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Web Frameworks of the Future

Flex, GWT, Grail, and Rails

Matt Raible
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Introductions

- Your experience with web applications?
- Have you heard of SOFEA or SOUI?
- Experience with Rails, Grails, GWT or Flex?
- What do you want to get from this session?

- Framework Experience:
  - Struts 1, Struts 2, Spring MVC, JSF, Stripes, Tapestry, Wicket, Rails, Grails, Flex, GWT, Django

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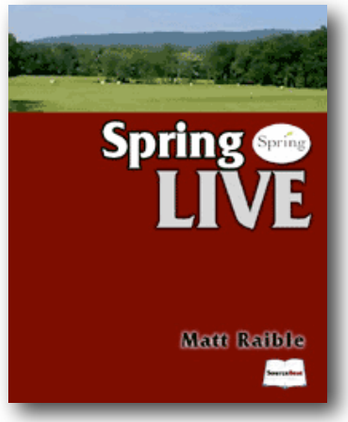
Who is Matt Raible?

- Java Blogger since 2002
- Power user of Java Web Frameworks
- Author of Spring Live and Pro JSP 2.0
- Founder of AppFuse (http://appfuse.org)
- Member of Java EE 5, JSF 1.2 and Bean Validation Expert Groups
- Lead UI Architect at LinkedIn
- Father, Skier, Cyclist and Beer Connoisseur



LinkedIn http://www.linkedin.com/in/mraible

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The Problem

webwork Struts

Struts 2

tapestry

RAILS

Spring 2.0

My Faces

GRAILS

Stripes

ZK™ Simply Rich

WICKET

Google Code

Google Web Toolkit

RIFE

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How do you choose?

Eliminate, Don't Include

It's not about including choices, it's about eliminating them.

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Session Agenda

- SOFEA and SOUI
- REST Backend
  - Rails
  - Grails
  - Comparison
- Rich Frontend
  - Flex
  - GWT
  - Comparison
- Conclusion and Q & A

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SOFEA and SOUI

- **SOFEA** first introduced by Ganesh Prasad, Rajat Taneja and Vikrant Todankar in **Life above the Service Tier** on 10/12/2007.
  - 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 Authors have since formed the Thin Server Architecture Working Group.
  - http://www.thinserverarchitecture.com
- Nolan and Jeff developed Appcelerator.
  - http://www.appcelerator.org

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SOFEA Principles

- Decouple the three orthogonal Presentation Tier processes of **Application Download**, **Presentation Flow** and **Data Interchange**. This is the foundational principle of SOFEA.
- Explore various Application Download options to exploit usefully contrary trade-offs around client footprint, startup time, offline capability and a number of security-related parameters.
- Presentation Flow must be driven by a client-side component and never by a server-side component.
- Data Interchange between the Presentation Tier and the Service Tier must not become the weakest link in the end-to-end application chain of data integrity.
- Model-View-Controller (MVC) is a good pattern to use to build the Presentation Tier.

SOFEA (Service-Oriented Front-End Architecture)

Presentation Flow
(PF)

Managed entirely by the client application

Not involved in Presentation Flow or Data Interchange

Client Application

Model

Controller

View

Application Download
(AD)

Download Server

SOA Business Services

SOAP

REST

Data Interchange
(DI)

XML-formatted data, Client/Server and/or Peer-to-Peer styles

Application Container

Native OS, browser, JVM, browser plugin, or other runtime

Service Interface

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Recommended Frameworks

- DHTML/AJAX frameworks for Modern Browsers
  - Largely handcoded with third party JavaScript libraries
  - Google Web Toolkit (GWT, GWT-Ext)
  - TIBCO General Interface Builder
- XML Dialects for Advanced Browsers
  - XForms and XHTML 2.0
  - Mozilla XUL
  - Microsoft SilverLight/XAML
- Java frameworks
  - Java WebStart (with/without Spring Rich Client)
  - JavaFX
- Adobe Flash-based frameworks
  - Adobe Flex
  - OpenLaszlo

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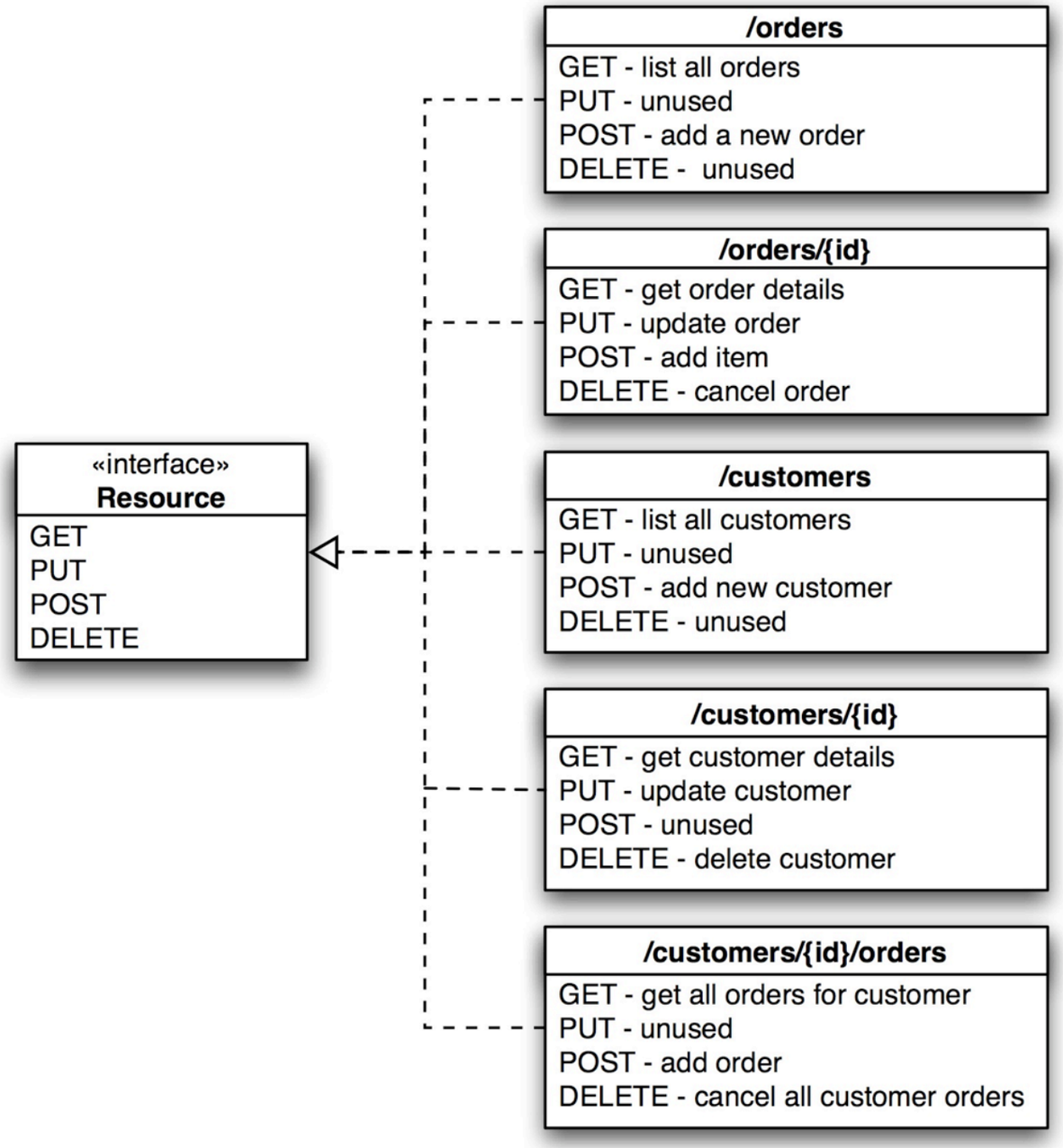
REST



