



JRuby
+ Rails =

Awesome Java Web Framework!

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Jfokus 2011

Ruby: Developer Happiness



=





**“Ruby is the glue
that doesn't set”**

- Dave Thomas

http://pragdave.pragprog.com/pragdave/2006/06/glue_that_doesn.html

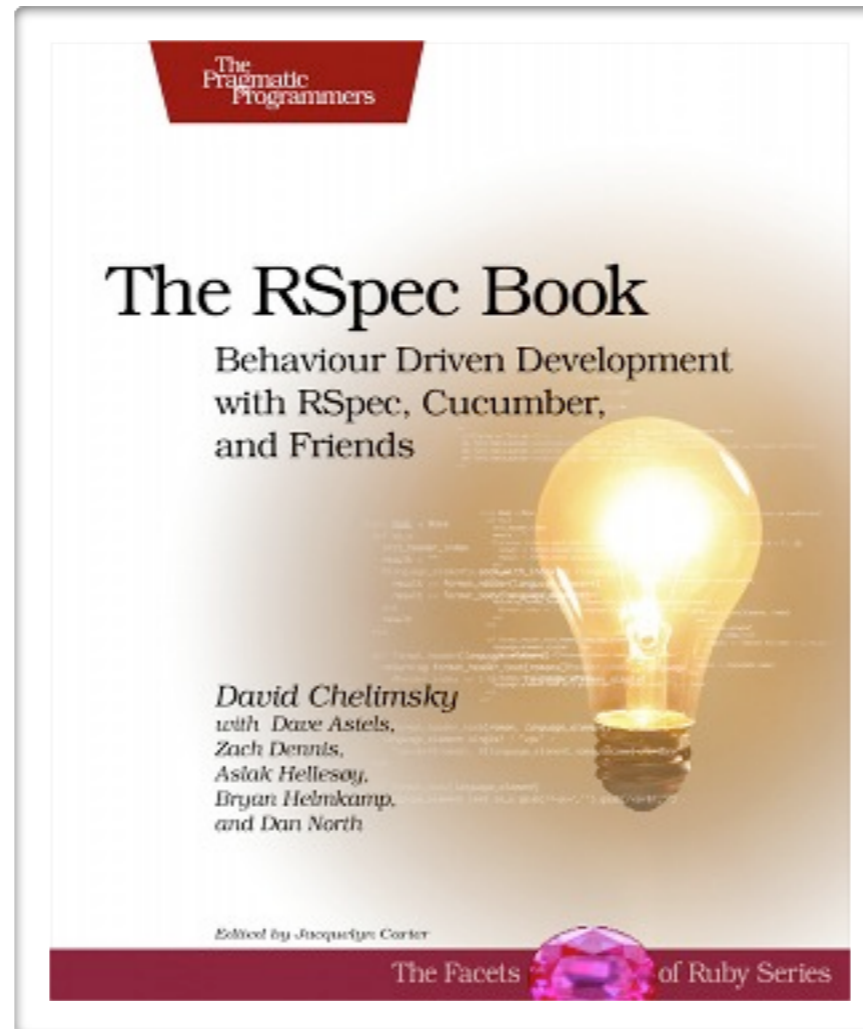


**Ruby =
innovation**

Testing

RSpec

<http://rspec.info/>



Cucumber

<http://cukes.info/>



126,889,821 downloads

of 20,699 gems cut since July 2009

Welcome to your community RubyGem host.

Find your gems easier, publish them faster, and have fun doing it.

LEARN

Install RubyGems 1.5.2

Ruby's premier packaging system

Browse the Docs

The comprehensive guide on RubyGems

Gem Specification

Your gem's interface to the world

SHARE

```
gem update --system
```

Update to the latest RubyGems version

```
gem build foo.gemspec
```

Build your gem

```
gem push foo-1.0.0.gem
```

Deploy your gem instantly

RubyGems.org is the Ruby community's gem hosting service. **Instantly publish** your gems and install them. **Use the API** to interact and find out more information about available gems. **Become a contributor** and enhance the site with your own changes.



