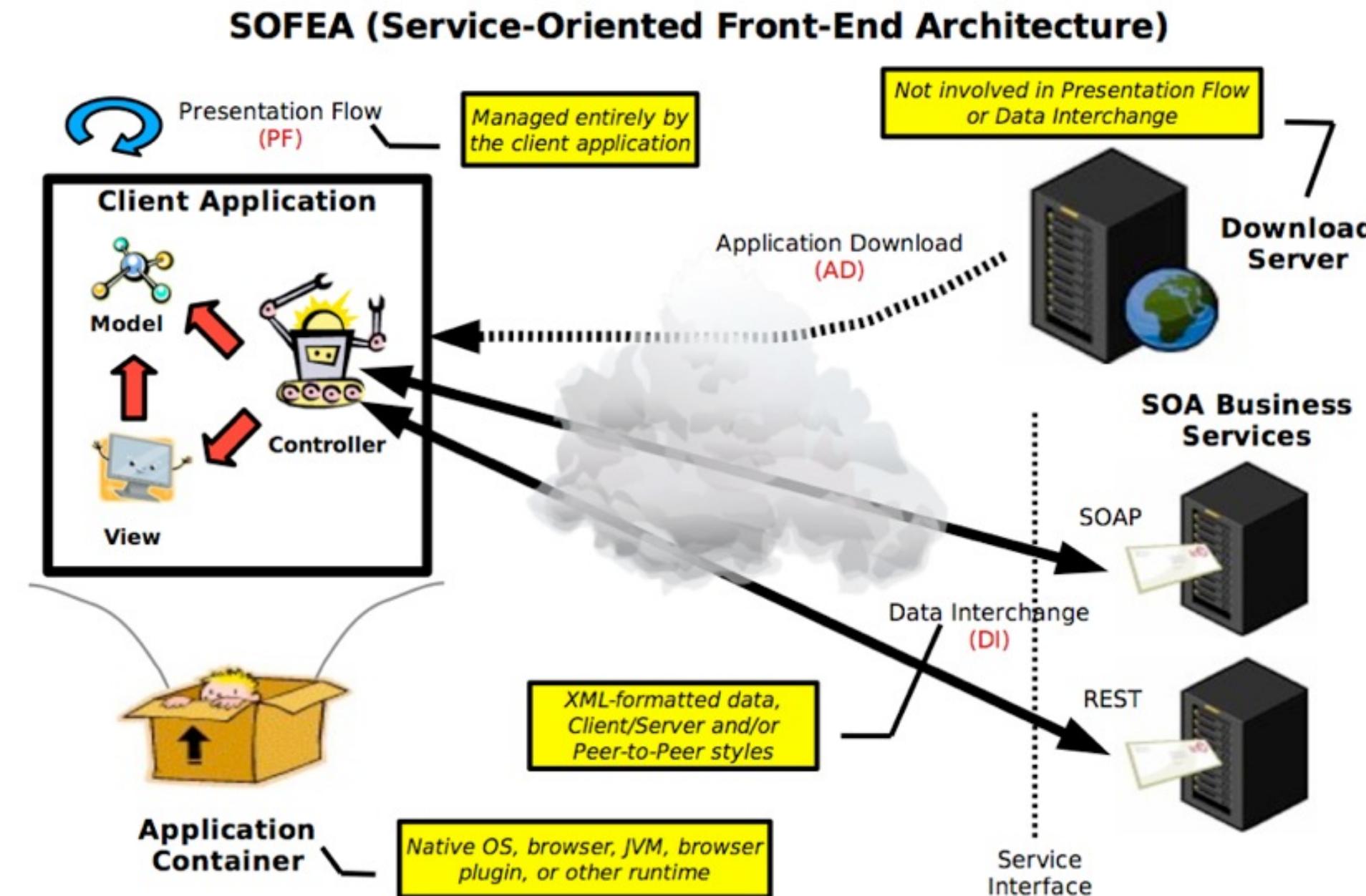
tapestry



Struts<sup>2</sup>



# Remember SOFEA?



# SOFEA became a Reality



BACKBONE.JS

JavaScript MVC



ANGULARJS

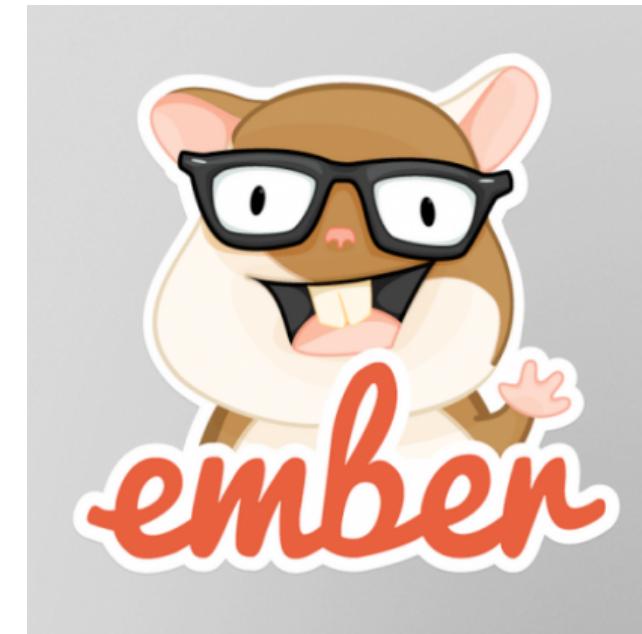
by Google™

SPROUTCORE

HTML



Cappuccino



Sencha Ext JS

PhoneGap

# SOFEA Performance Issues

The screenshot shows a blog post from a website. At the top left is a Twitter logo with the word "Engi". Below it is a small image of several people. The main title of the post is "Client-side MVC is not a silver bullet" in large red text. Below the title is the date "February 26th, 2013". The post begins with a note about it being an edited repost of a comment. It discusses the technical stack used for Charm, including Backbone.js, Underscore.js, Zepto, Rails 2.3, Postgres, memcached, redis, resque, and Sinatra. It then states: "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."

**TUESDAY, MAY 29, 2012**

**Improving pe**

To connect you to info we've been reviewing

**Our First No**

**Client-side MVC is not a silver bullet**

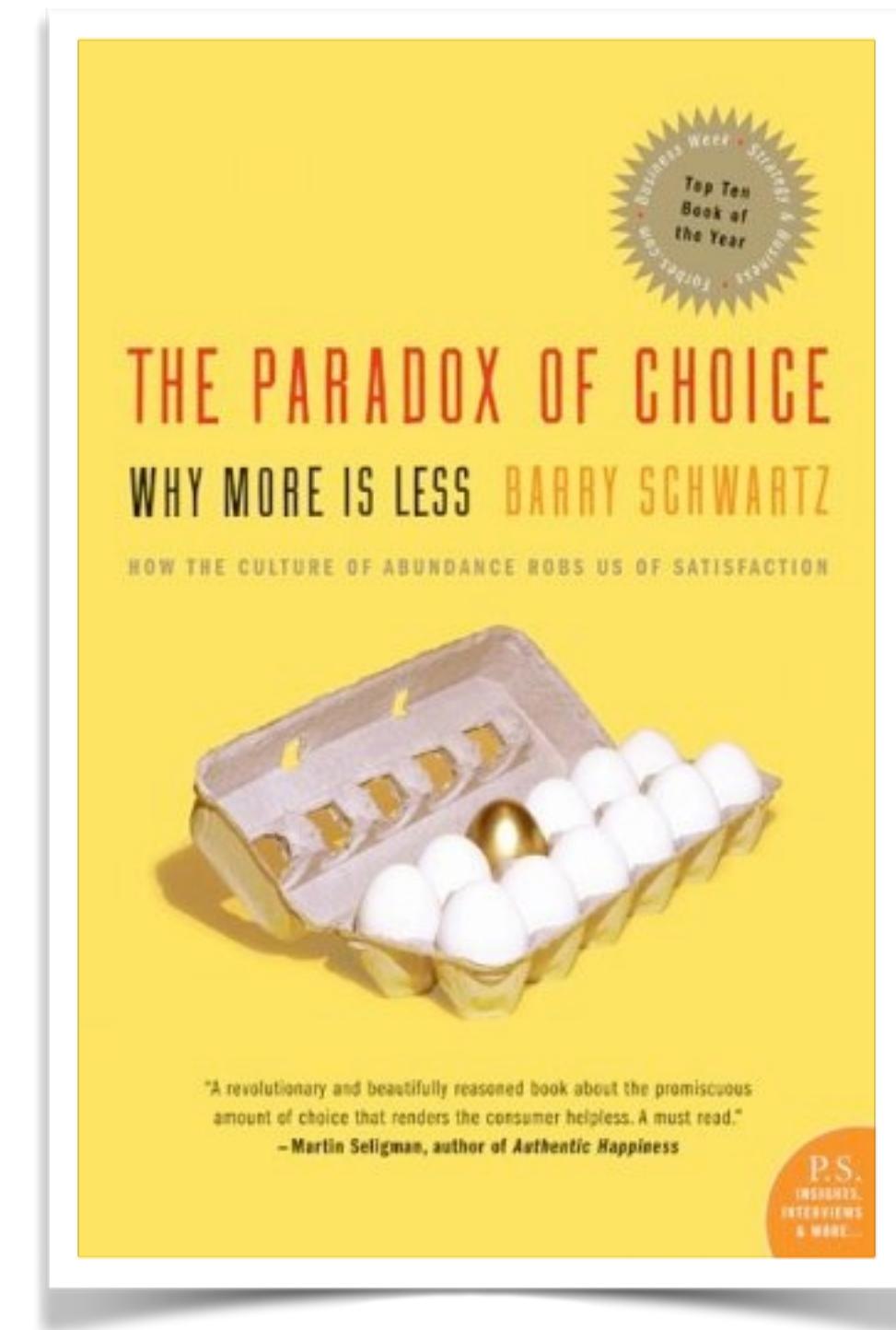
*This is an edited repost of a comment of mine on Amy's blog post about why we shut down Charm.*

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.

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



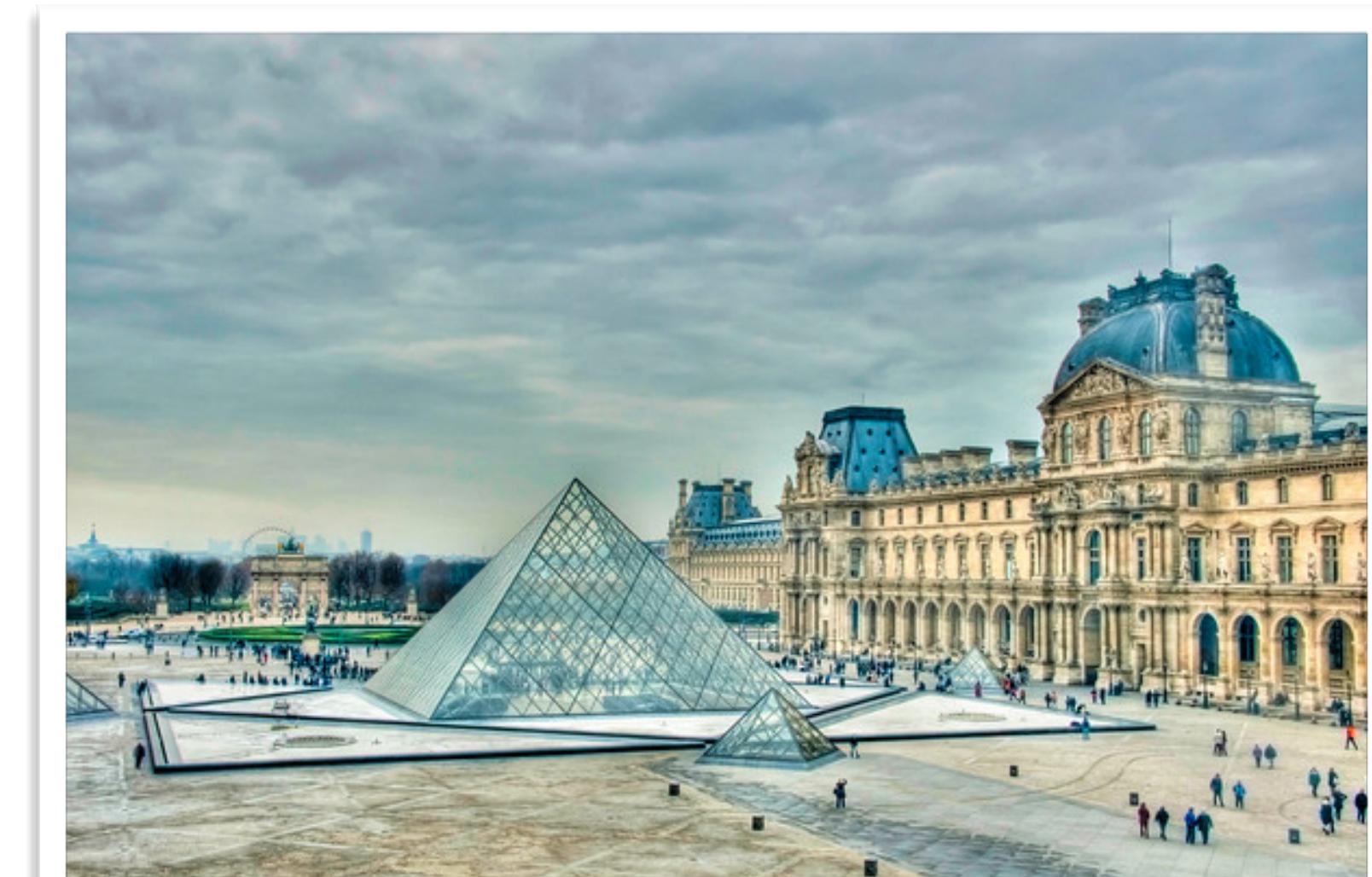
# The Real Problem





# 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 6
  - Community / Support
  - HTML5
  - REST
  - Mobile
  - Performance
  - Page Speed