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

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Ruby on Rails

- REST is enabled by default with Scaffolding
- Scaffolding doesn't support one-to-many UI
- **ActiveScaffold** fixes one-to-many, supports REST and adds Ajax
  - Rails 2.1 and ActiveScaffold 1.1.1

- ~~script/install plugin and git clone~~
- Download and unzip works...
- ...but, you need 2.1 patch from:
  - http://github.com/lightningdb/activescaffold/tree/master
- Warbler has issues with ActiveScaffold

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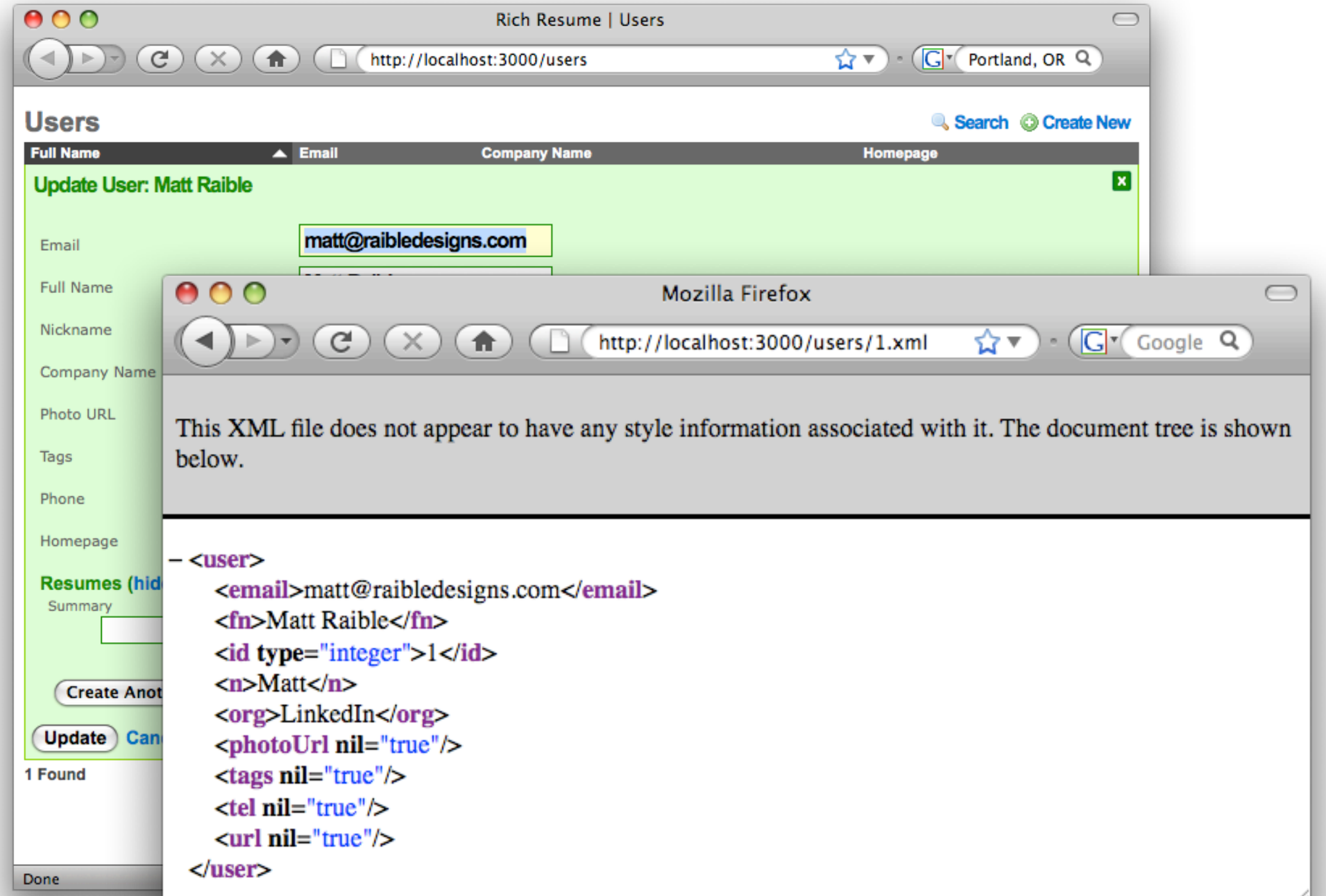
RESTful Rails