Ruby

Dynamic language of the cloud

Ruby: Dynamic, Object-Oriented



Duck-Typing

```
def area(width = 10, height = 2 * width)
  width * height
end
```

```
p area          # => 200
p area 5        # => 50
p area 5, 20    # => 100
p area "10", 4  # => ?
```

Duck-Typing

```
p area "10", 4 # => "10101010"
```

```
# From Ruby API docs:
```

```
# String#*(num)
```

```
#
```

```
# Returns a new String containing num copies of  
# the receiver.
```

```
#
```

```
# "Ho! " * 3 #=> "Ho! Ho! Ho! "
```

```
area true, false
```

```
# => NoMethodError: undefined method `*' for
```

```
# true:TrueClass
```

Flexible Syntax

```
def set_options(env, opts)
end
```

```
set_options(:production, {"caching" => "on", "debug" => "false"})
```

```
set_options(:production, "caching" => "on", "debug" => "false")
```

```
set_options :production, {"caching" => "on", "debug" => "false"}
```

```
set_options :production, "caching" => "on", "debug" => "false"
```


Blocks

Ruby

```
list = [1, 2, 3, 4]

list.each {|n| puts n }

list.each do |n|
  puts n
end
```

Java

```
List<Integer> list = Arrays.asList(1, 2, 3, 4);

for (Integer n : list) {
    System.out.println(n);
}
```

Blocks

Ruby

```
File.open(__FILE__) do |file|  
  file.each_line do |line|  
    puts line  
  end  
end
```

Java

```
BufferedReader file =  
    new BufferedReader(new FileReader("Blocks.java"));  
try {  
    String line;  
    while ((line = buf.readLine()) != null) {  
        System.out.println(line);  
    }  
} finally {  
    file.close();  
}
```

Open Classes

```
msg = "Scramble this so you can't read it!"  
msg.rot13!
```

```
# => NoMethodError: undefined method `rot13!' for  
#      "Scramble this so you can't read it!":String
```


Open Classes

```
class String
  def rot13!
    0.upto(length - 1) do |i|
      case self[i]
      when ?a..?z
        self[i] = ?a + ((self[i] - ?a) + 13) % 26
      when ?A..?Z
        self[i] = ?A + ((self[i] - ?A) + 13) % 26
      end
    end
  end
  self
end
end
```

Open Classes

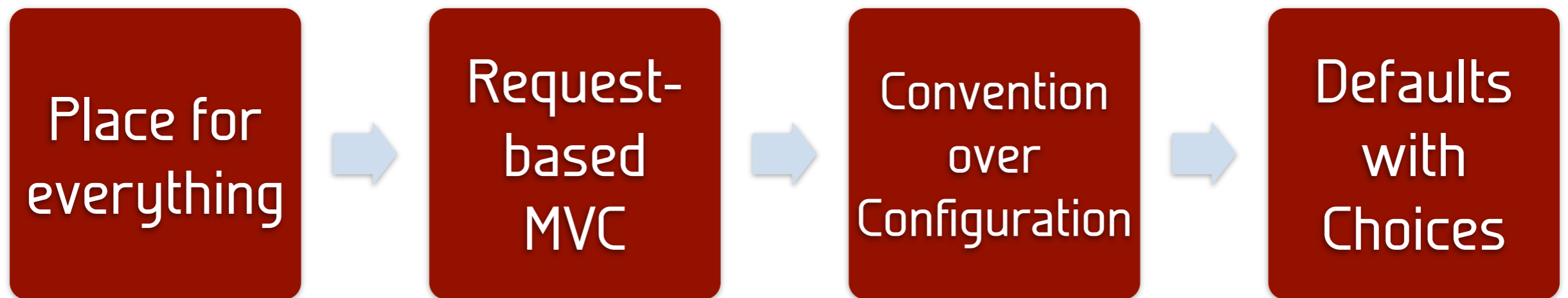
```
puts msg.rot13!  
# => "Fpenzoyr guvf fb lbh pna'g ernq vg!"  
puts msg.rot13!  
# => "Scramble this so you can't read it!"
```