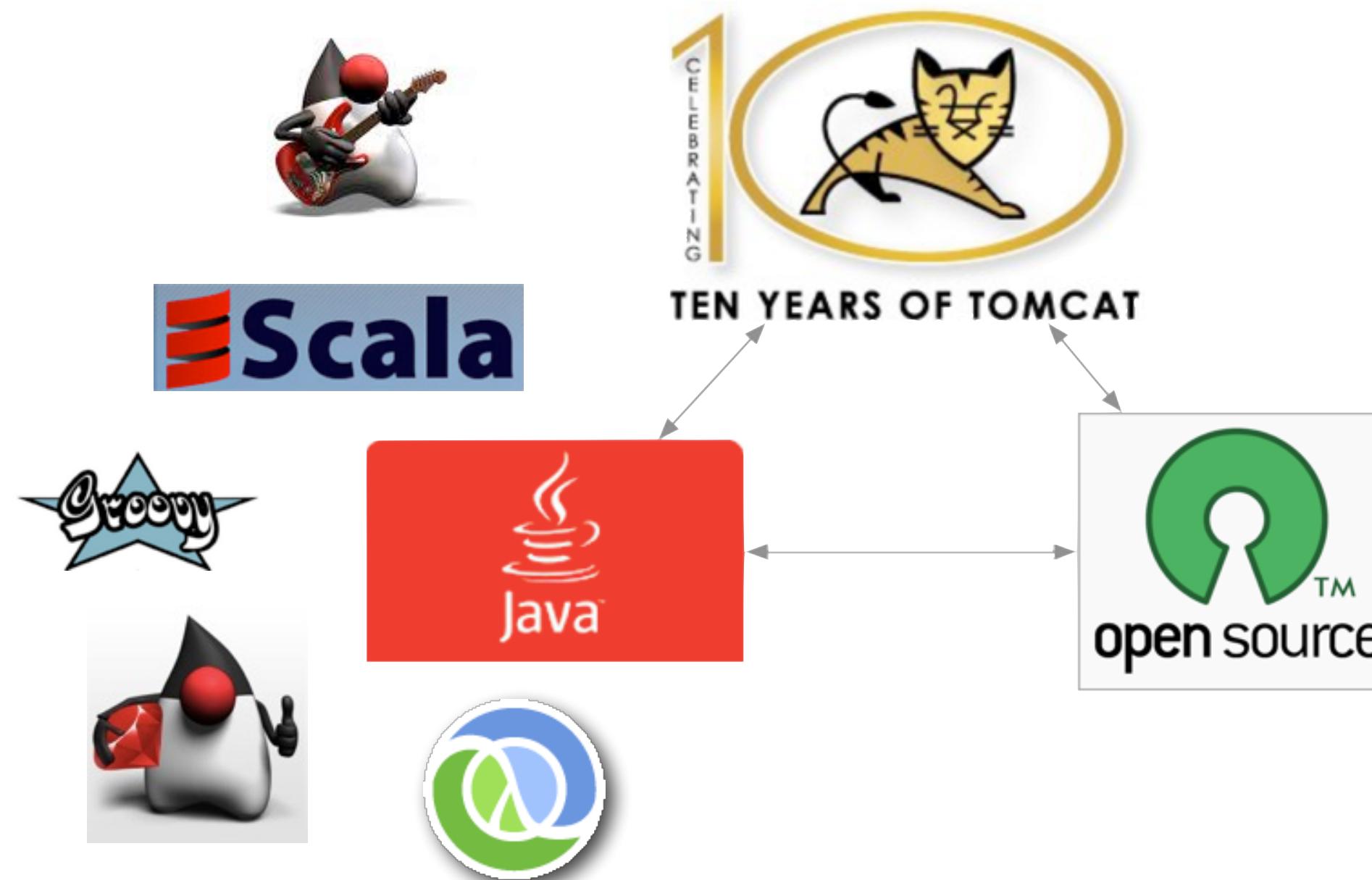


# Predetermined Constraints

- ▶ Language
- ▶ Platform
- ▶ Application Type



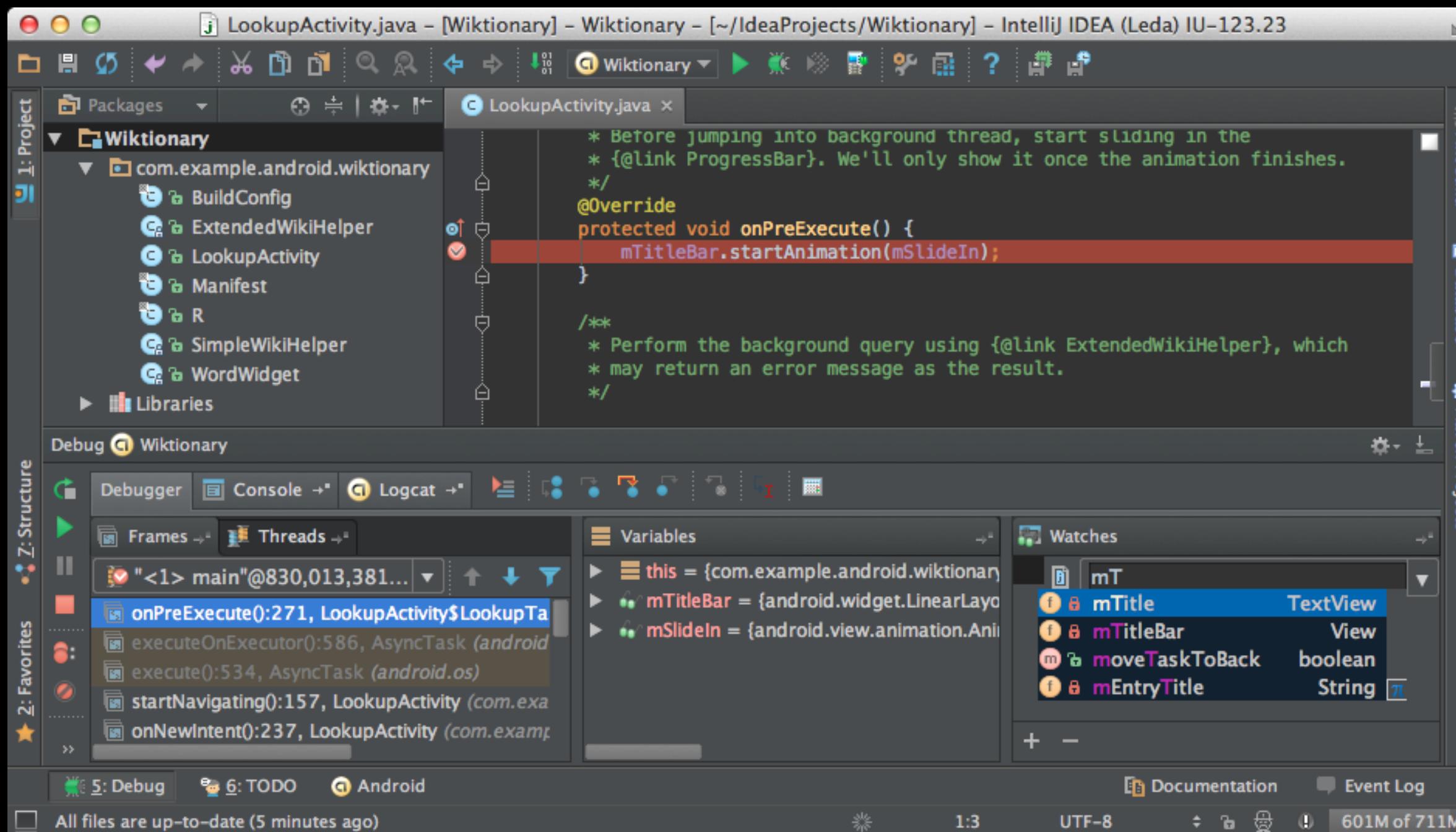
# Choose the JVM



# Get Fast Hardware

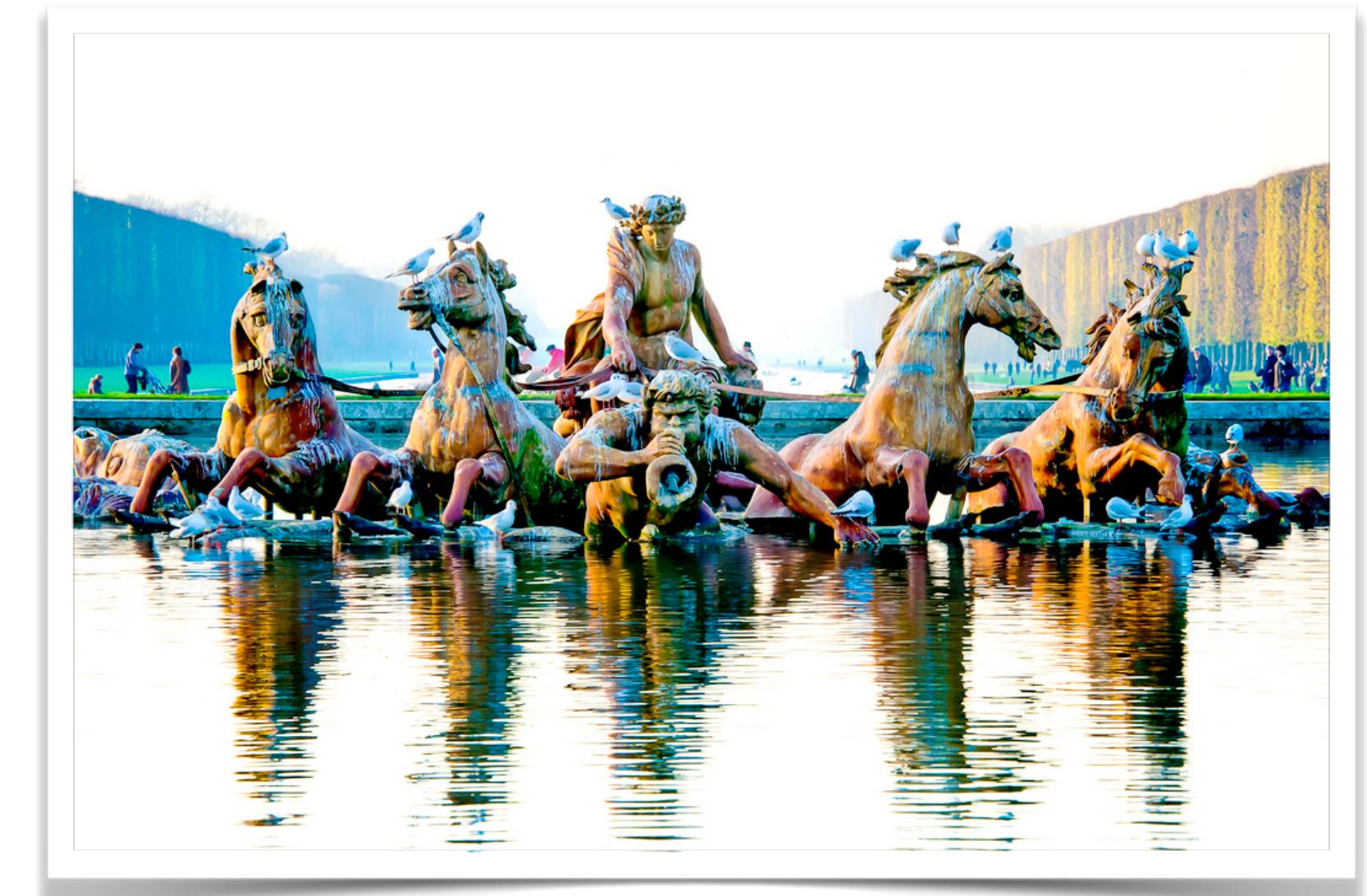


# IntelliJ

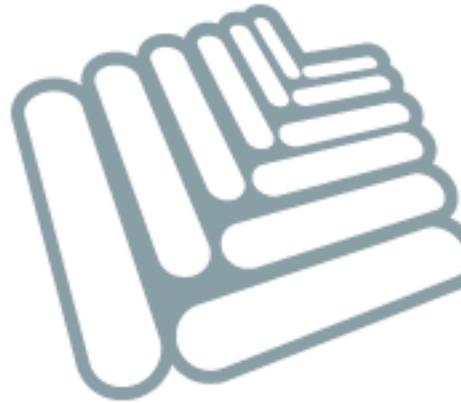


# Goals

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



# Full Stack Frameworks



# API Frameworks



Apache CXF

VERT.X



SPRING BOOT

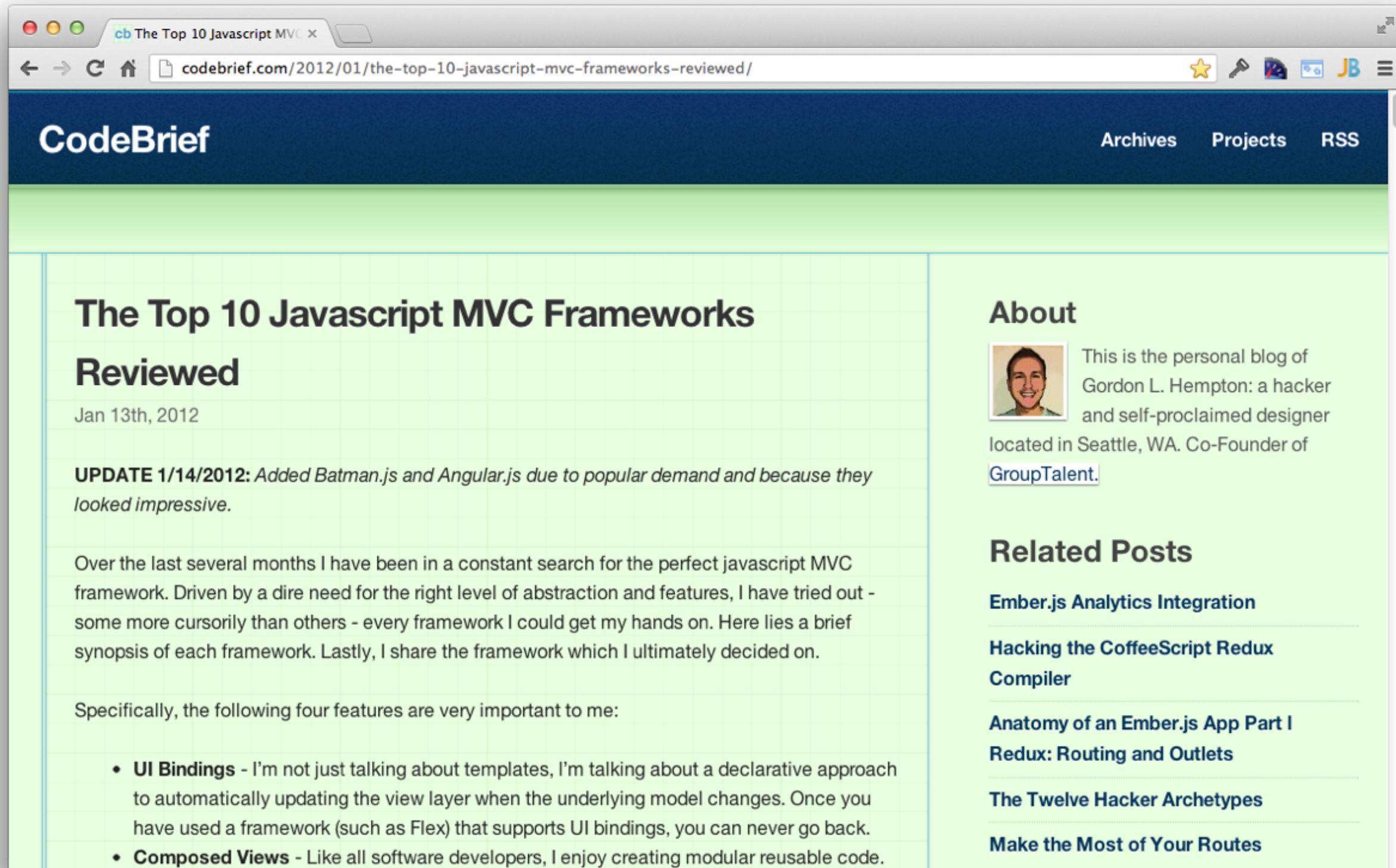
# JavaScript MVC Frameworks



Spine



# JavaScript MVC Frameworks



The screenshot shows a web browser window with the title bar "cb The Top 10 Javascript MVC x". The address bar contains "codebrief.com/2012/01/the-top-10-javascript-mvc-frameworks-reviewed/". The page itself has a dark blue header with the "CodeBrief" logo and navigation links for "Archives", "Projects", and "RSS". The main content area features a green background with a grid pattern. The title of the post is "The Top 10 Javascript MVC Frameworks Reviewed", dated "Jan 13th, 2012". A note at the top of the post says: "UPDATE 1/14/2012: Added Batman.js and Angular.js due to popular demand and because they looked impressive." The author's bio on the right includes a photo of Gordon L. Hempton, described as a hacker and self-proclaimed designer located in Seattle, WA, and co-founder of GroupTalent. The sidebar also lists several related posts.

## 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.

### 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](#)

# Pure JVM Web Frameworks

- ▶ 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

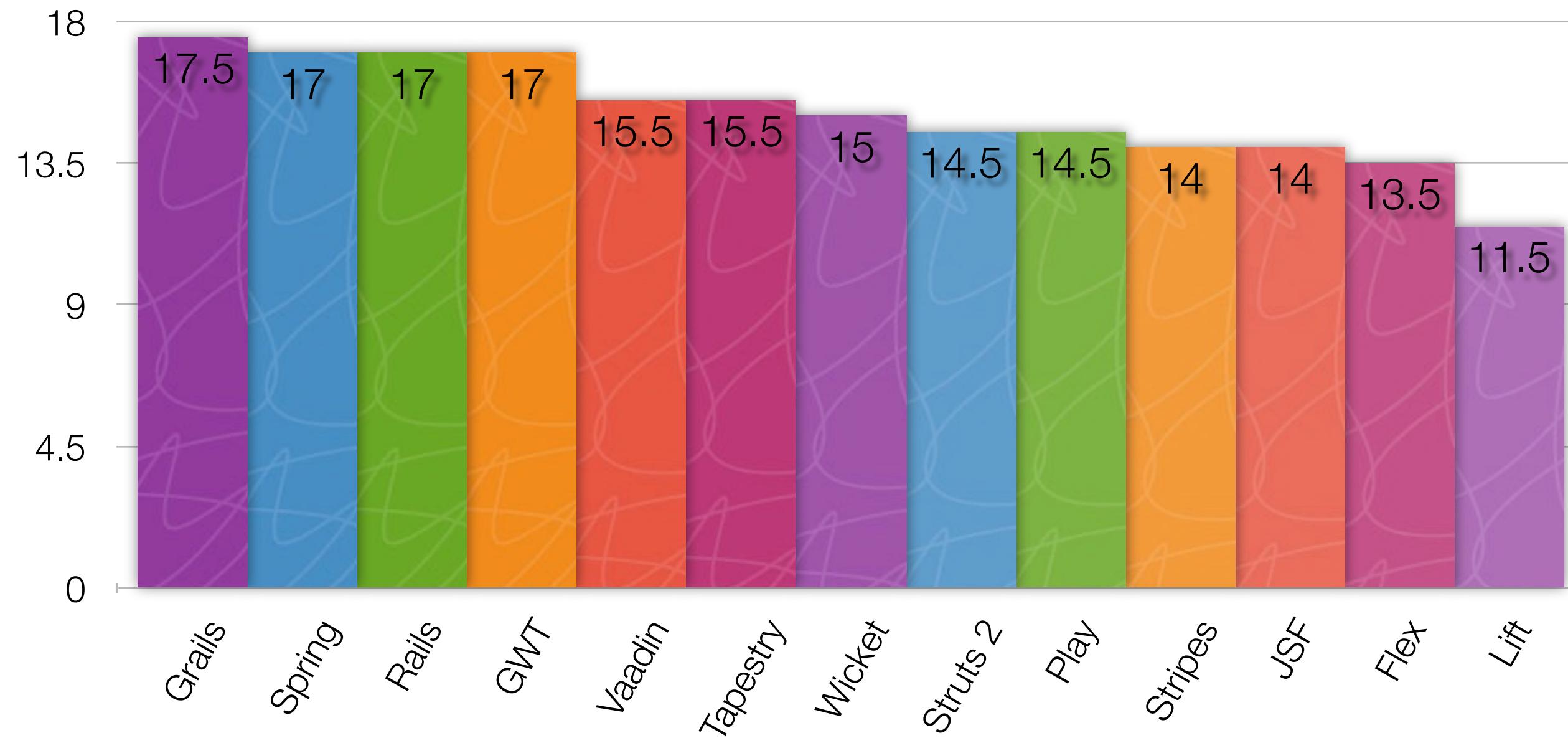
- Apache: **Wicket**, **Struts**, Sling, **Tapestry**, Click
- GWT: SmartGWT, **GXT**, Vaadin, Errai
- JSF: **Mojarra**, **MyFaces**, **Tomahawk**, IceFaces, RichFaces, **PrimeFaces**
- **Spring MVC**, **Stripes**, RIFE, ZK

# 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	0.50	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 I10n	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>	<b>14.5</b>	<b>17</b>	<b>15</b>	<b>14</b>	<b>15.5</b>	<b>14</b>	<b>17</b>	<b>17.5</b>	<b>17</b>	<b>13.5</b>	<b>15.5</b>	<b>11.5</b>	<b>14.5</b>

<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.

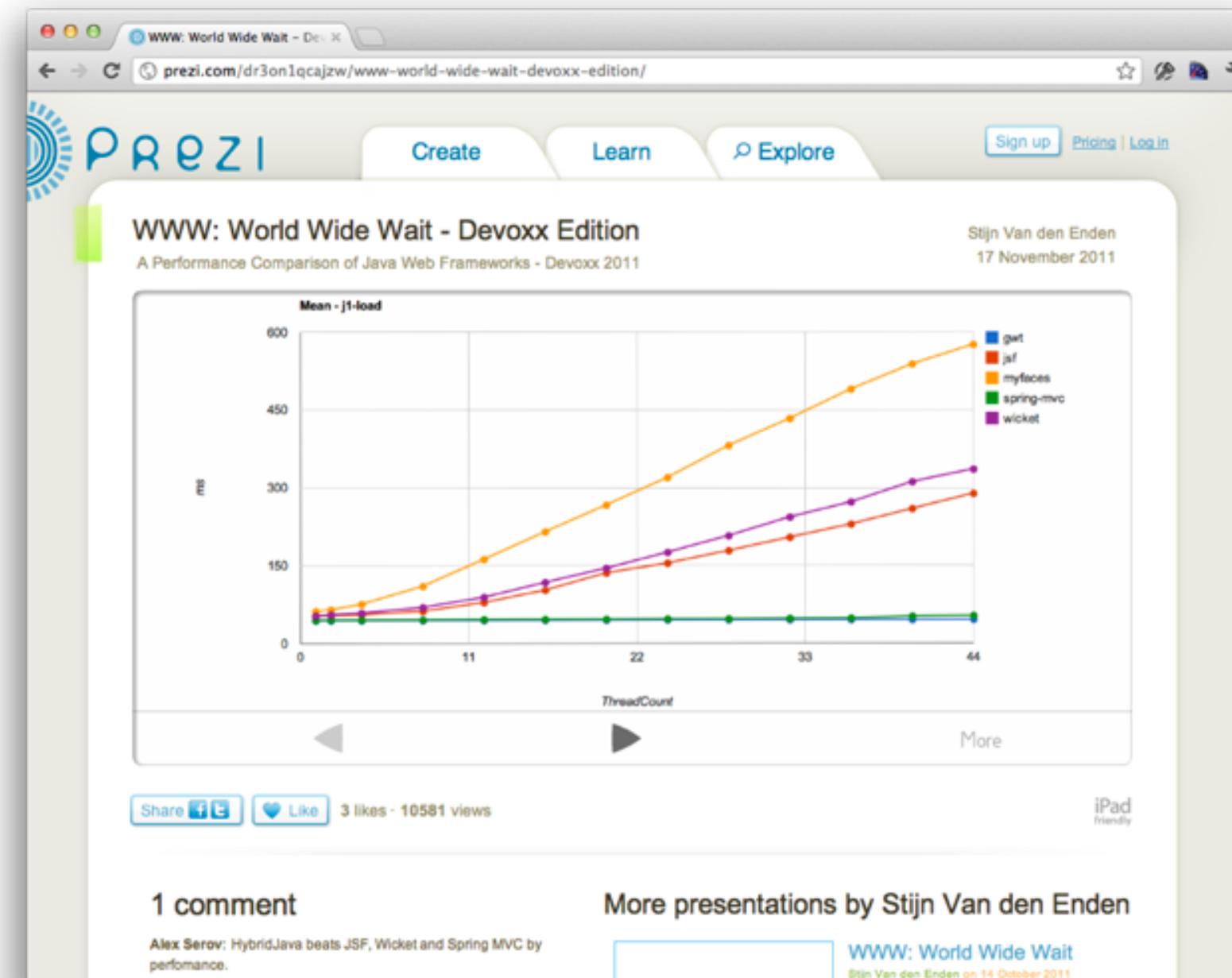
	Seam / JSF	Wicket
Heap Size (bytes)	23,947,512	9,496,312
Classes	6,344	4,489
Objects	585,123	179,028
Class Loaders	370	234