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Grails

- Grails 1.x has REST support built-in
- Scaffolding does not support REST by default
- Adding REST support to Scaffolding
  - http://fbflex.wordpress.com/2008/05/15/rest-service-xml-output-in-grails-via-content-negotiation
    - Fix for Firefox 3: http://www.nabble.com/scaffolding-rendering-defaulting-to-XML-now-td18540185.html
- Scaffolding insufficiently supports one-to-many UI
- One-to-many support possible if you modify templates
  - http://www.stainlesscode.com/site/comments/grails_one_to_many_scaffolding

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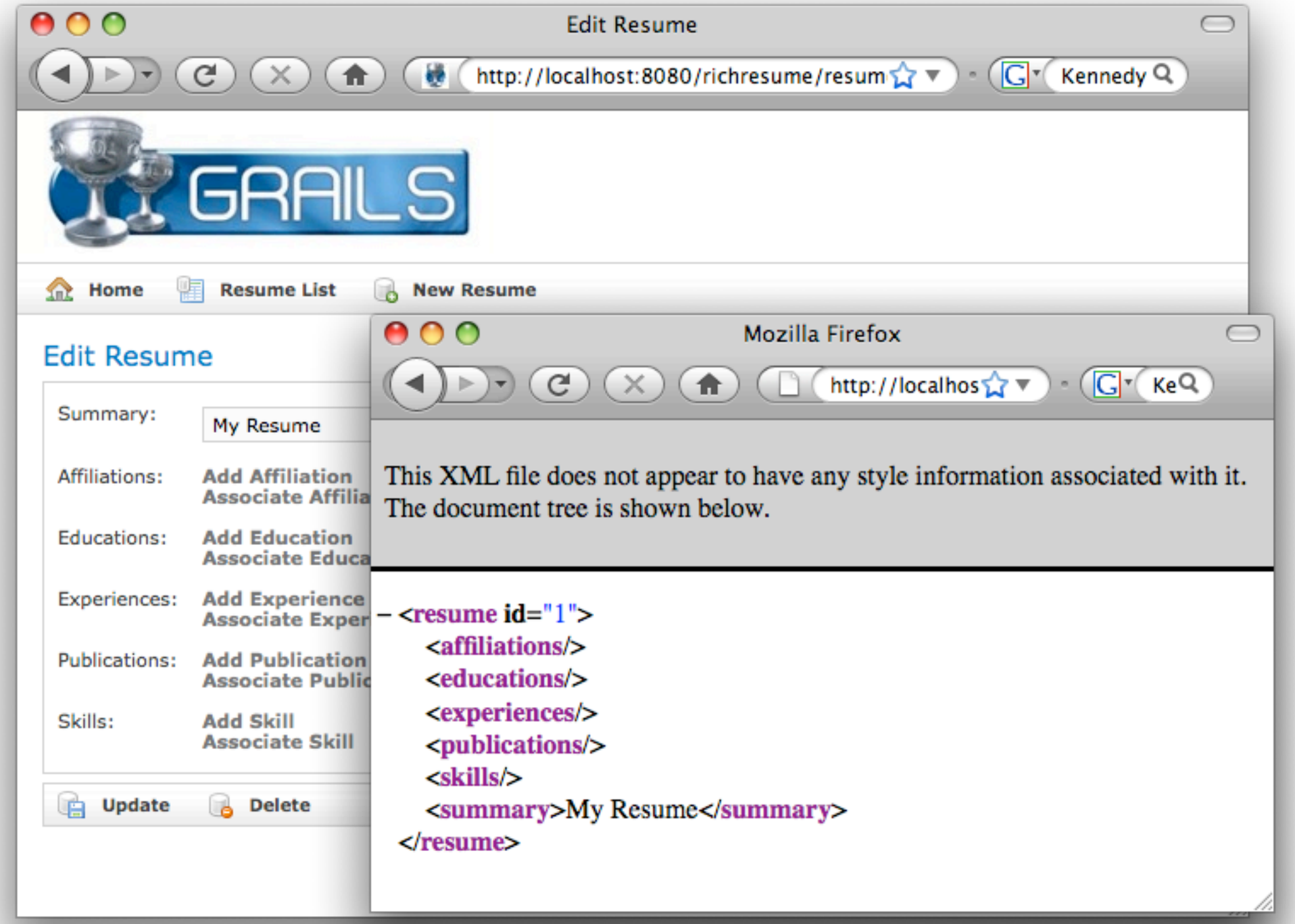
RESTful Grails