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

# Peter Thomas's Perfbench

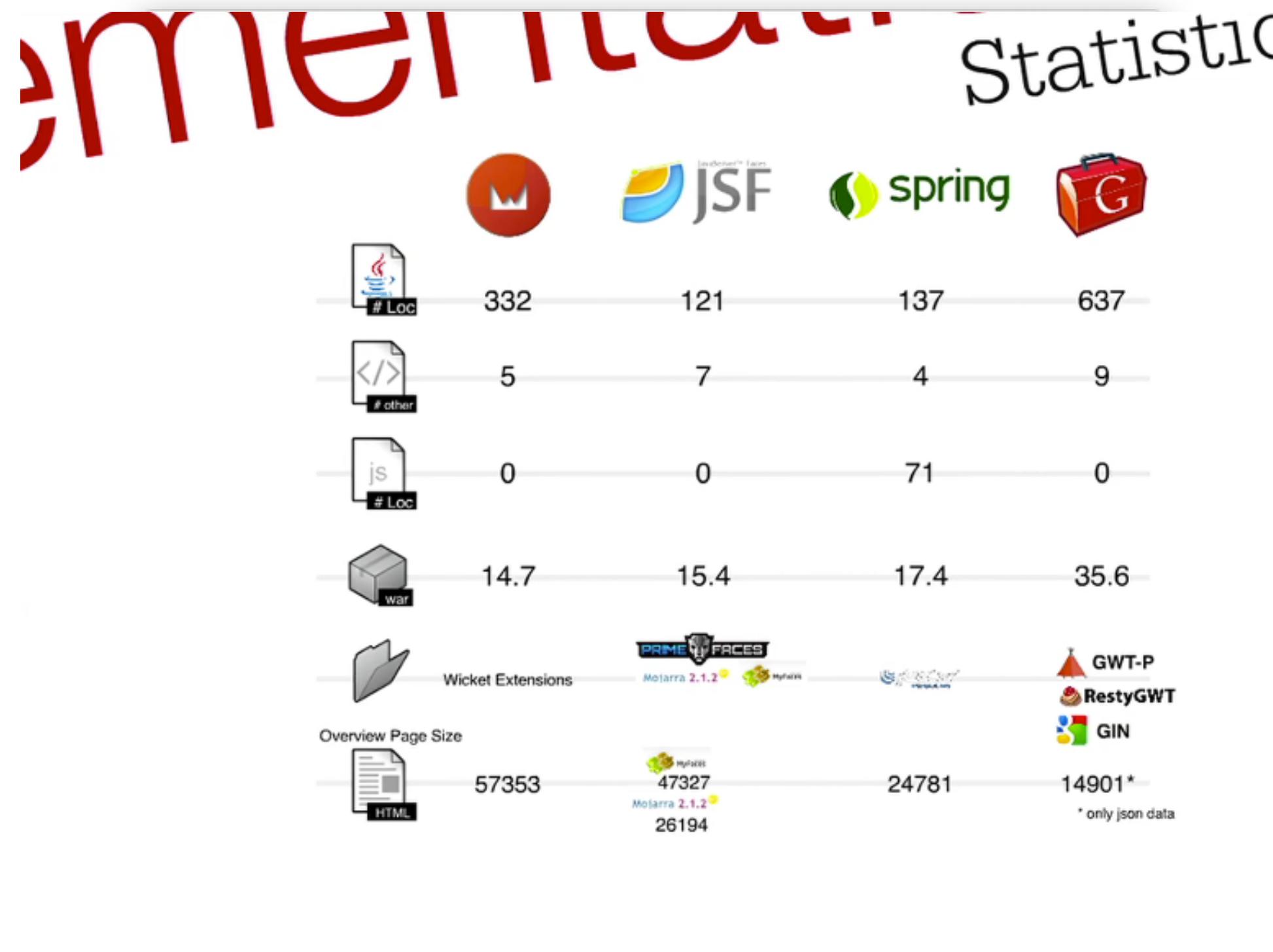
- ▶ Added Tapestry 5 and Grails in September 2009:
  - Grails was far more productive than Tapestry 5.
  - Grails still has some ways to go in terms of performance.
  - Overall, Wicket is fastest, with Tapestry coming a close second.
  - Wicket takes up the least amount of heap.
  - Session usage of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

# World Wide Wait - Devoxx



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

# World Wide Wait - Devoxx



# World Wide Wait - Devoxx

> 16 GB of data

# World Wide Wait - Devoxx

>700 hours of test runs

# World Wide Wait - Devoxx



# 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 a web browser displaying the DevRates website at [devrates.com/project/list?query=%5Bweb+framework%5D](http://devrates.com/project/list?query=%5Bweb+framework%5D). The page is titled '[web framework]' and features a navigation bar with links for Projects, Stats, Stacks, Users, Blog, Details, About, Register, and Sign in. Below the navigation is a search bar with filters for name, rating, popular, and recent.

The main content area displays a grid of project cards. The projects listed are:

- Grails**: Java web development framework. Overall rating: 9.3. Last release: 2.2.4, 6 months ago. Technologies: web framework, rad, java, groovy, mvc.
- PrimeFaces**: Open source JSF component suite. Overall rating: 9.0. Last release: 4.0, 4 months ago. Technologies: web framework, jsf, java, component.
- Vaadin**: Web application framework for Rich Internet Applications (RIA). Overall rating: 8.5. Last release: 7.0.0, 1 year ago. Technologies: web framework, java, ui, ajax.
- Tapestry**: Apache Tapestry open-source framework. Overall rating: 8.2. Last release: 5.3.6, 1 year ago. Technologies: web framework, java, mvc.
- Rails**: Ruby on Rails web framework. Overall rating: 9.3. Last release: 4.2.1, 6 months ago. Technologies: web framework, rails, ruby, mvc.
- Play**: High-productivity Java and Scala web application framework. Overall rating: 9.0. Last release: 2.3.1, 4 months ago. Technologies: web framework, play, scala.
- Django**: High-level Python Web framework. Overall rating: 8.5. Last release: 1.7.1, 1 year ago. Technologies: web framework, python, django.
- ExtJS**: JavaScript framework for building rich user interfaces. Overall rating: 8.2. Last release: 4.2.1, 1 year ago. Technologies: web framework, javascript, extjs.

# devrates.com - popular

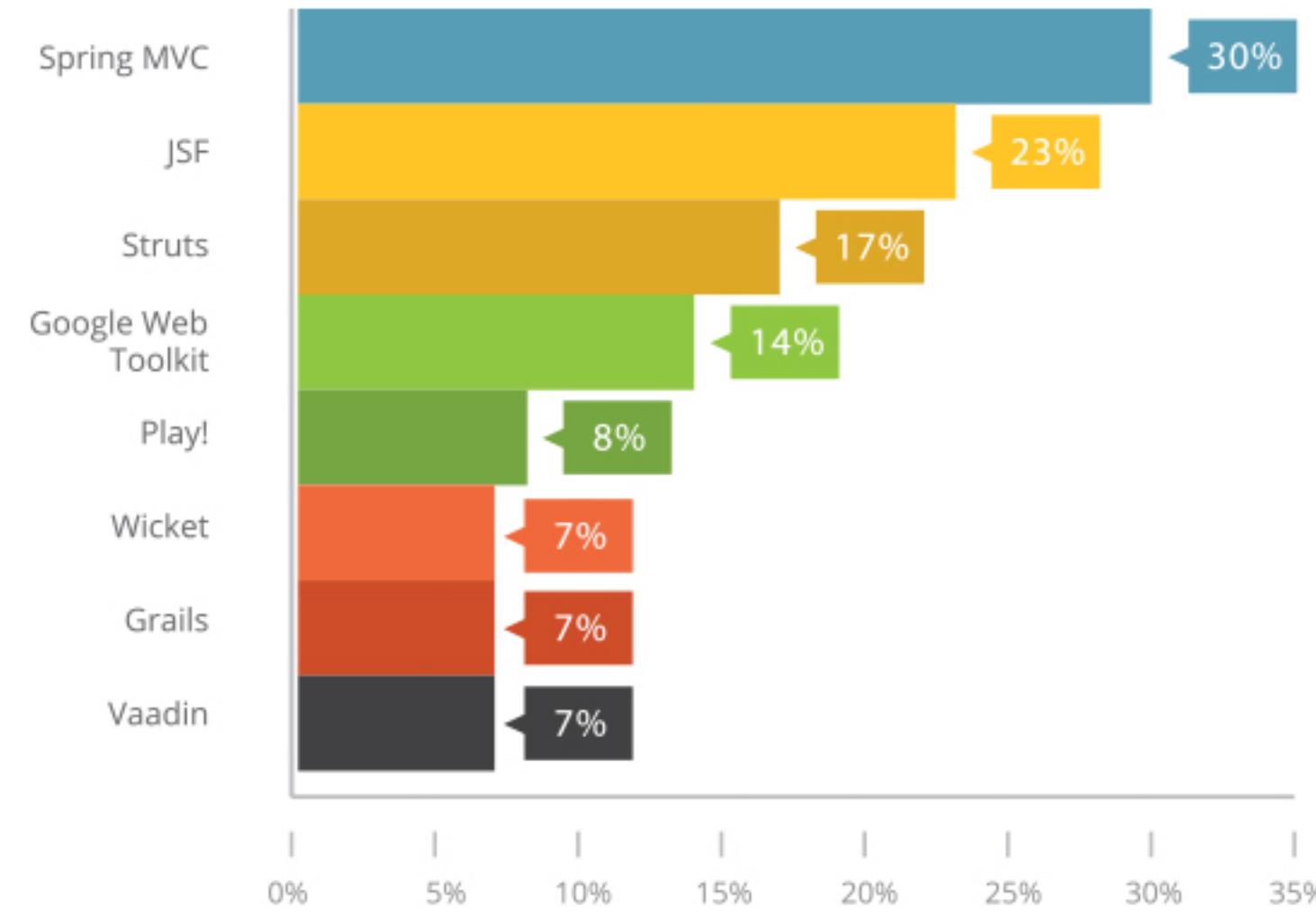
The screenshot shows a web browser displaying the DevRates website at [devrates.com/project/list/popular?query=%5Bweb+framework%5D](http://devrates.com/project/list/popular?query=%5Bweb+framework%5D). The page title is "DevRates | Open source re..." and the URL is "devrates.com/project/list/popular?query=%5Bweb+framework%5D". The navigation bar includes links for "Projects", "Stats", "Stacks", "Users", and "Blog". A search bar contains the query "[web framework]". Social media links for Facebook and Twitter are present, along with "Details", "About", "Register", and "Sign in" buttons.

The main content area is titled "PROJECTS" and displays six project cards:

- Grails**: Java web development framework. Overall rating: 9.3. Last release: 2.2.4 (6 months ago). Tags: web framework, rad, java, groovy, mvc.
- PrimeFaces**: Open source JSF component suite. Overall rating: 9.0. Last release: 4.0 (4 months ago). Tags: web framework, jsf, java, component.
- GWT**: Google Web Toolkit. Overall rating: 7.0. Last release: 2.5.1 (10 months ago). Tags: web framework, java, ajax.
- Play**: High-productivity Java and Scala web application framework. Overall rating: 8.1. Last release: 2.1.0 (11 months ago). Tags: web framework, java, scala, mvc.
- Vaadin**: Web application framework for Rich Internet Applications (RIA). Overall rating: 9.3. Last release: 2.2.4 (6 months ago). Tags: web framework, rad, java, groovy, mvc.
- RichFaces**: Advanced UI component framework for easily integrating Ajax capabilities. Overall rating: 7.0. Last release: 4.0 (4 months ago). Tags: web framework, jsf, java.
- Rails**: Apache Struts web framework. Overall rating: 8.1. Last release: 2.1.0 (11 months ago). Tags: web framework, java, scala, mvc.
- Struts**: Apache Struts web framework. Overall rating: 8.1. Last release: 2.1.0 (11 months ago). Tags: web framework, java, scala, mvc.

Filter buttons at the top right allow sorting by "name", "rating", "popular", and "recent".

# REBELLABS developer productivity report



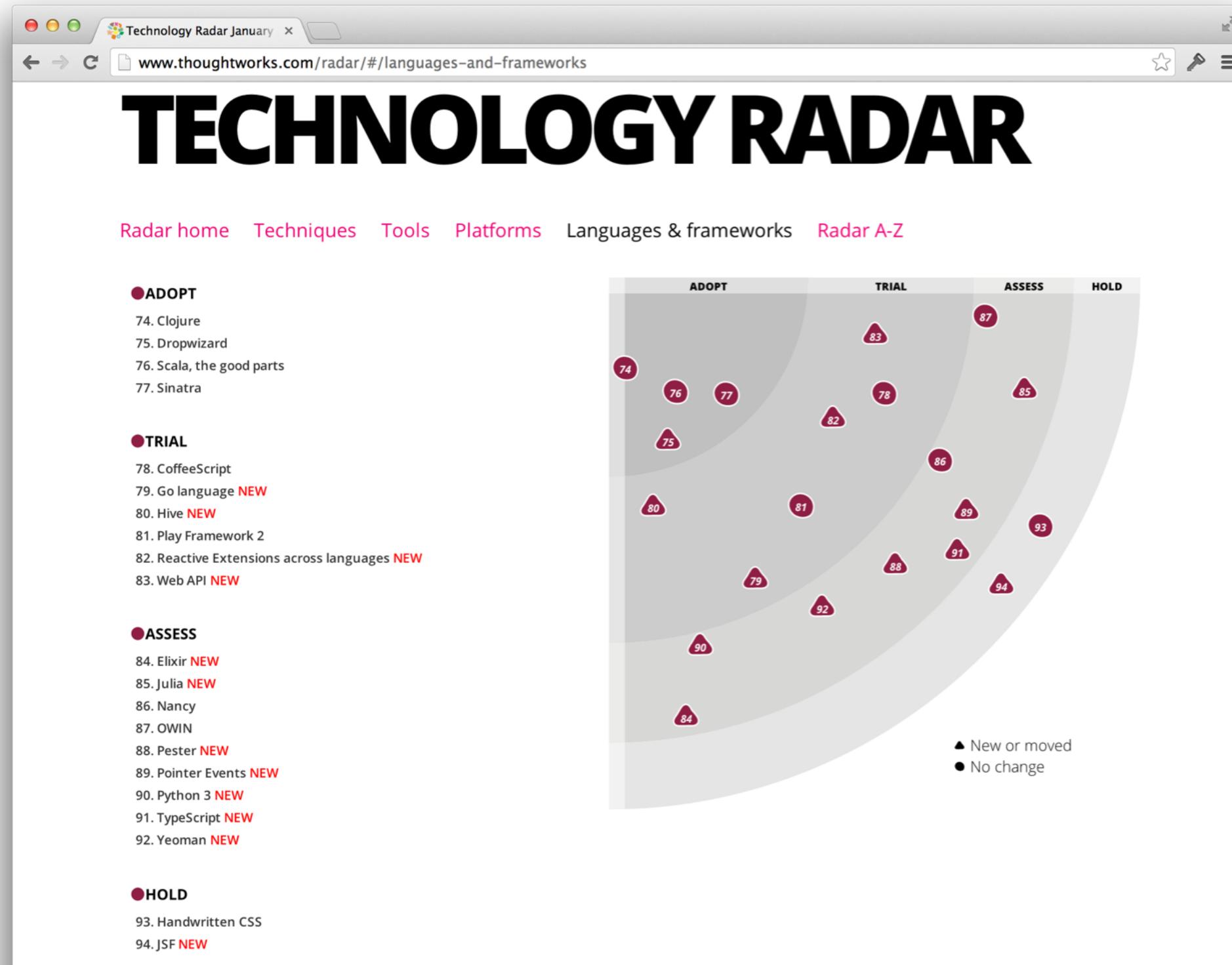
- ▶ Rapid Prototyping: Grails and Play
- ▶ Framework Complexity: Vaadin, GWT and Struts
- ▶ Ease of Use: Grails and Vaadin
- ▶ Documentation & Community: Grails and Vaadin
- ▶ Throughput/Scalability: Play
- ▶ UX, Look and Feel: Vaadin and GWT
- ▶ <http://bit.ly/1eP5Jgq>

The Vaadin logo features the word 'vaadin' in a large, bold, black sans-serif font. To the right of the text is a large, light blue curly brace character '}' and a light blue arrow character '>' pointing to the right.

“If you are going to choose one framework to rule them all, then we recommend **Vaadin**, **Grails** or **Play** as our top 3 choices, but if you want to synergize (ooh, 90s buzz word!) the benefits of multiple frameworks, then **Spring** plus nearly any other framework we covered (especially GWT, which saw the greatest gains) will yield the best results.” — <http://bit.ly/1emanaA>



# ThoughtWorks Technology Radar 2014



# ThoughtWorks on JSF

“We continue to see teams run into trouble using JSF -- JavaServer Faces -- and are recommending you avoid this technology.”

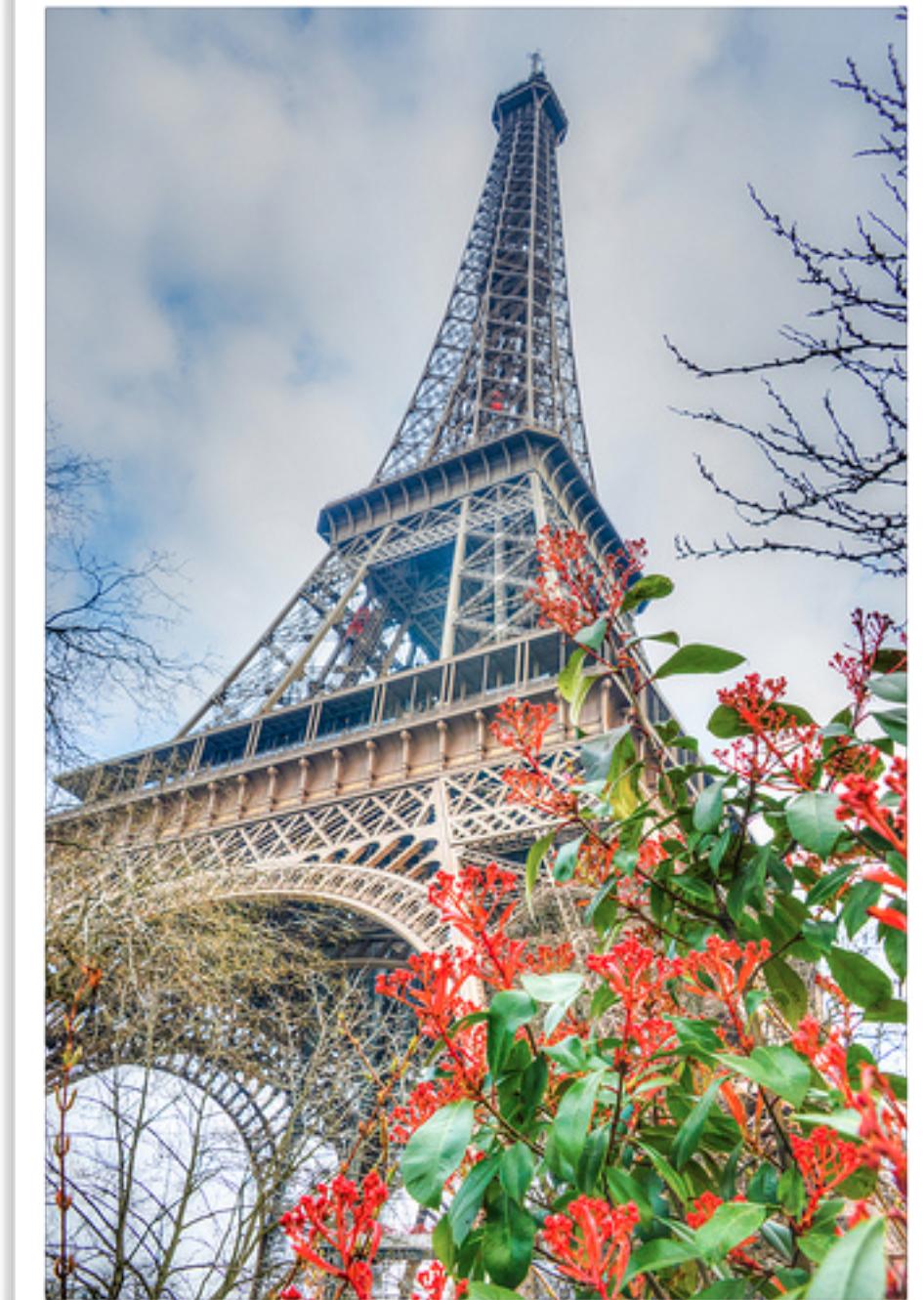
“We think JSF is flawed because it tries to abstract away HTML, CSS and HTTP, exactly the reverse of what modern web frameworks do.”

“We are aware of the improvements in JSF 2.0, but think the model is fundamentally broken.”