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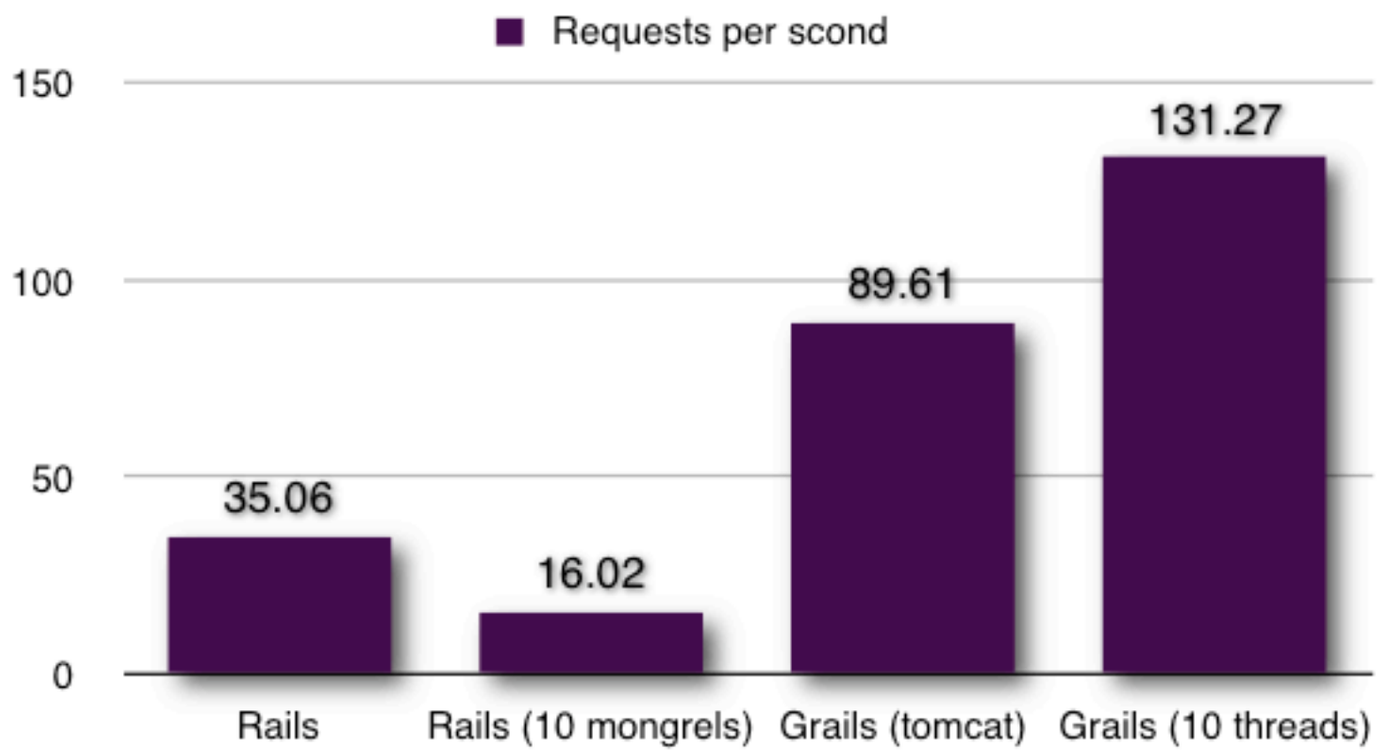
Rails vs. Grails

- http://grails.org/Grails+vs+Rails+Benchmark
  - Grails: 40 requests per second, Rails: 32



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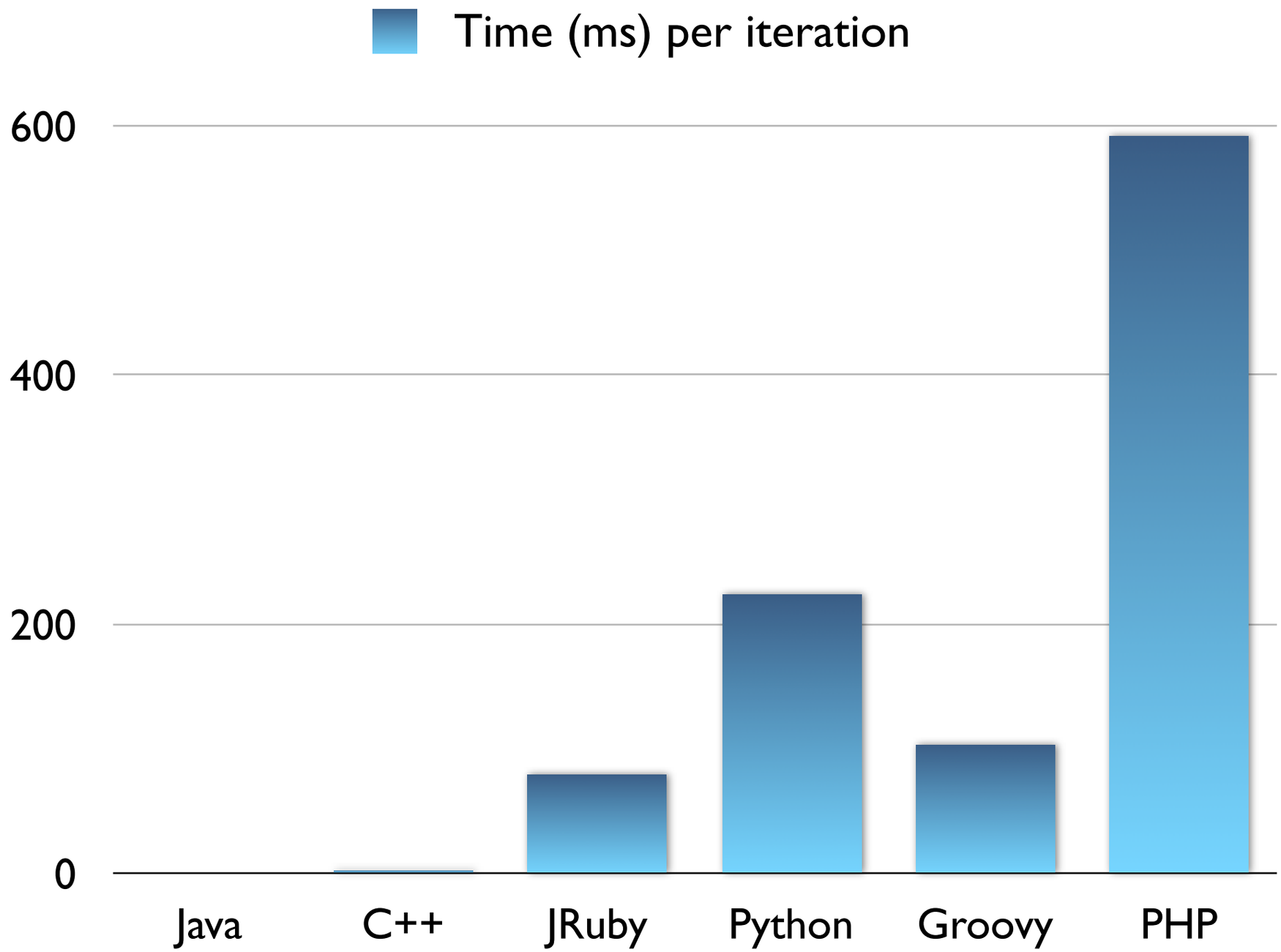
Language Performance



http://blog.dhananjaynene.com/2008/07/performance-comparison-c-java-python-ruby-jython-jruby-groovy/