<http://www.thoughtworks.com/radar/#/languages-and-frameworks/683>

# 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:
  - Grails, PrimeFaces, Vaadin, Tapestry, Rails
- ▶ RebelLabs: Vaadin, Play, Grails, Spring MVC

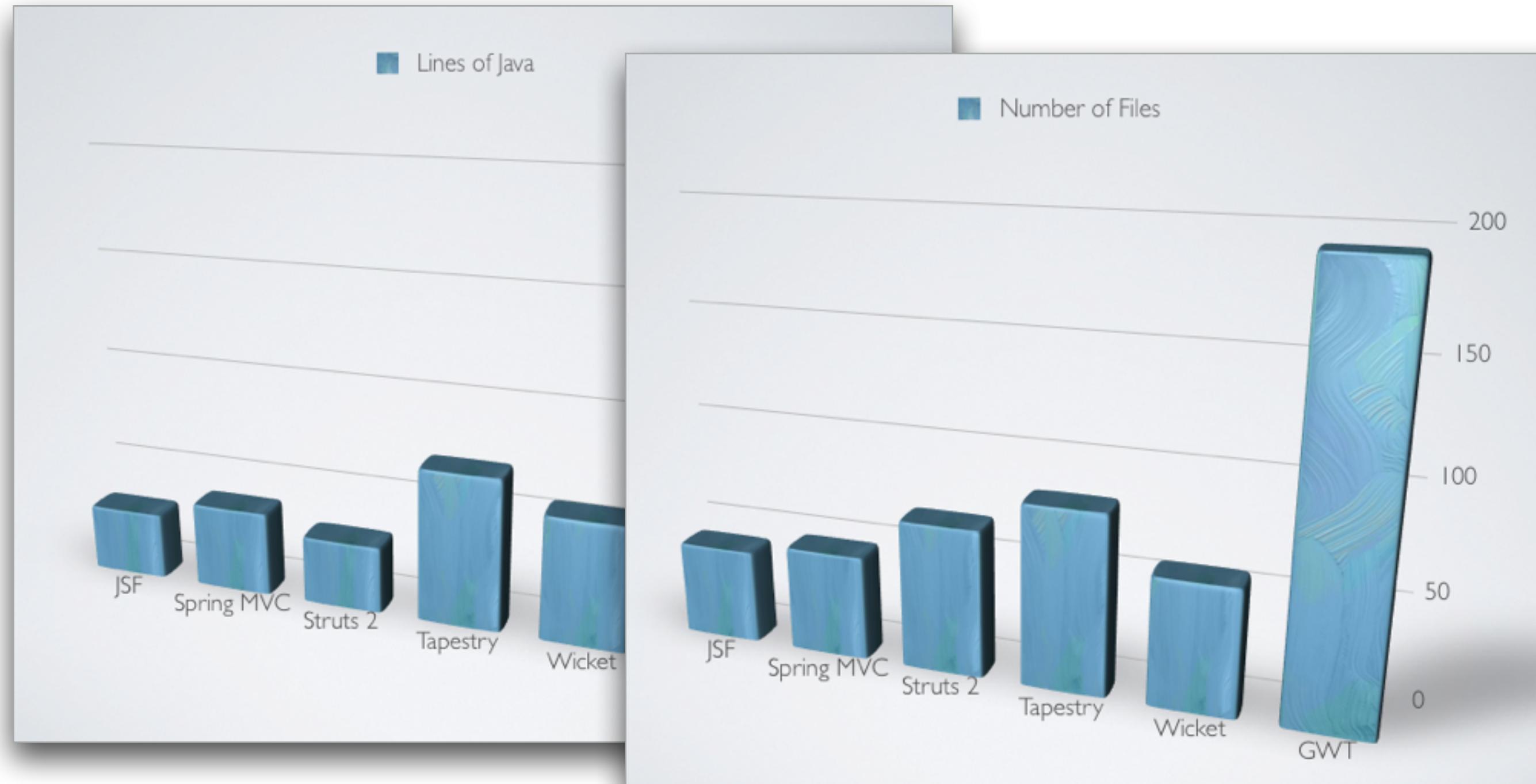


# Raible's Recommendations

- ▶ Full Stack: Choose by language (Ruby, Groovy, Java, or Scala)
- ▶ Pure Web Framework: Spring MVC, Struts 2, Tapestry, Wicket, or Vaadin
- ▶ JavaScript MVC: Angular JS, Ember, or Backbone
- ▶ API Framework: Dropwizard or Spring Boot

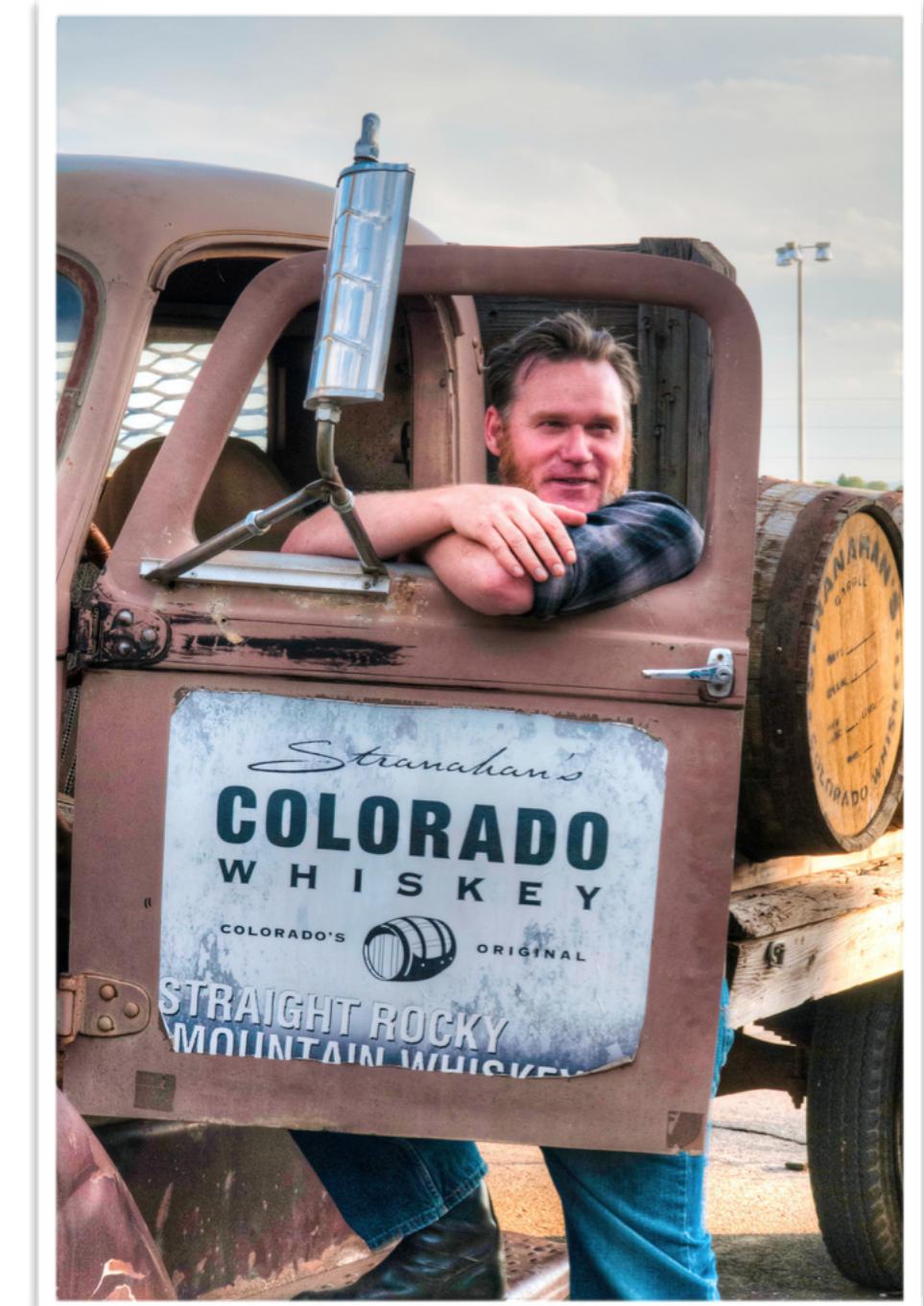


# The Problem with GWT



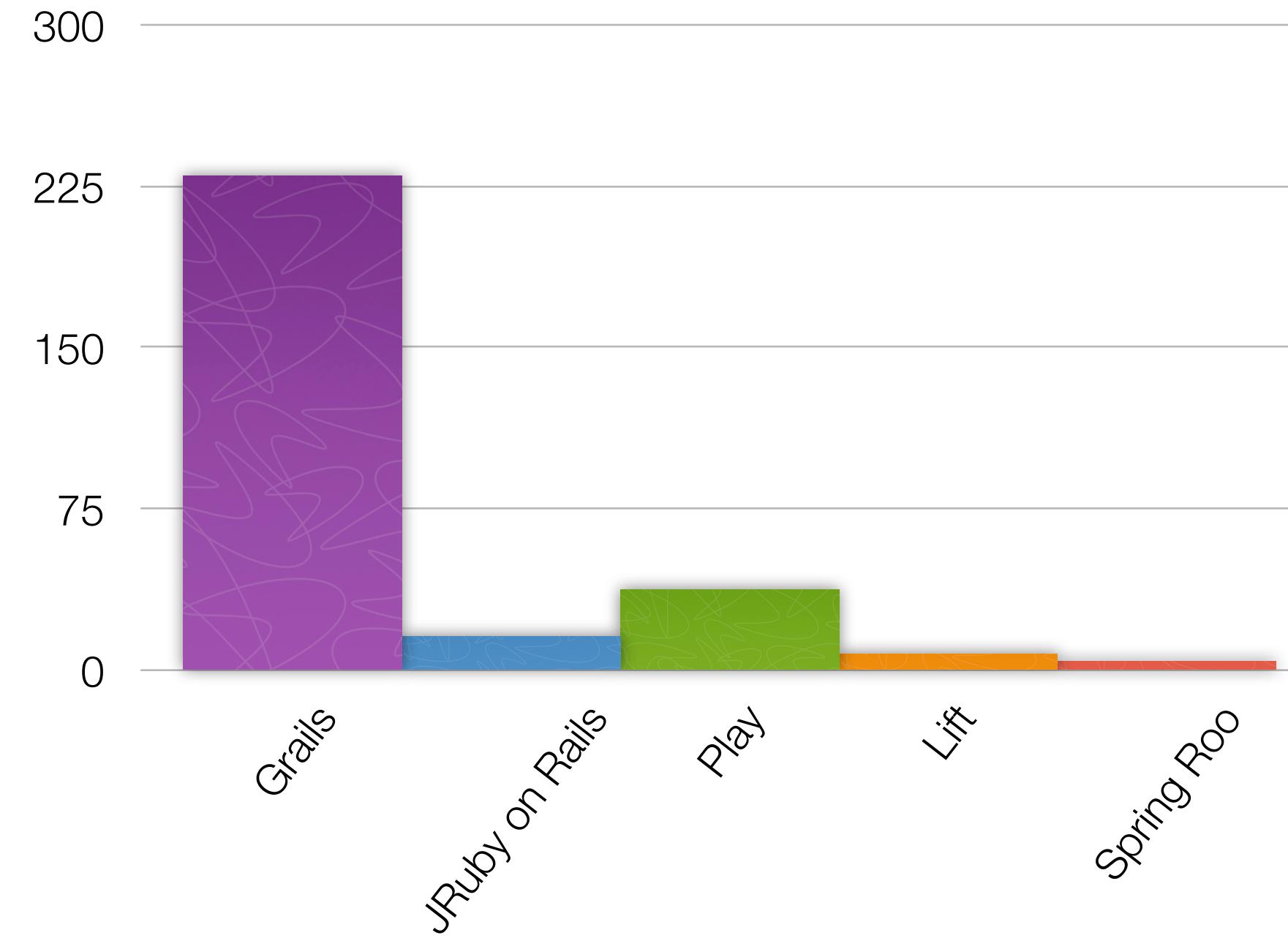
# Comparison Statistics

- ▶ Elimination Criteria
  - At least 1 release in 2013
  - At least 1 book on Amazon
  - At least 10 jobs on dice.com
  - At least 250 questions on Stack Overflow



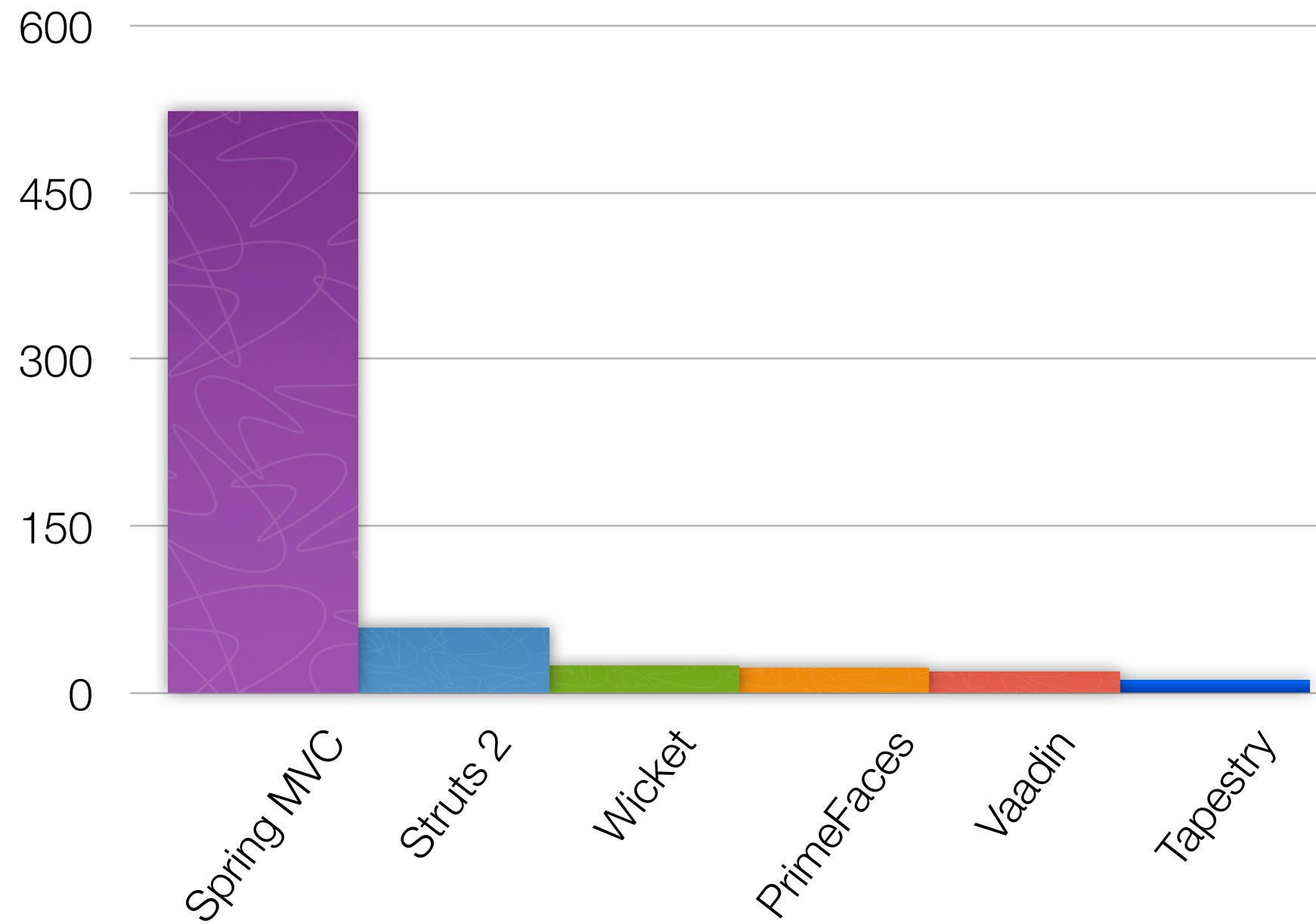
# Jobs on Dice.com

**Full Stack Frameworks, February 2014**



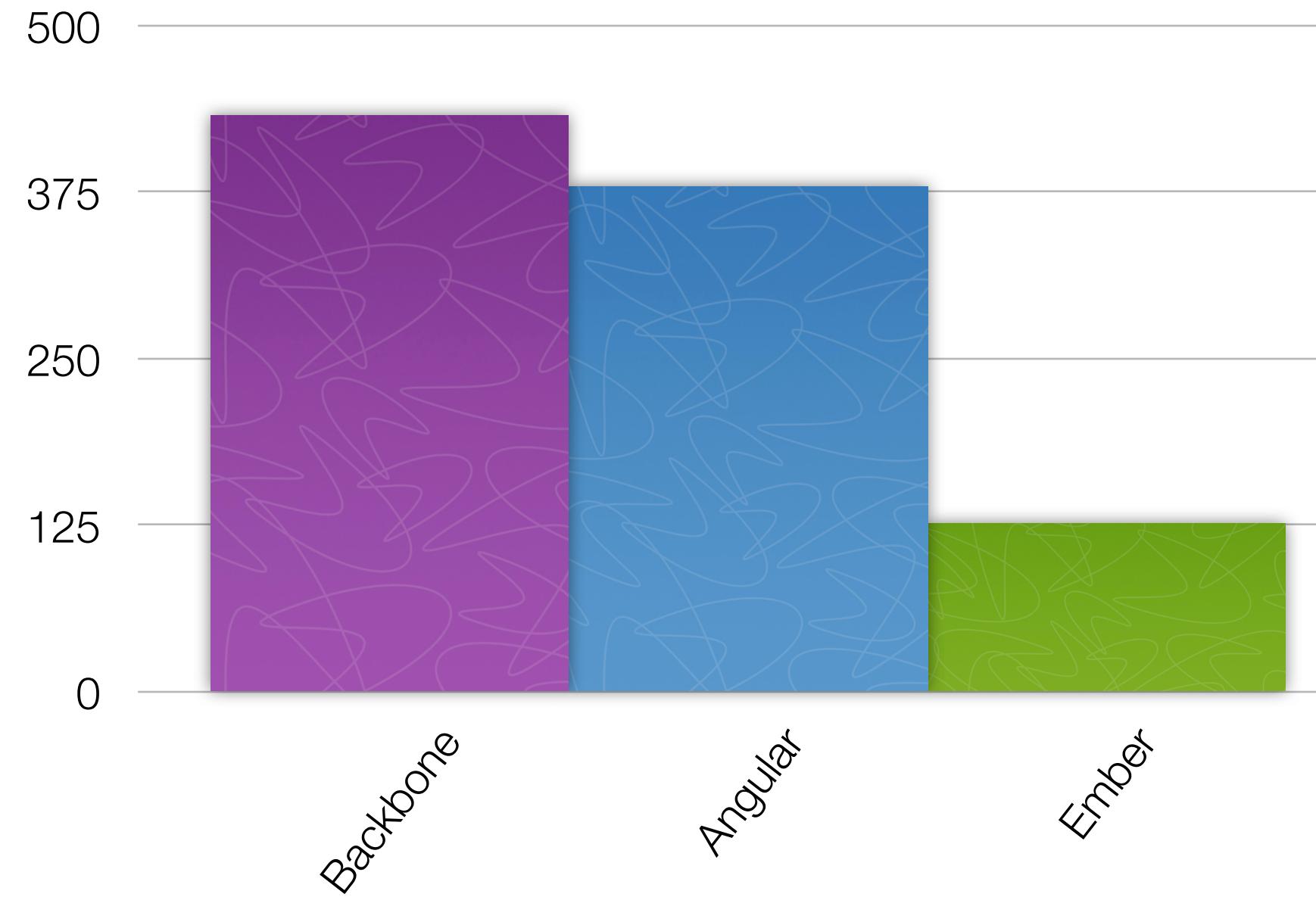
# Jobs on Dice.com

Pure Web Frameworks, February 2014



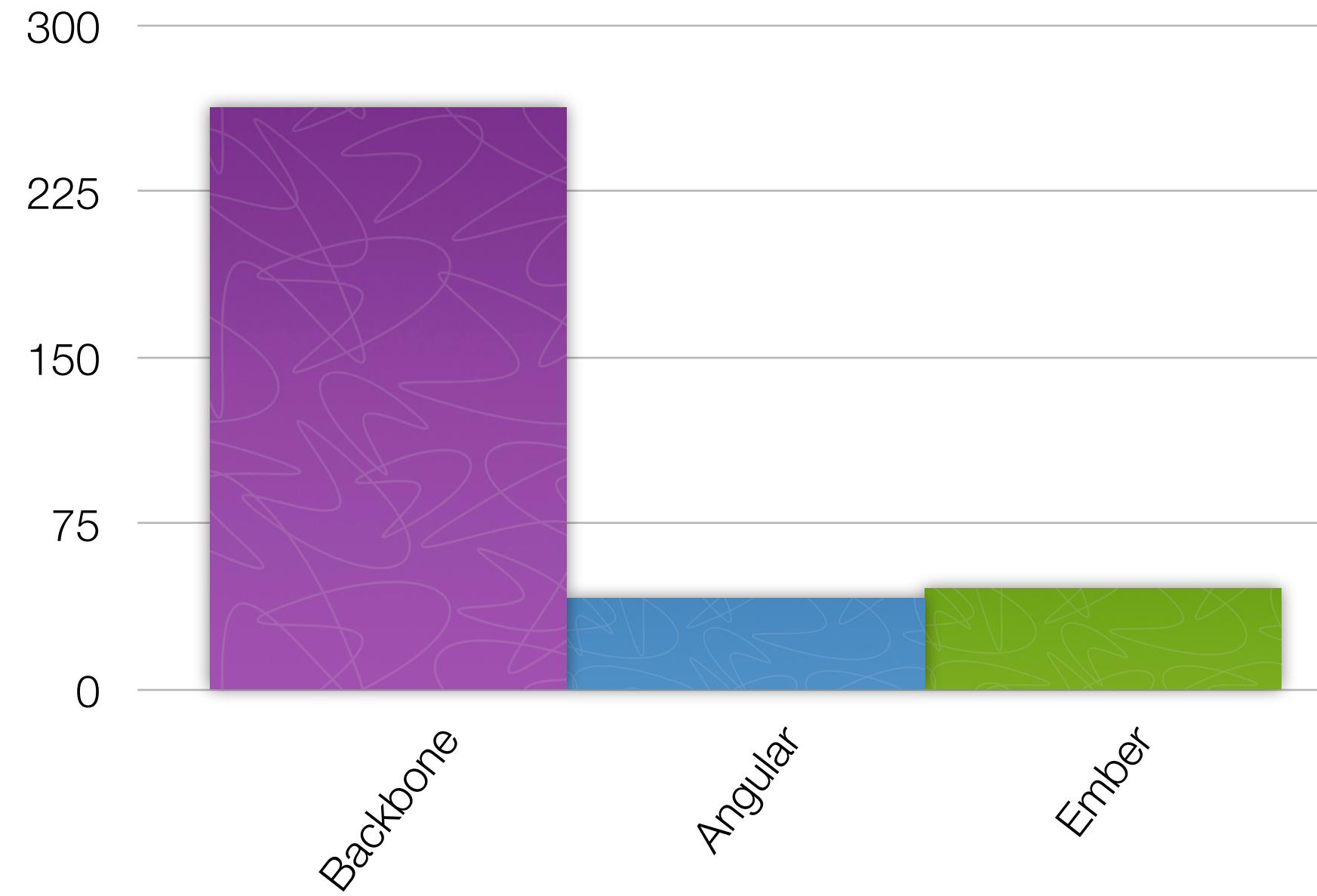
# Jobs on Dice.com

**JavaScript MVC Frameworks, February 2014**



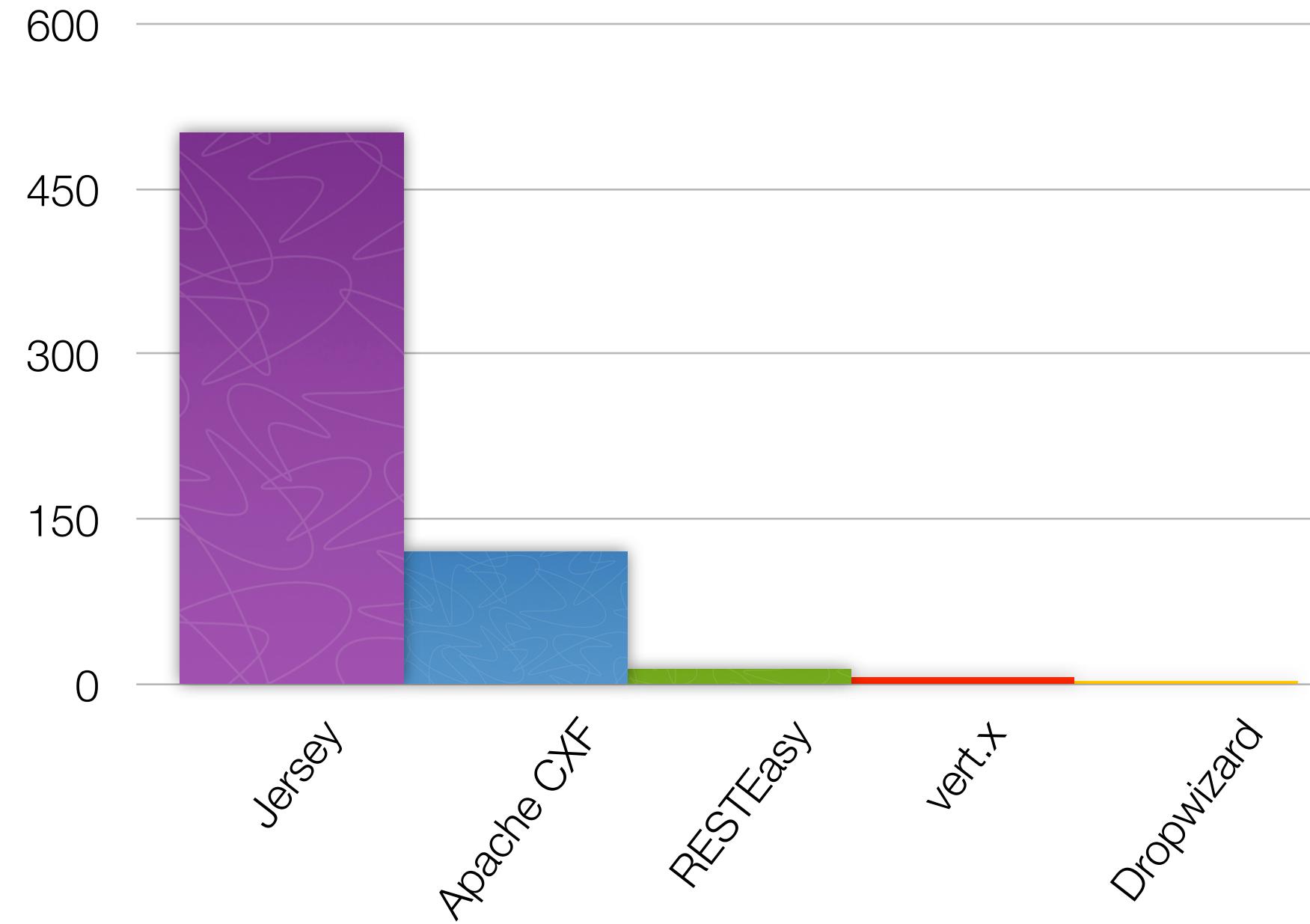
# Jobs on Dice.com

**JavaScript MVC Frameworks, March 2013**



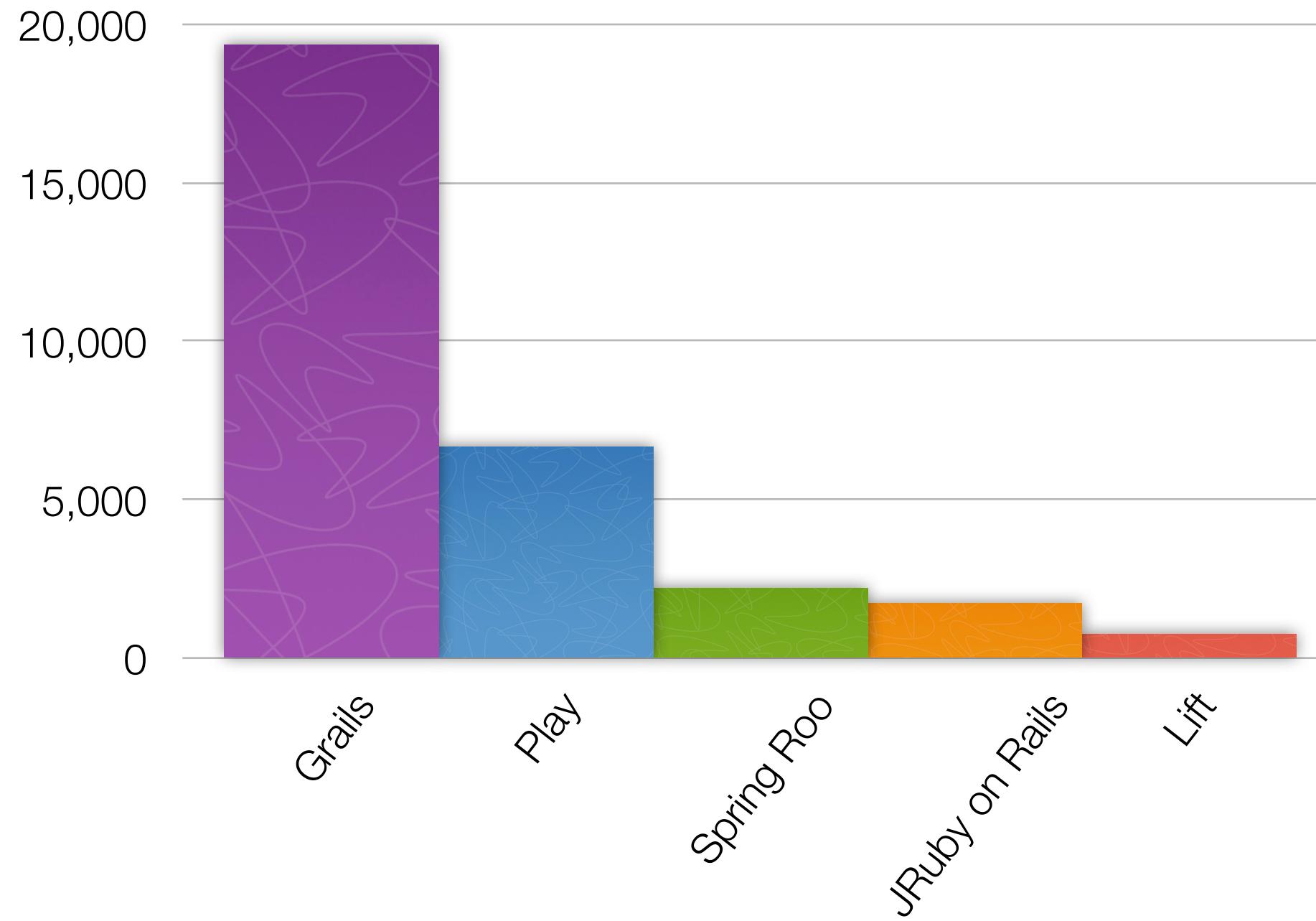
# Jobs on Dice.com

**JVM API Frameworks, February 2014**



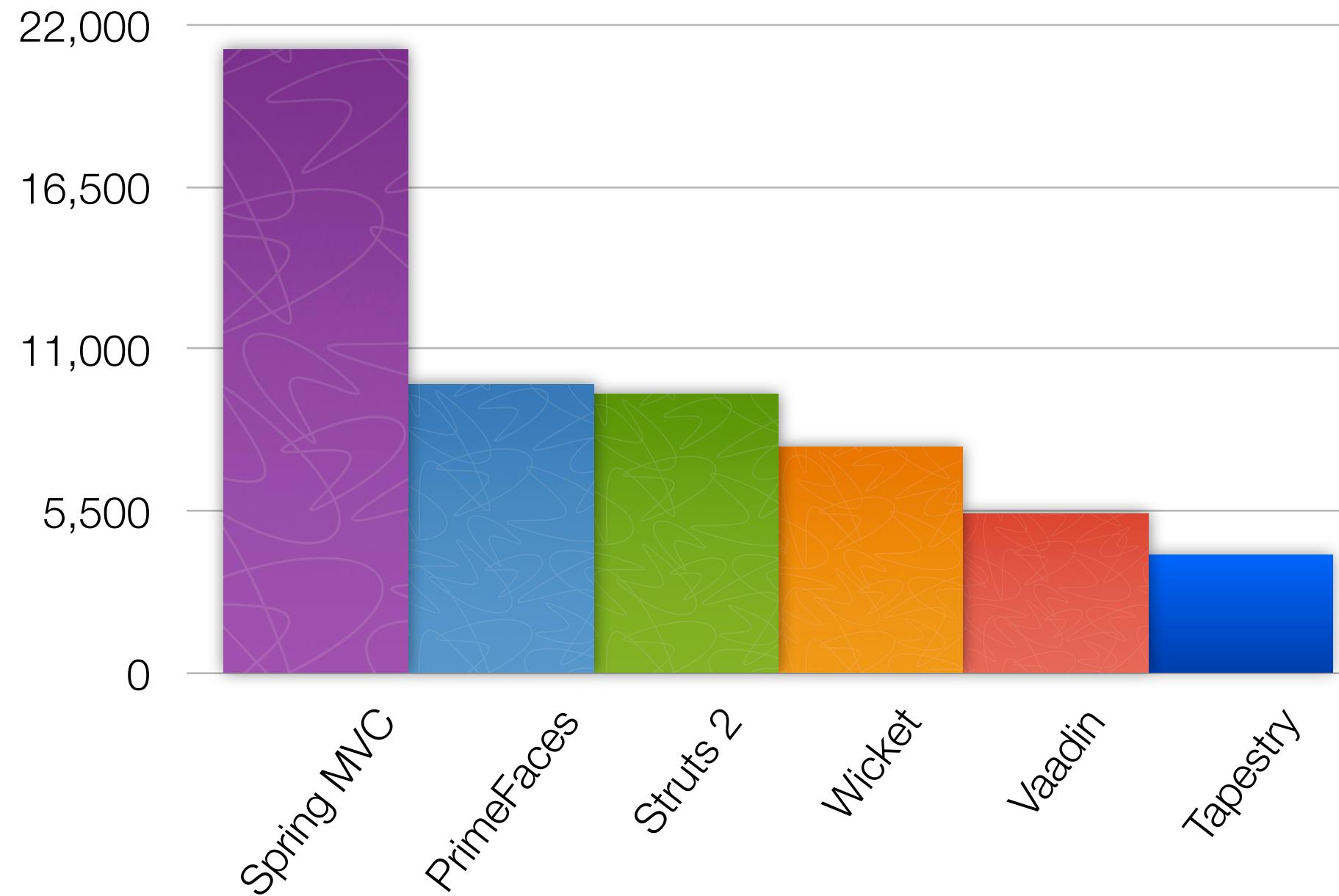
# LinkedIn Skills

**Full Stack Frameworks, February 2014**



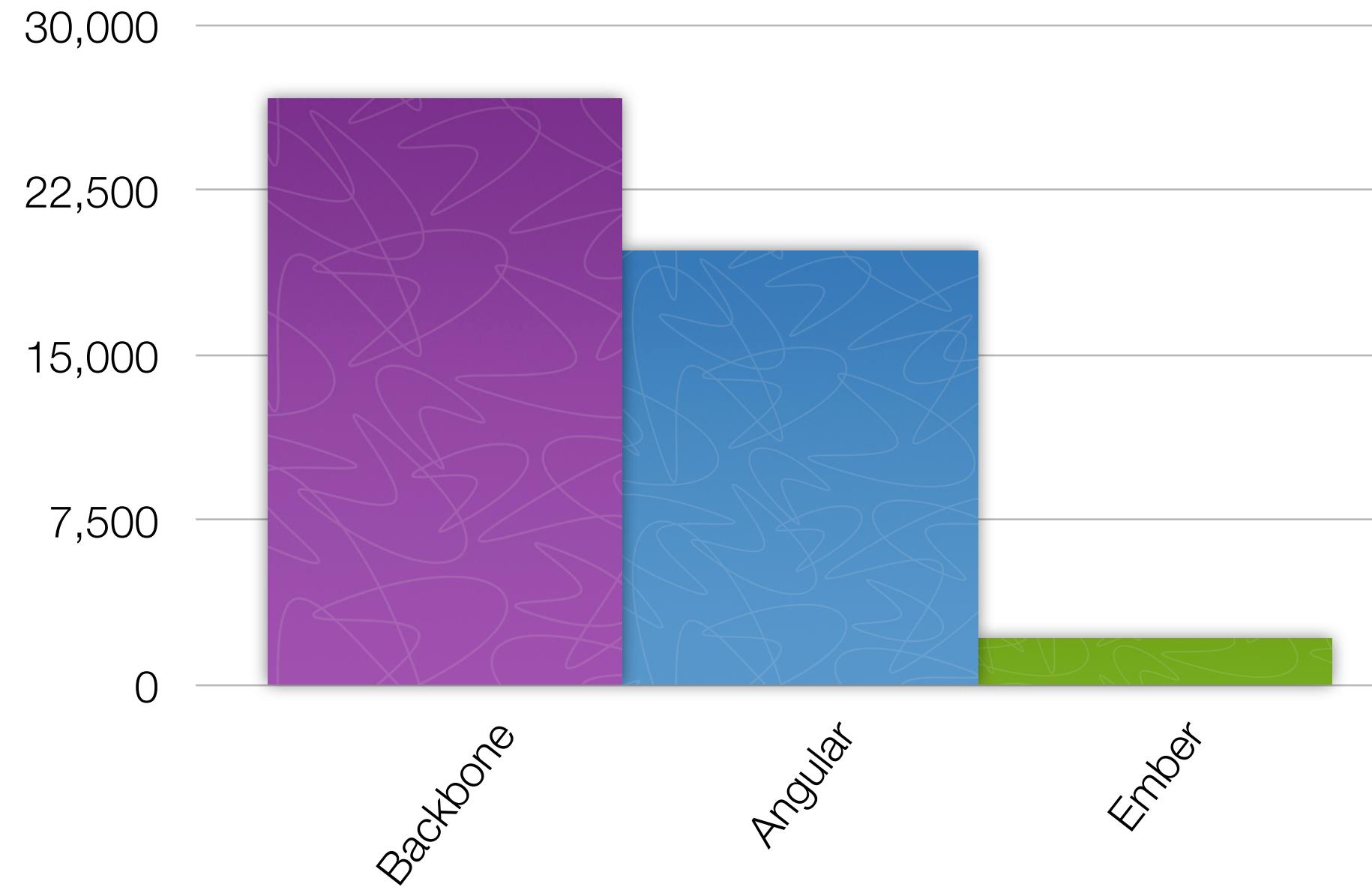
# LinkedIn Skills

Pure Web Frameworks, February 2014



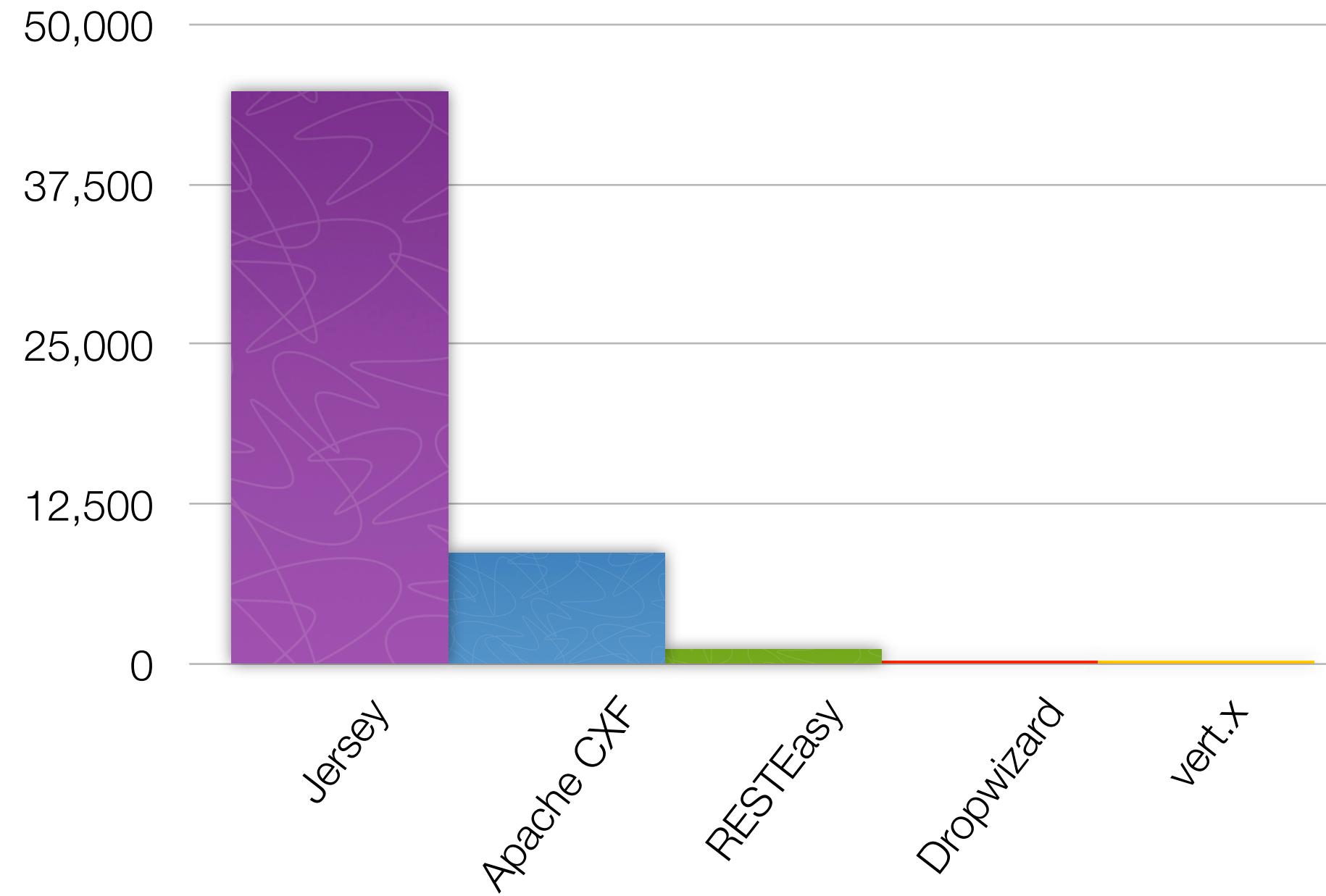