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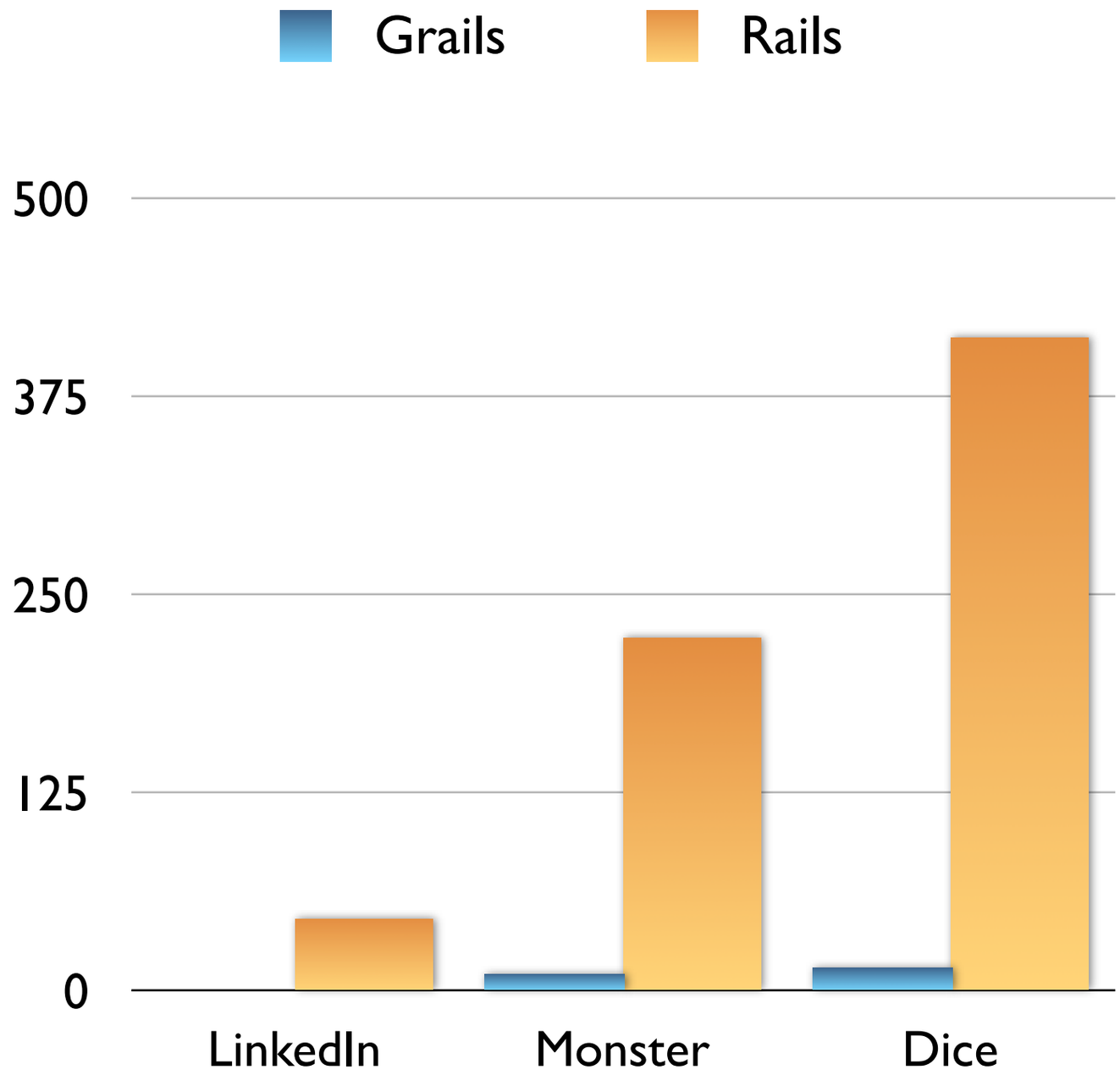
Jobs