# LinkedIn Skills

**JavaScript MVC Frameworks, February 2014**

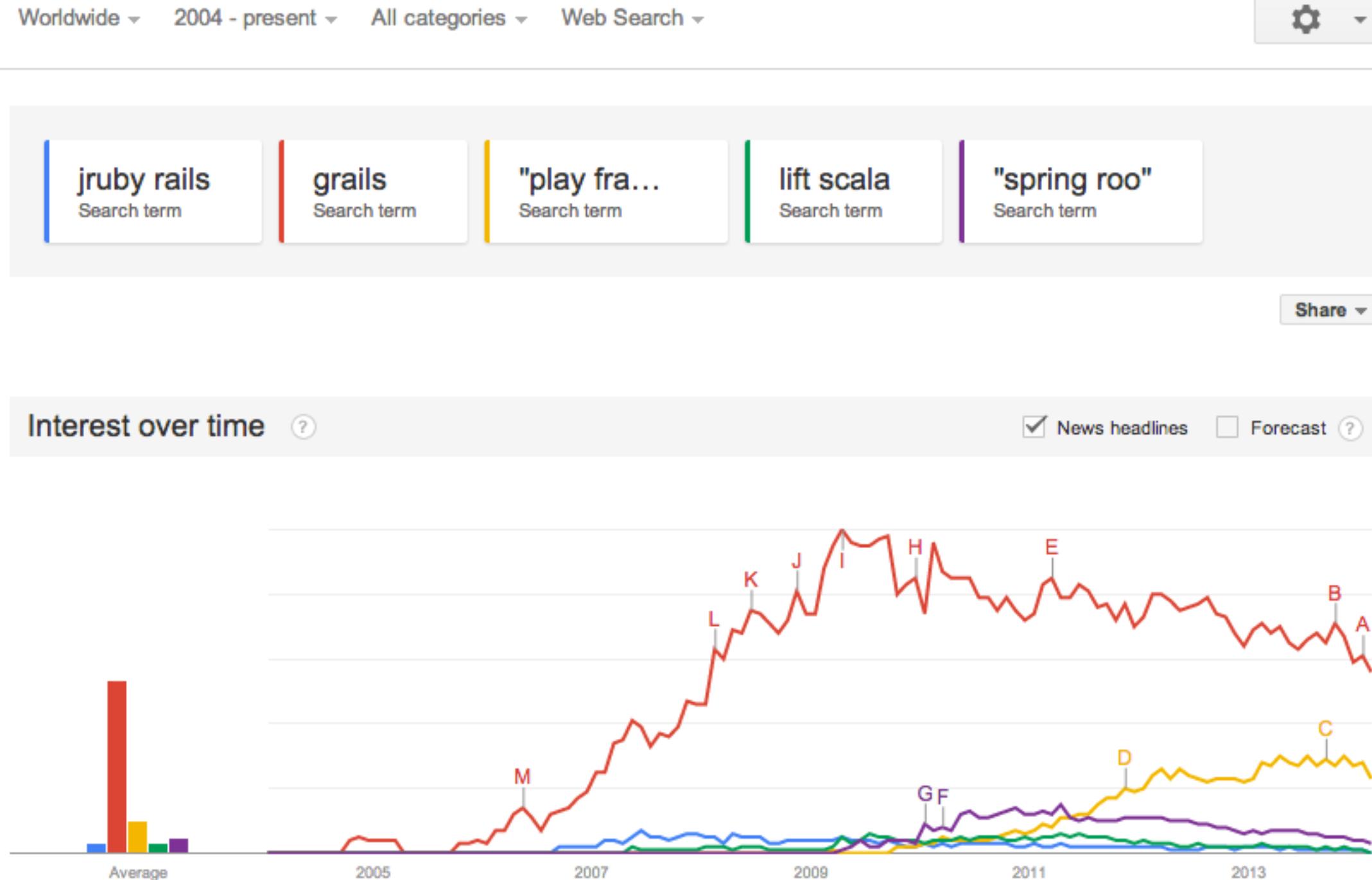


# LinkedIn Skills

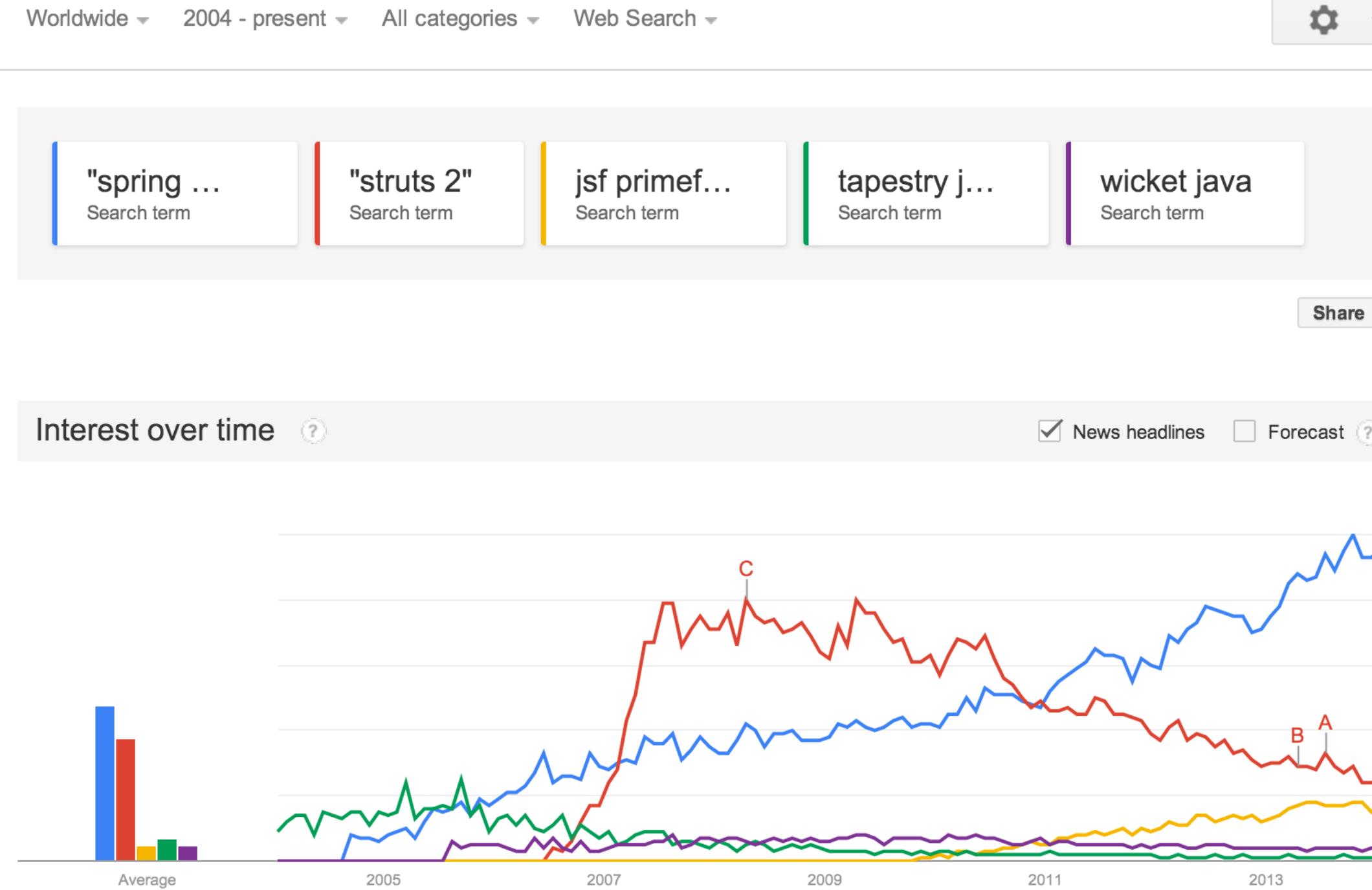
**JVM API Frameworks, February 2014**



# Google Trends

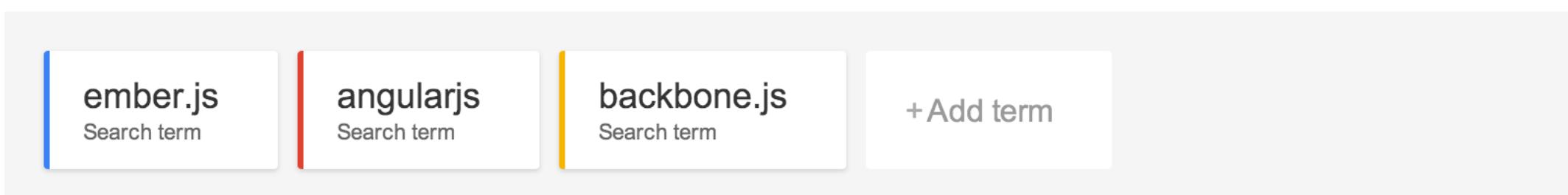


# Google Trends



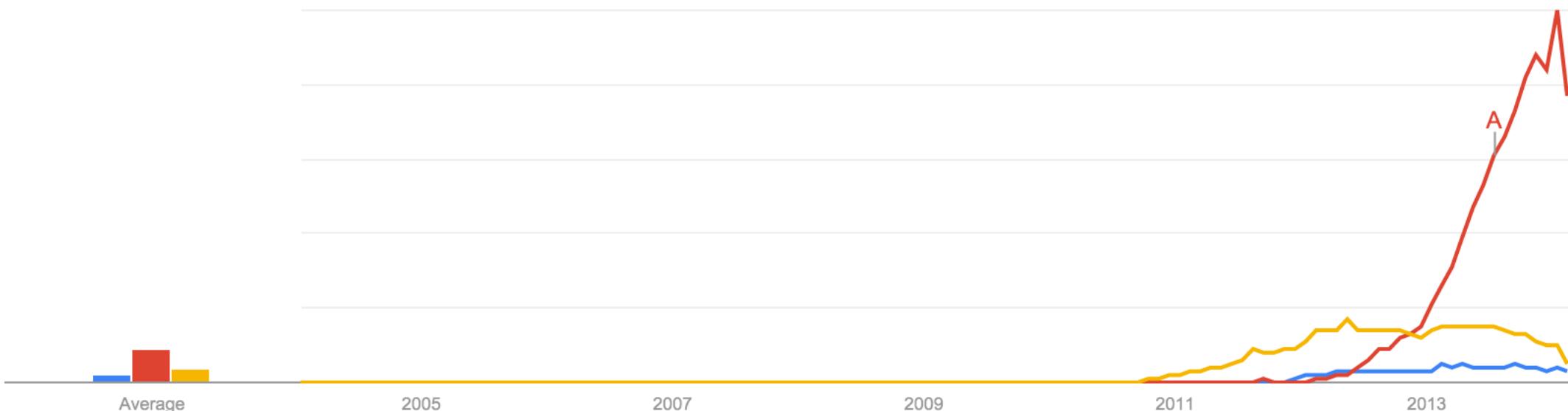
# Google Trends

Worldwide ▾ 2004 - present ▾ All categories ▾ Web Search ▾ ⚙️ ▾



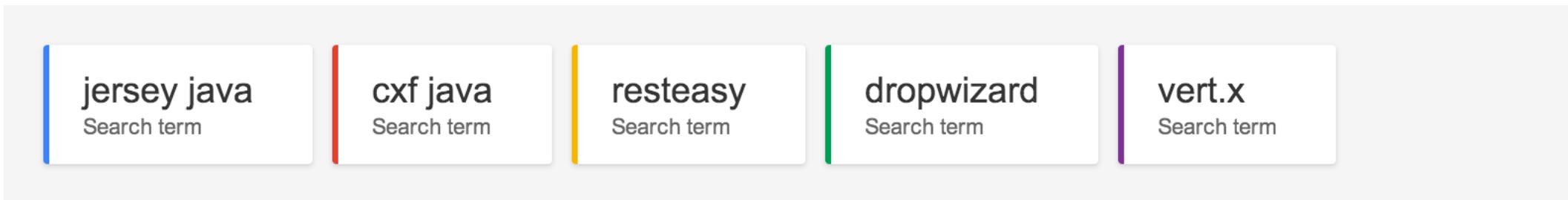
Share ▾

Interest over time ?  News headlines  Forecast ?



# Google Trends

Worldwide ▾ 2004 - present ▾ All categories ▾ Web Search ▾

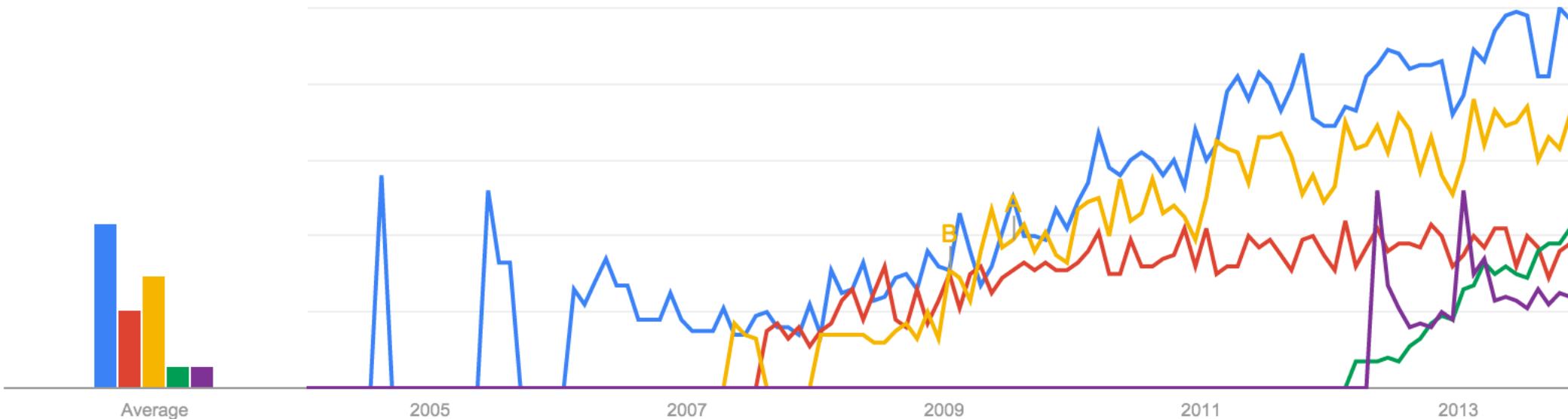


Share ▾

Interest over time ?

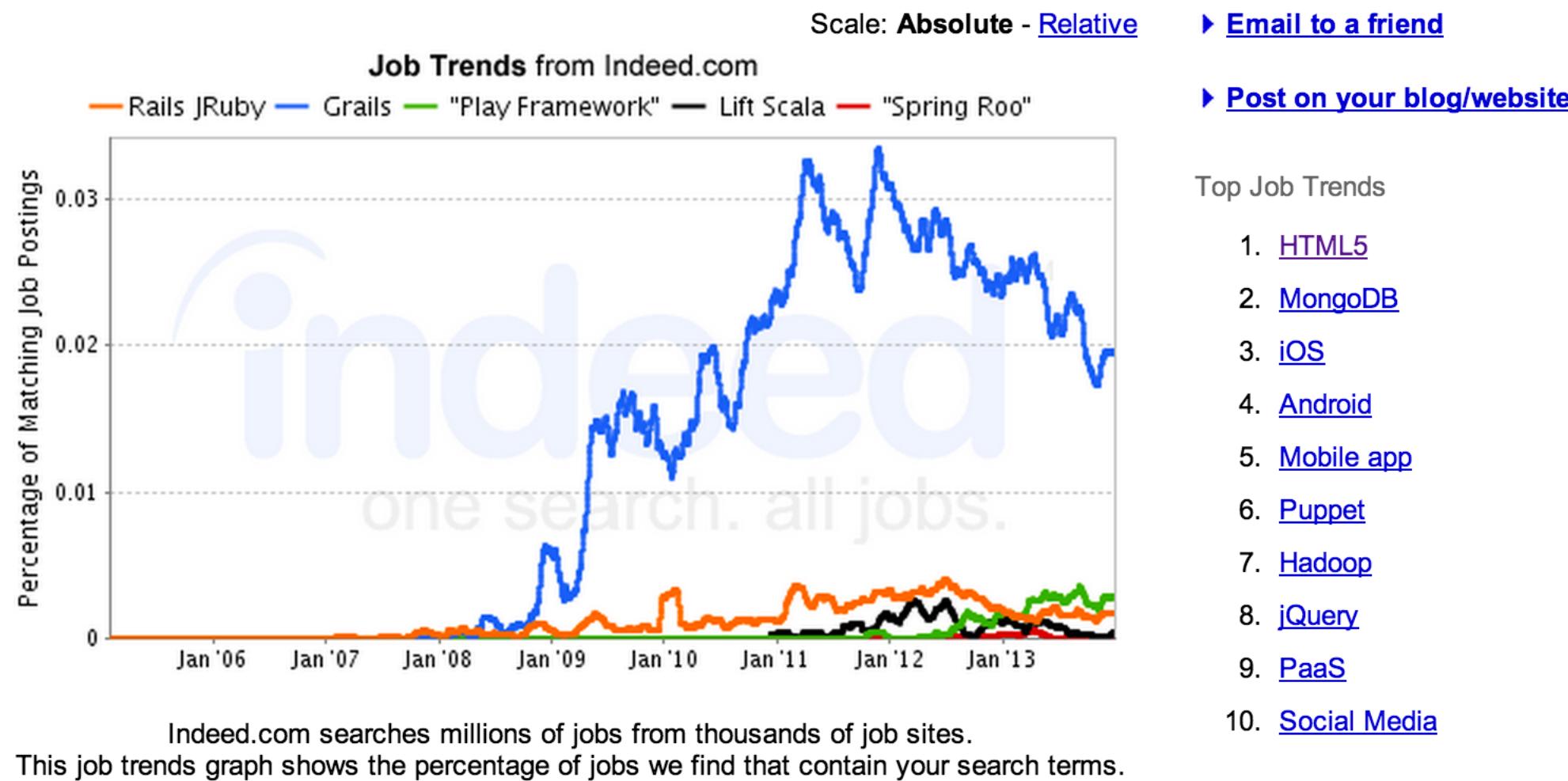
News headlines

Forecast ?