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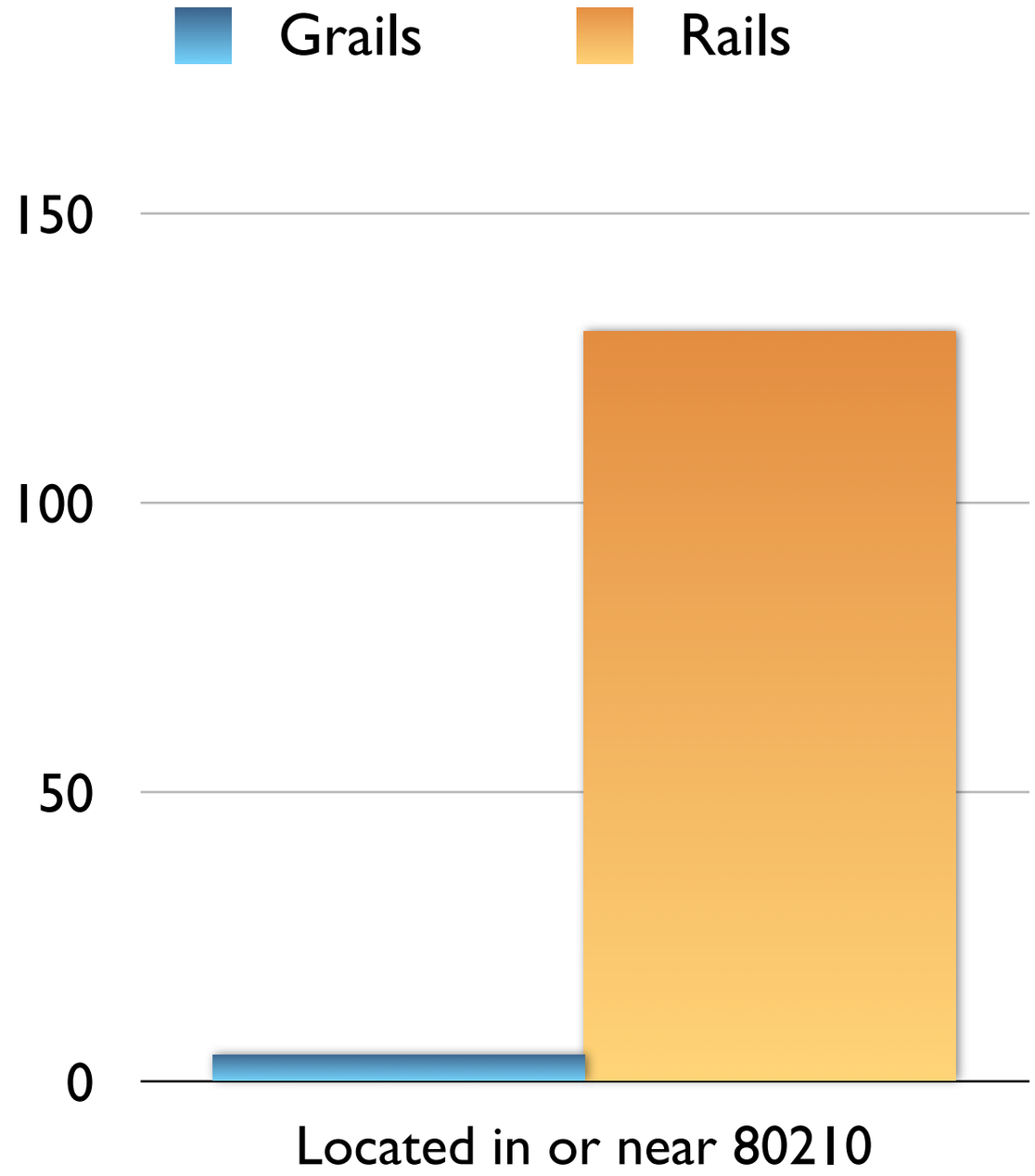
My LinkedIn Network



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Flex + Rails

- Flex Scaffold
  - http://www.railslodge.com/plugins/717-flex-scaffold
- Flex e-Genial Scaffold
  - http://rubyforge.org/projects/flexscaffold
- WebORB for Ruby on Rails
  - http://www.themidnightcoders.com/weborb/rubyonrails/index.htm
- <mx:HTTPService id=”...” url=”...” resultFormat=”...”
  HTTPMethod=”...” result=”...”/>

Flex

- Pros:
  - Produces Flash UI
  - Funded by Adobe
  - Has many successful client stories
  - Supports REST easily
- Cons
  - Not Search Engine Friendly
  - Doesn't render HTML content well
  - Doesn't print well by default
  - No Zero Turnaround w/o IDE

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GWT + Grails

- GWT Plugin
  - http://grails.org/GWT+Plugin
  - Uses Server-side RPC
- GWT has limited support for REST
  - JSONRequest
  - GWT-REST (works best with Rails)
  - Sonatype GWT REST (in development)
  - Restlet API (in development)

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GWT

- 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's JavaScript sandbox

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Flex vs. GWT

- Ajax vs. Flex
  - http://anthonyfranco.wordpress.com/2007/06/22/flex-and-ajax-friends-or-foes
- Use the Best Tool for the Job
  - Open Web: Ajax
  - Video and Rich Media: Flex
  - HTML Rendering: Ajax
  - Vector Graphics and Bitmap Manipulation: Flex
  - Accessibility: Flex

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Flex vs. Ajax Performance

http://www.jamesward.com/census

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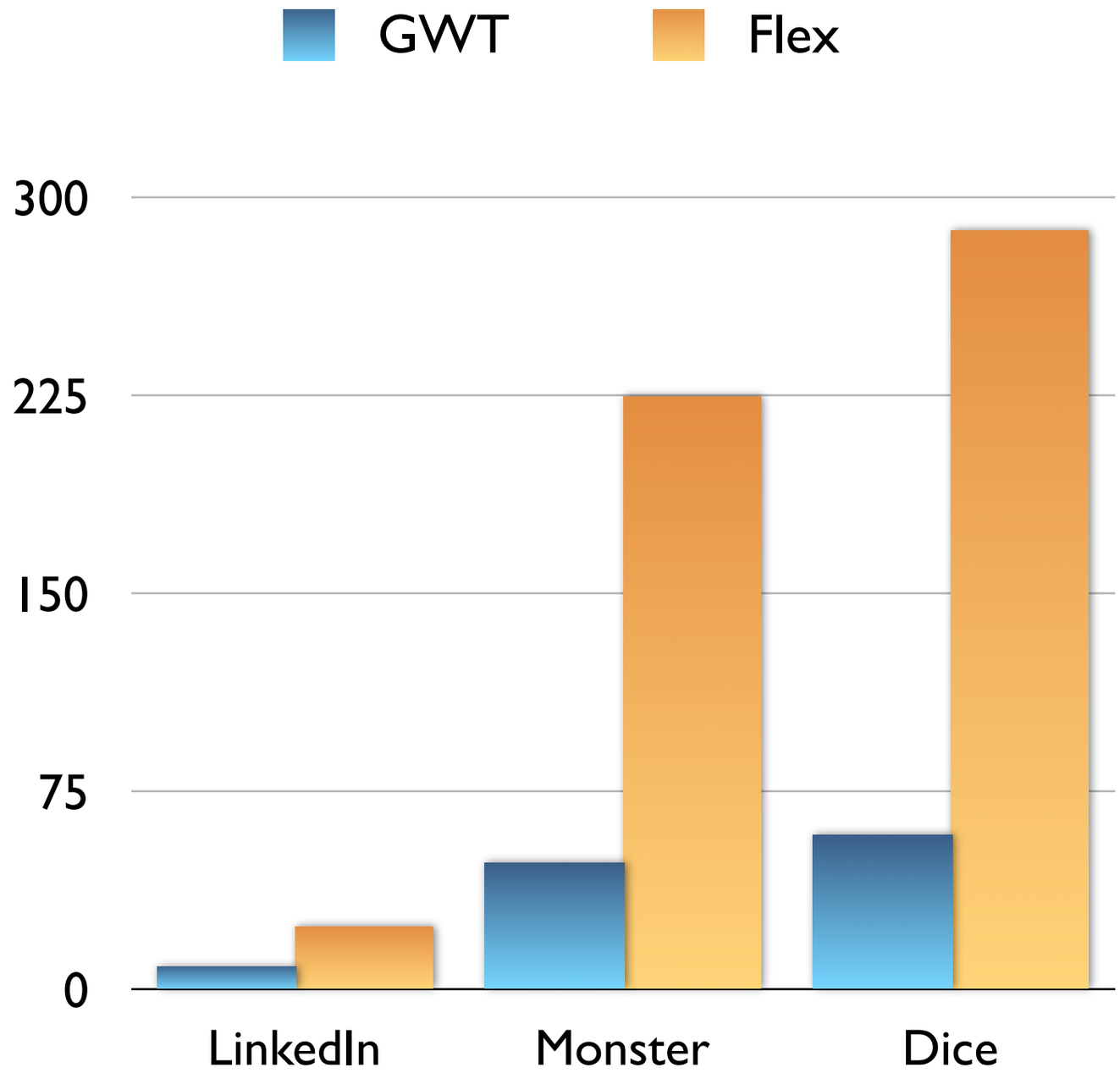
Jobs



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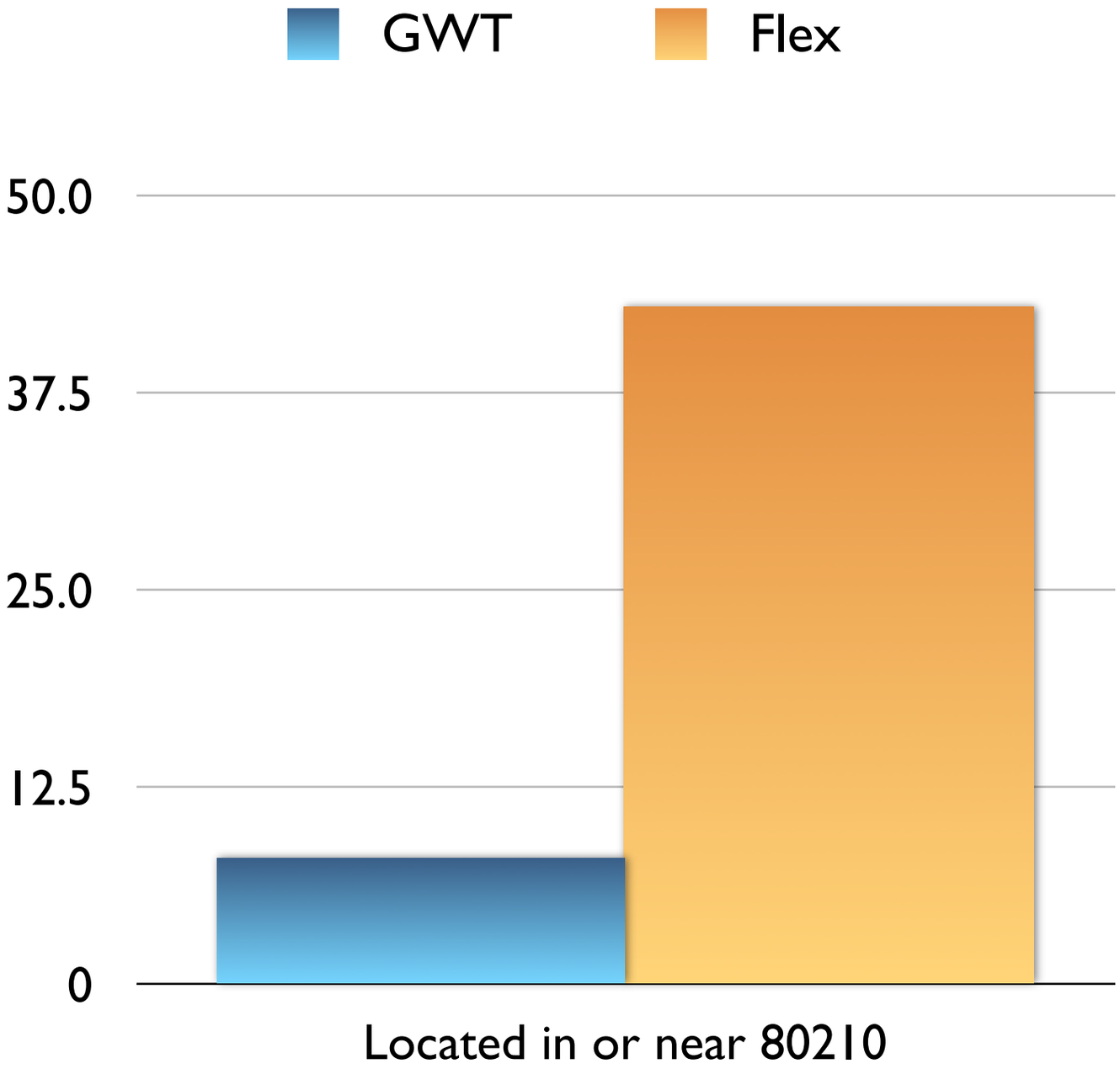
My LinkedIn Network