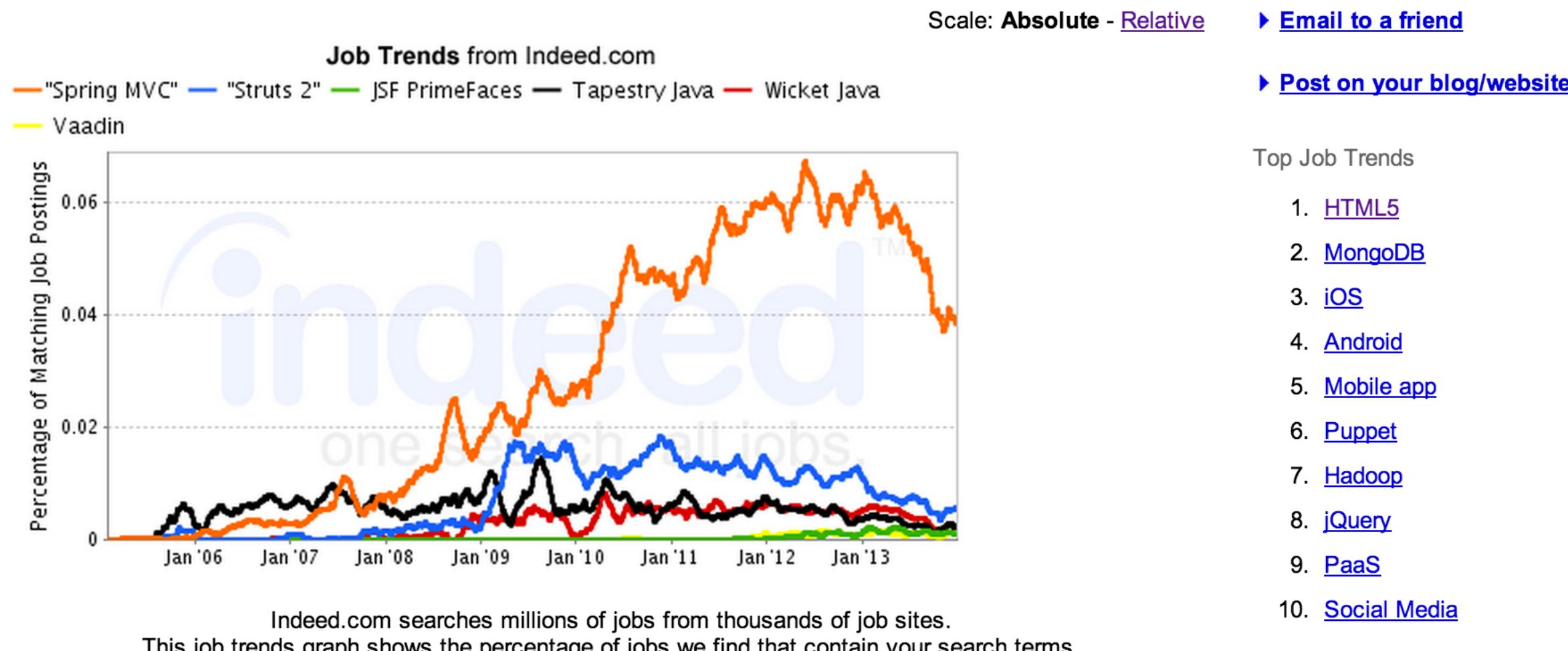
# Indeed Job Trends

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



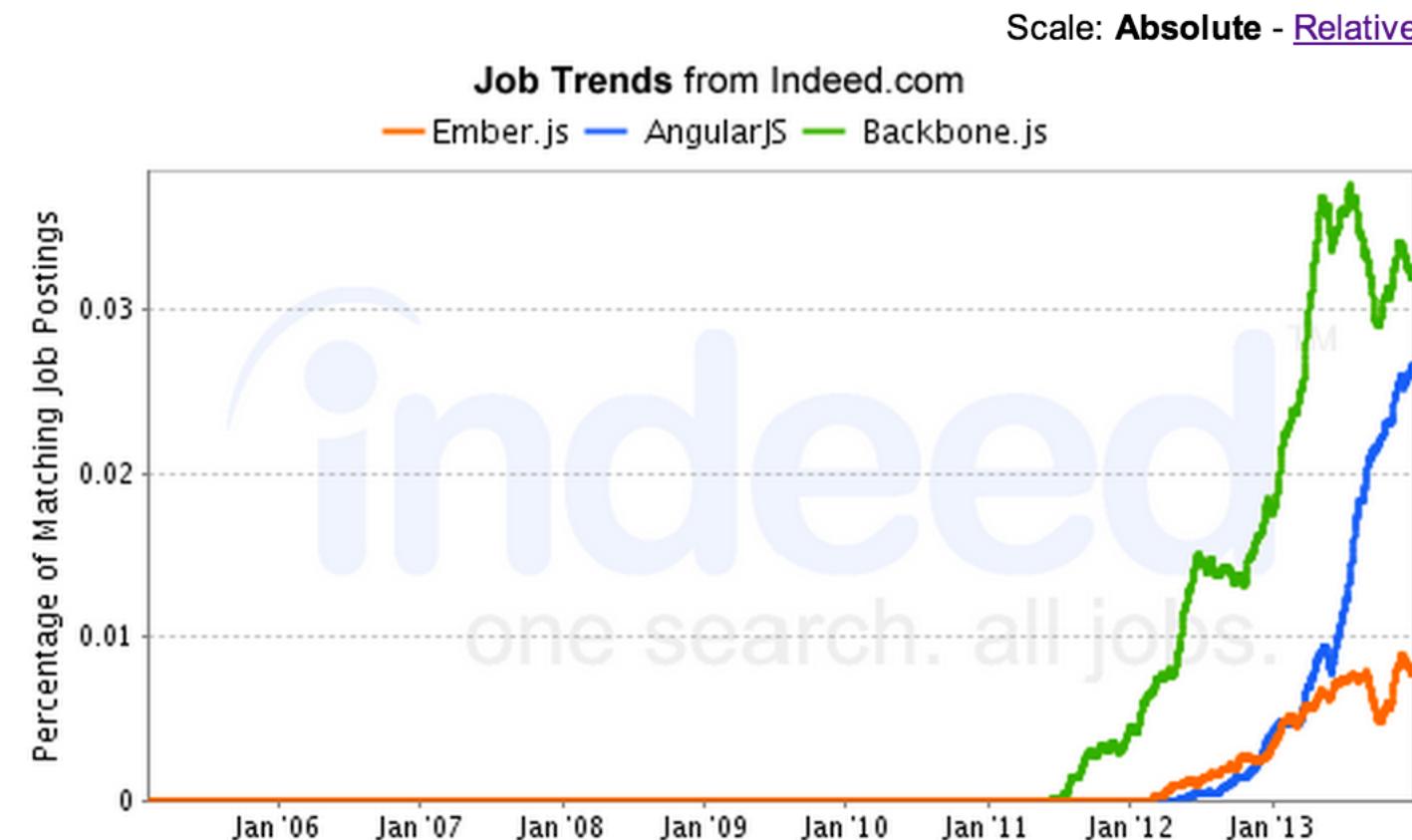
# Indeed Job Trends

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



# Indeed Job Trends

## 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](#)

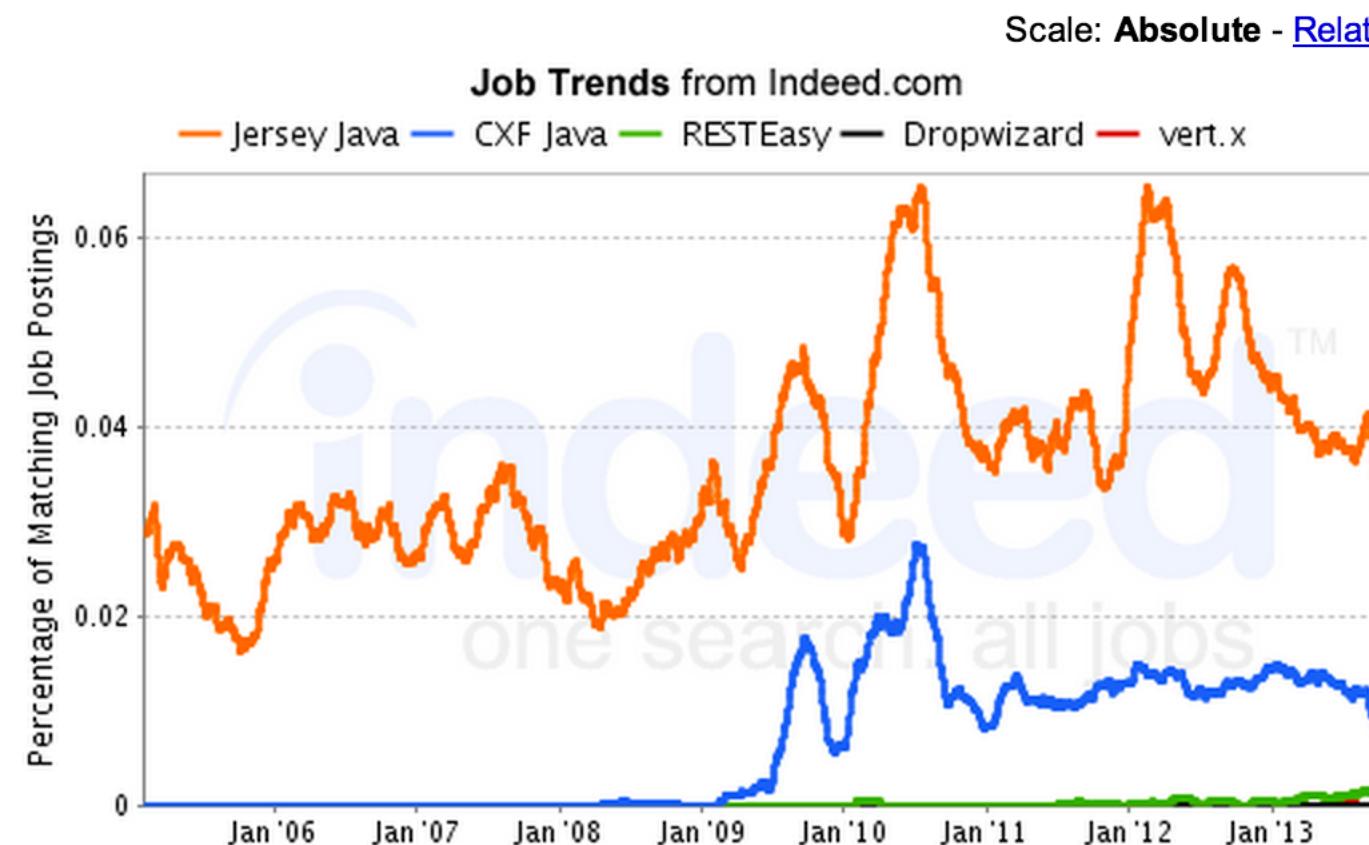
▶ [Post on your blog/website](#)

### 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



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](#)

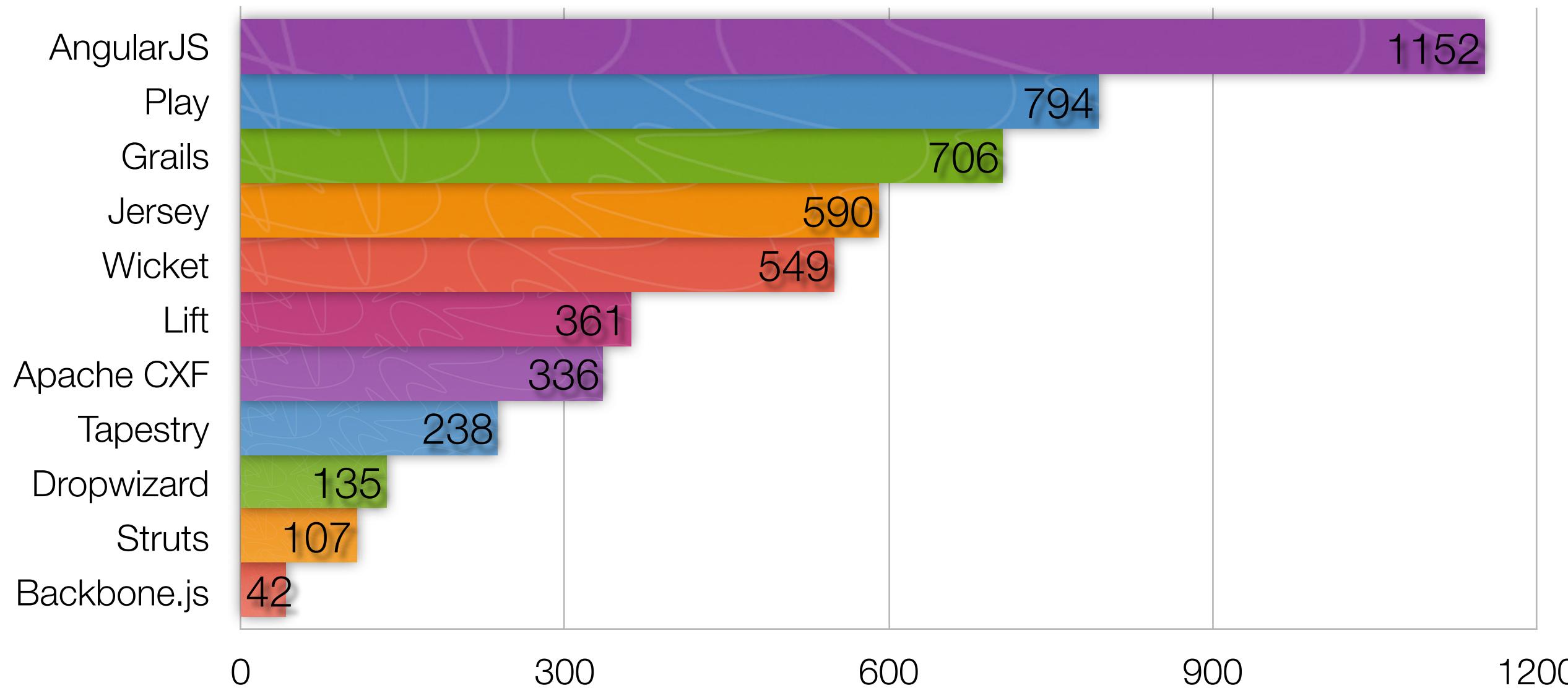
▶ [Post on your blog/website](#)

### 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](#)

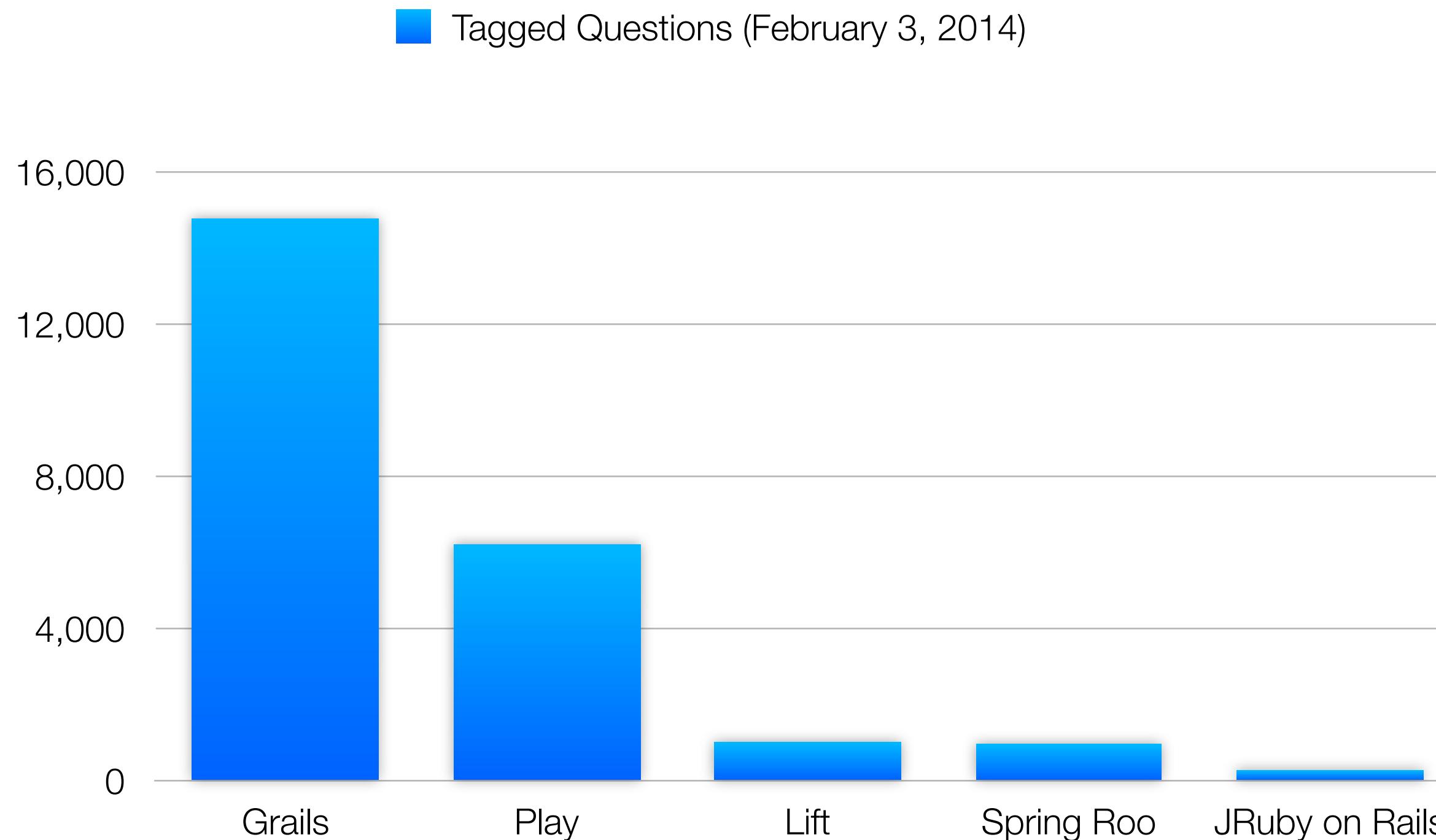
# Mailing List Traffic

January 2014

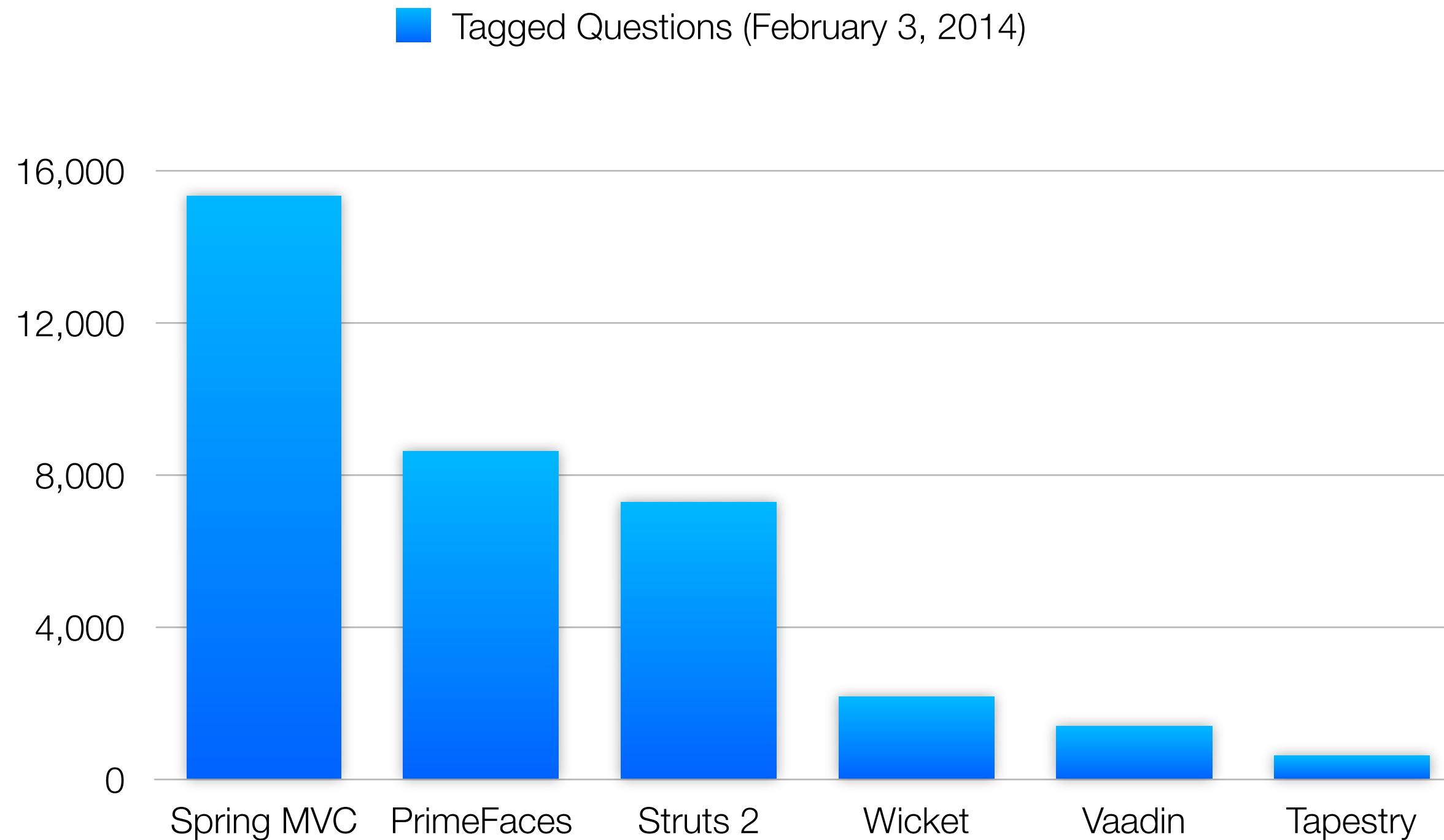


\* Frameworks not listed here use Forums, which don't provide this data.