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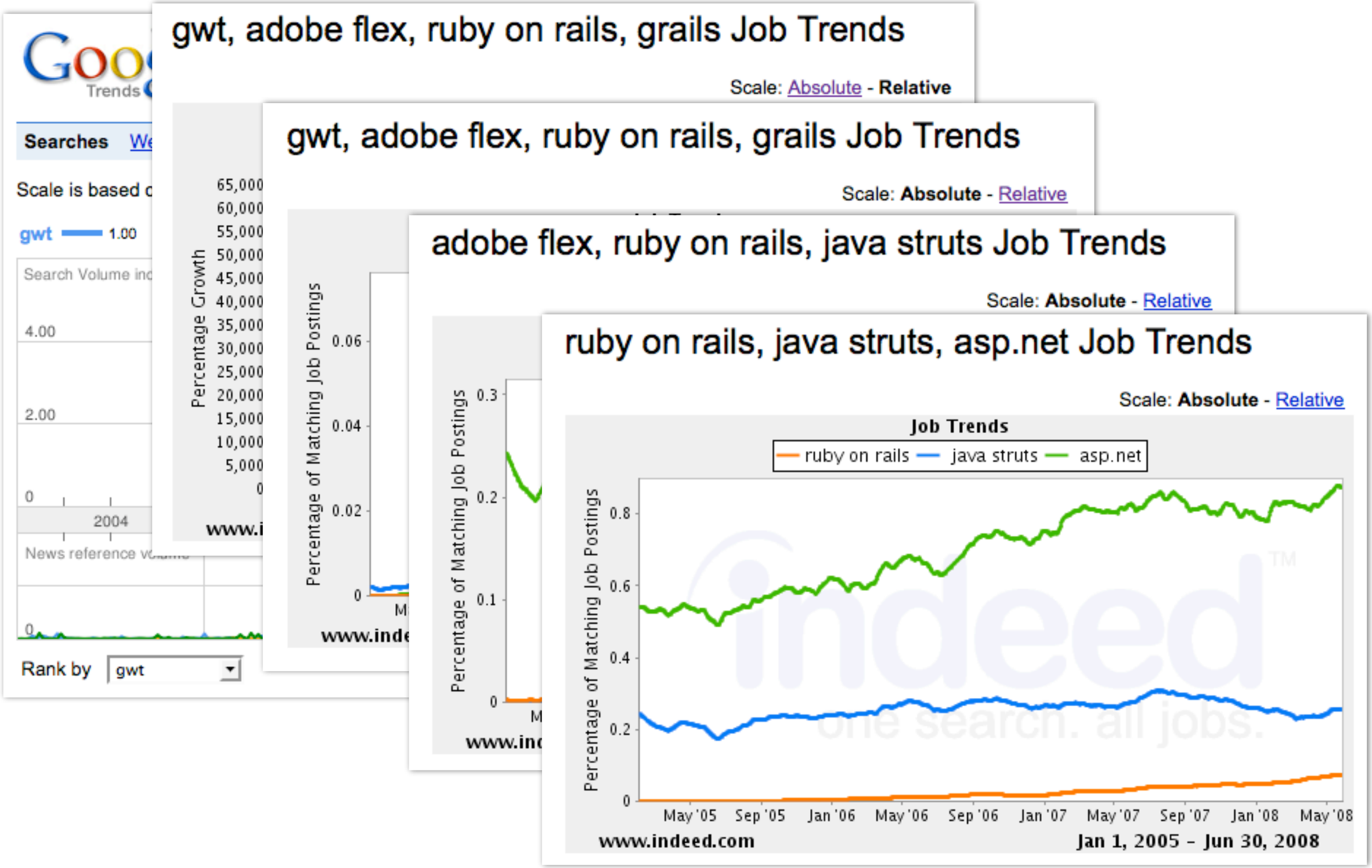
Pretty Graphs



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Project Support and Licensing

- Grails - http://grails.org
  - Apache 2.0 License
  - Active Community @ http://grails.org/Community
  - Training from G2One and No Fluff Just Stuff
  - The 2G Experience
  - Recommended Books:
    - Getting Started with Grails by Jason Rudolph
    - Groovy Recipes by Scott Davis
    - Programming Groovy by Venkat Subramaniam
    - Beginning Groovy and Grails by Judd, Nusairat and Shingler

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Project Support and Licensing

- Ruby on Rails - http://rubyonrails.org
  - MIT License
  - Active Community @ http://www.rubyonrails.org/community
  - Training from The Pragmatic Studio and many others
  - RailsConf and The Rails Edge
  - Recommended Books:
    - Agile Web Development with Rails by Thomas and DHH
    - Rails for Java Developers by Halloway and Gehtland
    - Practical JRuby on Rails by Ola Bini
    - The Rails Way by Obie Fernandez

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Adobe Flex

- Adobe Flex - http://www.adobe.com/products/flex
  - Flex SDK under Mozilla Public License
  - Active Community
    - Yahoo Group: http://tech.groups.yahoo.com/group/flexcoders
    - User Groups: http://flex.org/usergroups_list
  - 360|Flex
  - Recommended Books
    - Flexible Rails by Peter Armstrong
    - Flex 3 in Action by Tariq Ahmed
    - Flex on Java by Allmon and Anderson

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Google Web Toolkit

- Google Web Toolkit - http://code.google.com/webtoolkit
  - Apache 2.0 License
  - Active Community
    - http://groups.google.com/group/Google-Web-Toolkit
  - Pearson's Google Web Toolkit Conference and Google I/O
  - Recommended Books
    - GWT in Action by Hanson and Tacy
    - GWT in Practice by Cooper and Collins
    - Google Web Toolkit Solutions by Geary and Gordon
    - Pro Web 2.0 Application Development with GWT by Jeff Dwyer

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Conclusion

- Rails is more mature and supports RESTifying a database better.
- Framework and Language performance doesn't == scalability.
- Grails may be faster from a requests per second standpoint.
- Flex/Flash is not as restricted by the browser sandbox.
- Flex supports REST better.
- GWT works best if UI and backend are in same project.
- SOFEA UIs are fun, but not for every application.
- **Don't Believe The Hype!**
  - Prototype and draw your own conclusions.

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Questions?

http://raibledesigns.com/rd/page/publications

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Parties at OSCON

- Tonight (Wednesday)
  - Expo Hall (6-6:30)
  - RedMonk at Kells (8-10)
  - OpenSolaris/MySQL/Zend at DoubleTree Hotel (8-12)
- Tomorrow
  - SourceForge Awards Party at Jupiter Hotel (6-9)
  - BeerForge III at Bossanova (8-11)
- http://upcoming.yahoo.com/tag/oscon