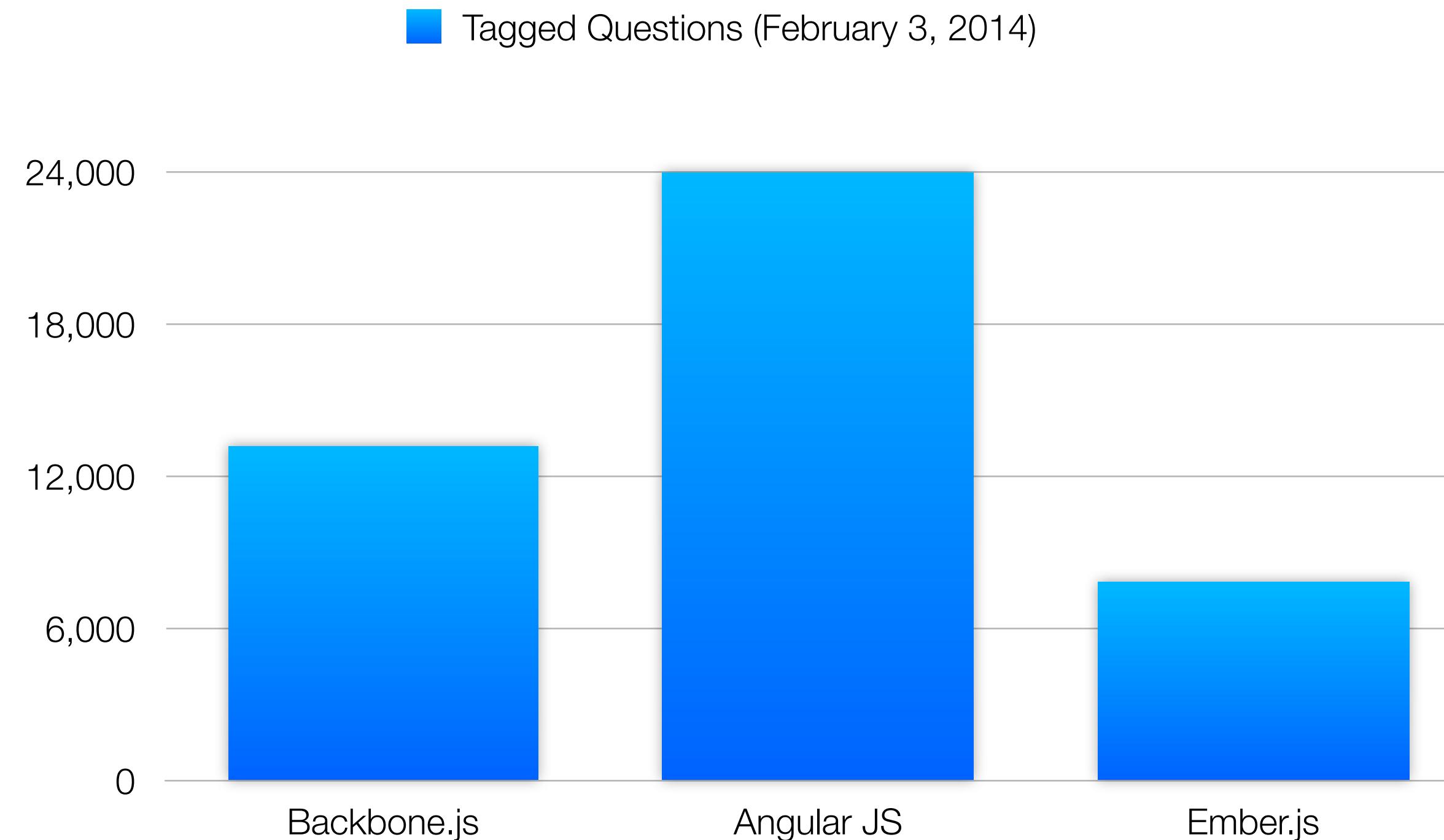
# StackOverflow



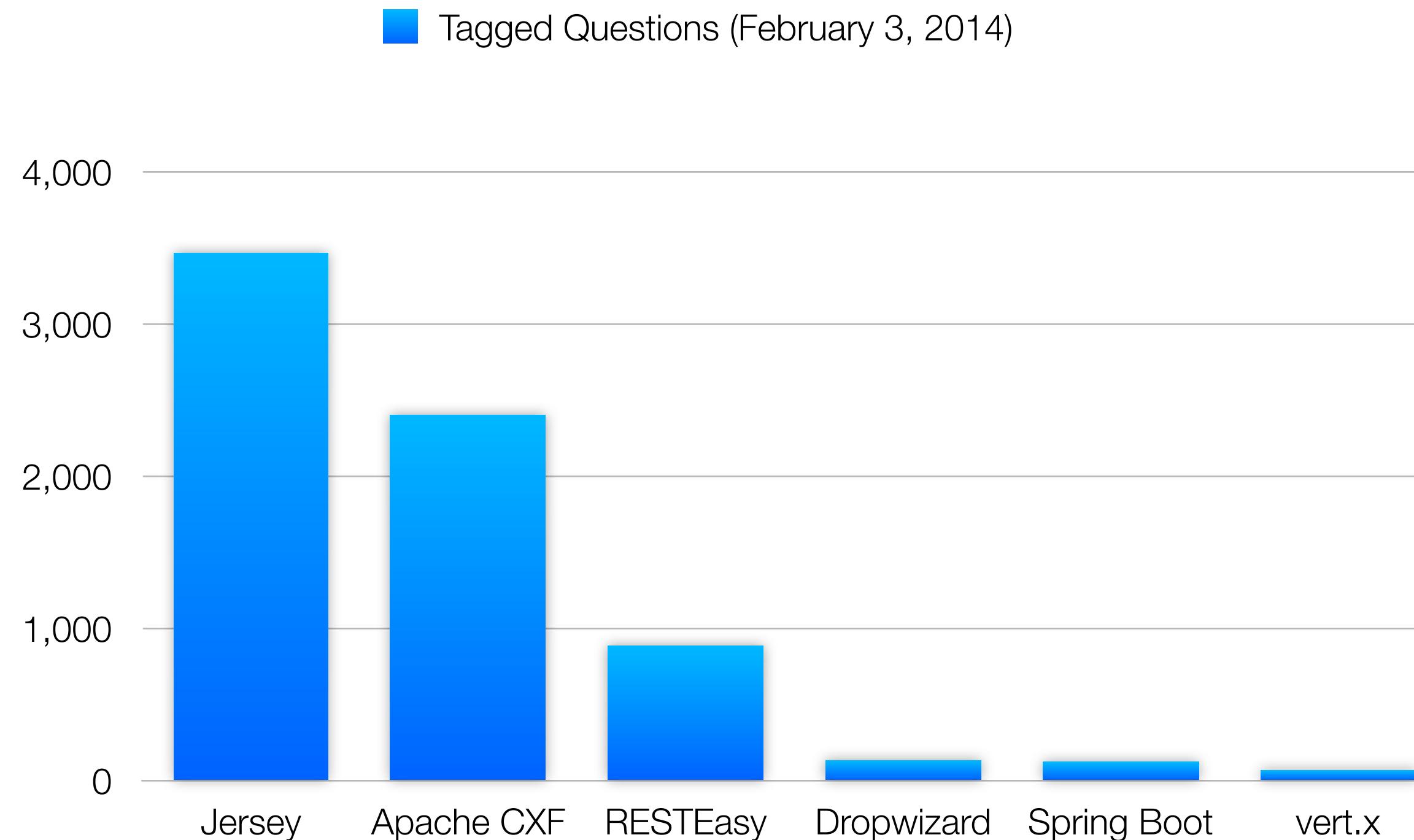
# StackOverflow



# StackOverflow

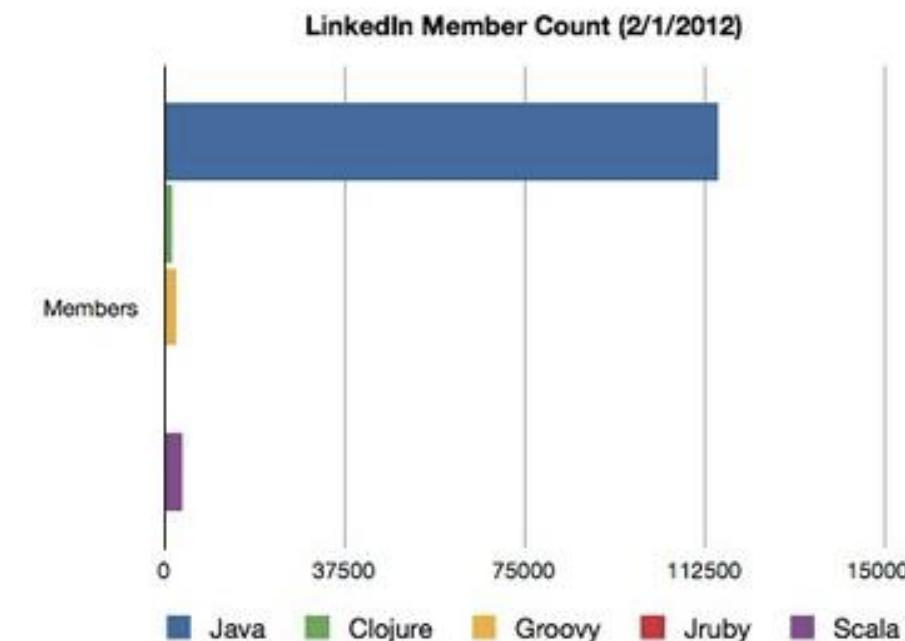


# StackOverflow



# 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 title bar "Modern Principles in Web De" and the URL "blogs.atlassian.com/2012/01/modern-principles-in-web-development/". The page itself is from the Atlassian Blogs section, featuring a dark blue header with the Atlassian logo and a search bar. The main content area has a white background and displays the following:

## Modern Principles in Web Development

By [Rich Manalang](#), Developer Advocate  
[About Developer](#)  
On January 18, 2012

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

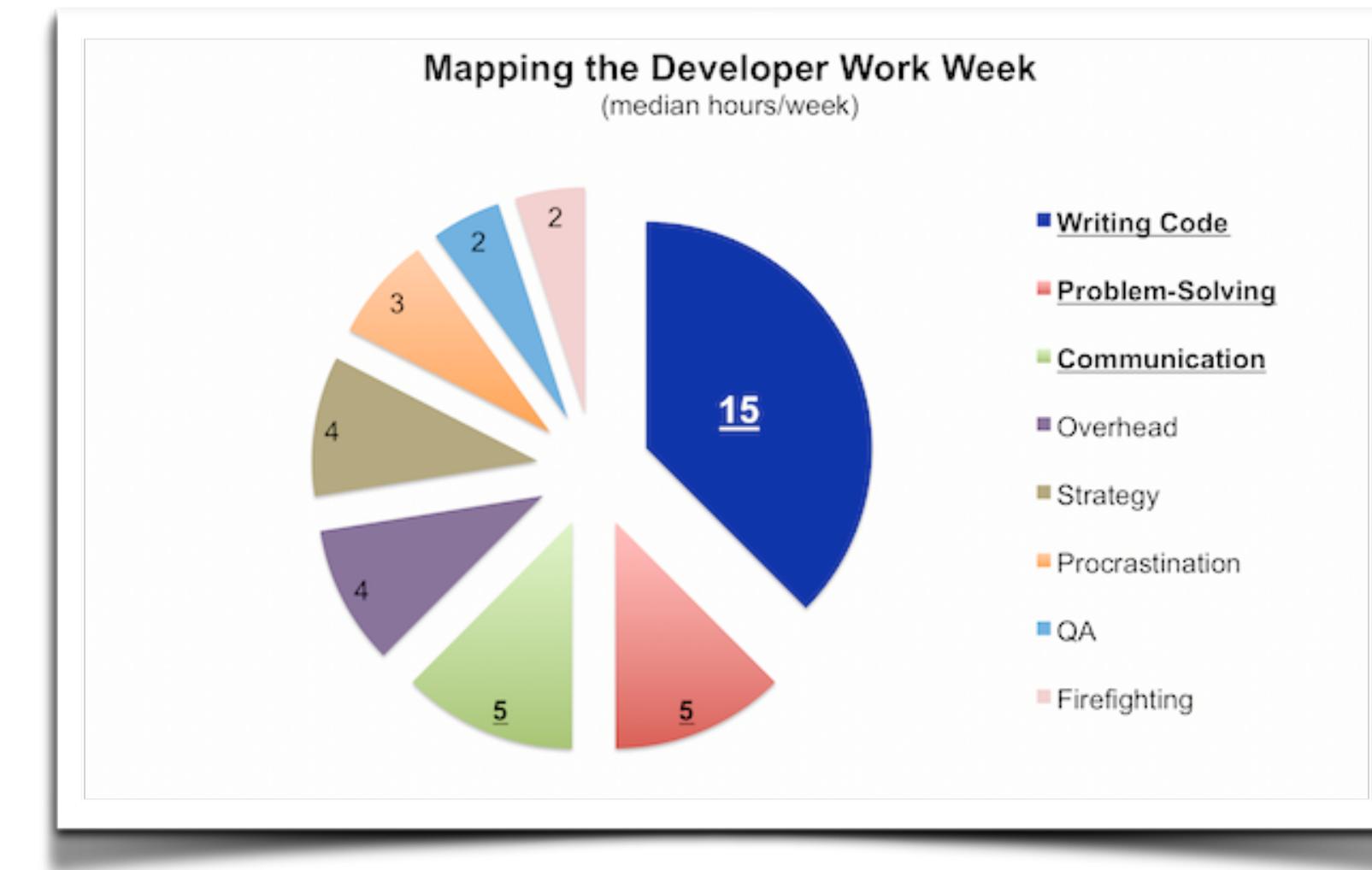
At the top right of the main content area, there are social sharing icons for Google+, Twitter, and Facebook, each with a count: +1 (11), Tweet (162), and Like (8).

# The Modern JVM Web Developer

- ▶ Starts with Fast Hardware
- ▶ Uses IntelliJ IDEA The logo for the 2013 Jolt Awards Coding Tools, featuring a stylized lightning bolt inside a red circle with the letters "JOLT" in white.
- ▶ Leverages JavaScript, HTML5, and CSS3
- ▶ Creates High Performance Web Sites
- ▶ For Mobile Devices
- ▶ In the Cloud
- ▶ And *cares about Security*

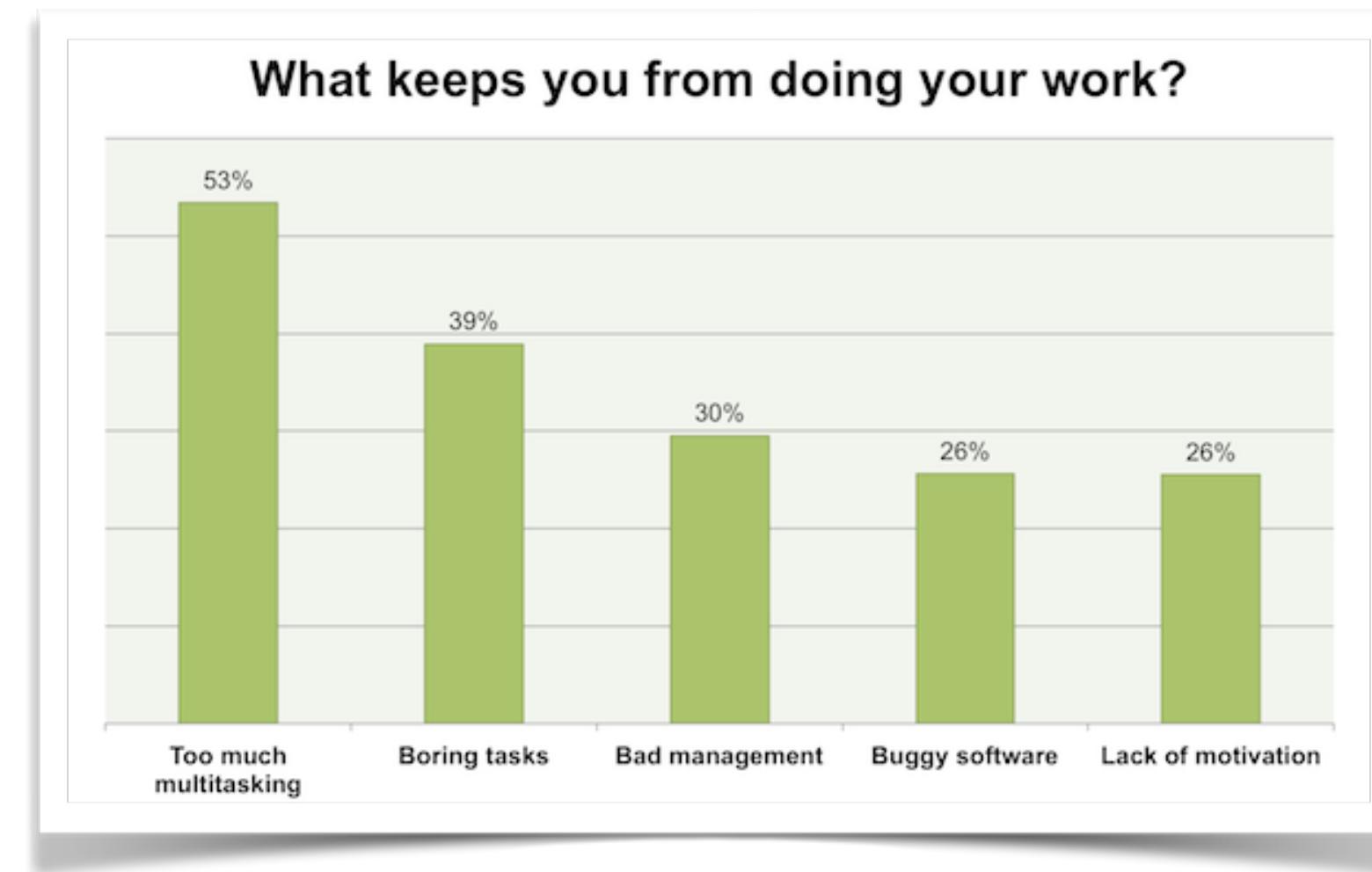


# Developer Productivity



[http://zeroturnaround.com/blog/  
developer-productivity-report-part-1-developer-timesheet/](http://zeroturnaround.com/blog/developer-productivity-report-part-1-developer-timesheet/)

# Developer Productivity



[http://zeroturnaround.com/blog/  
developer-productivity-report-part-3-developer-efficiency/](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 Me!

 <http://raibledesigns.com>

 [@mraible](https://twitter.com/mraible)

## Presentations

 <http://slideshare.net/mraible>

## Code

 <http://github.com/mraible>