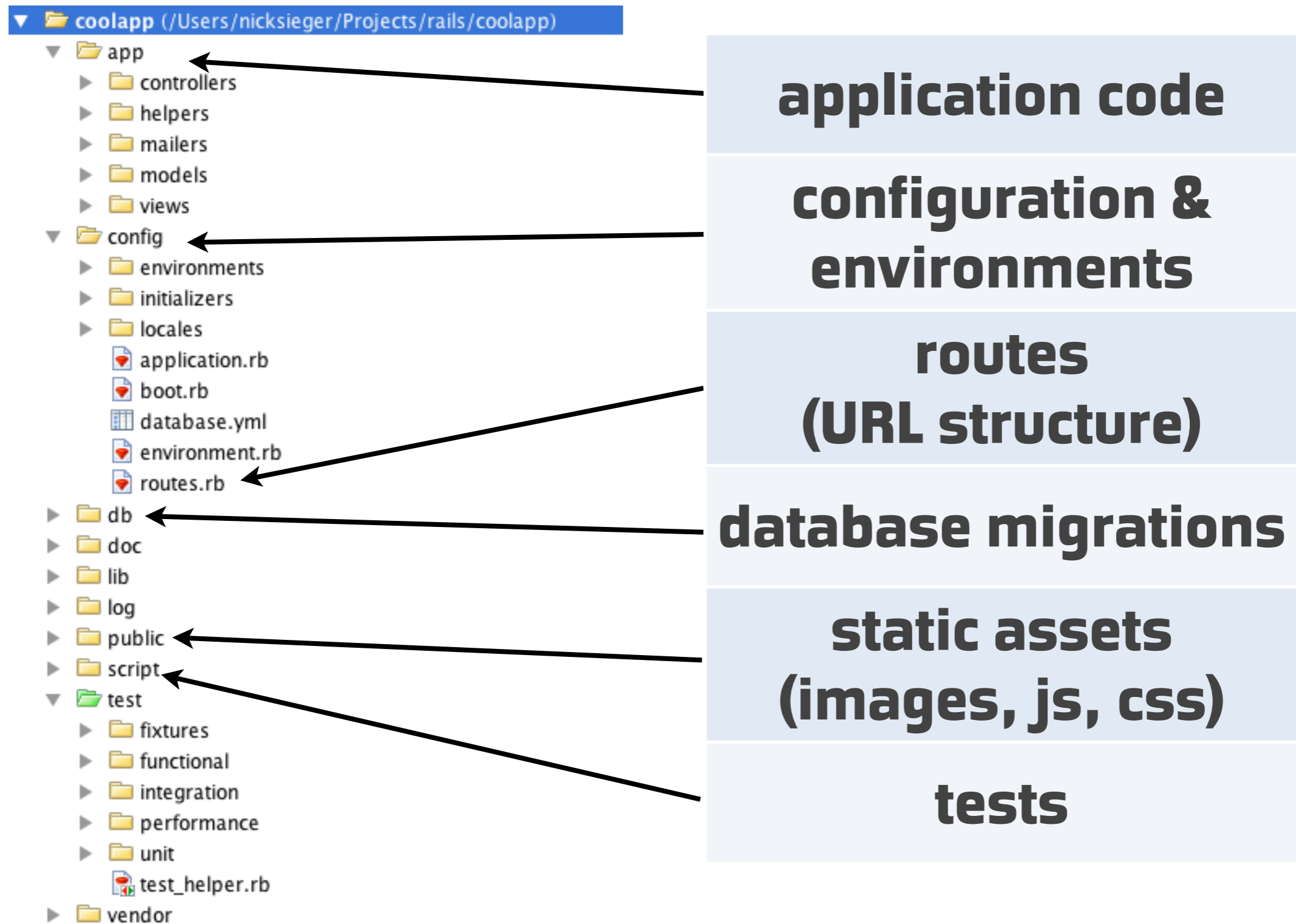
Rails 3

Dynamic framework of the cloud

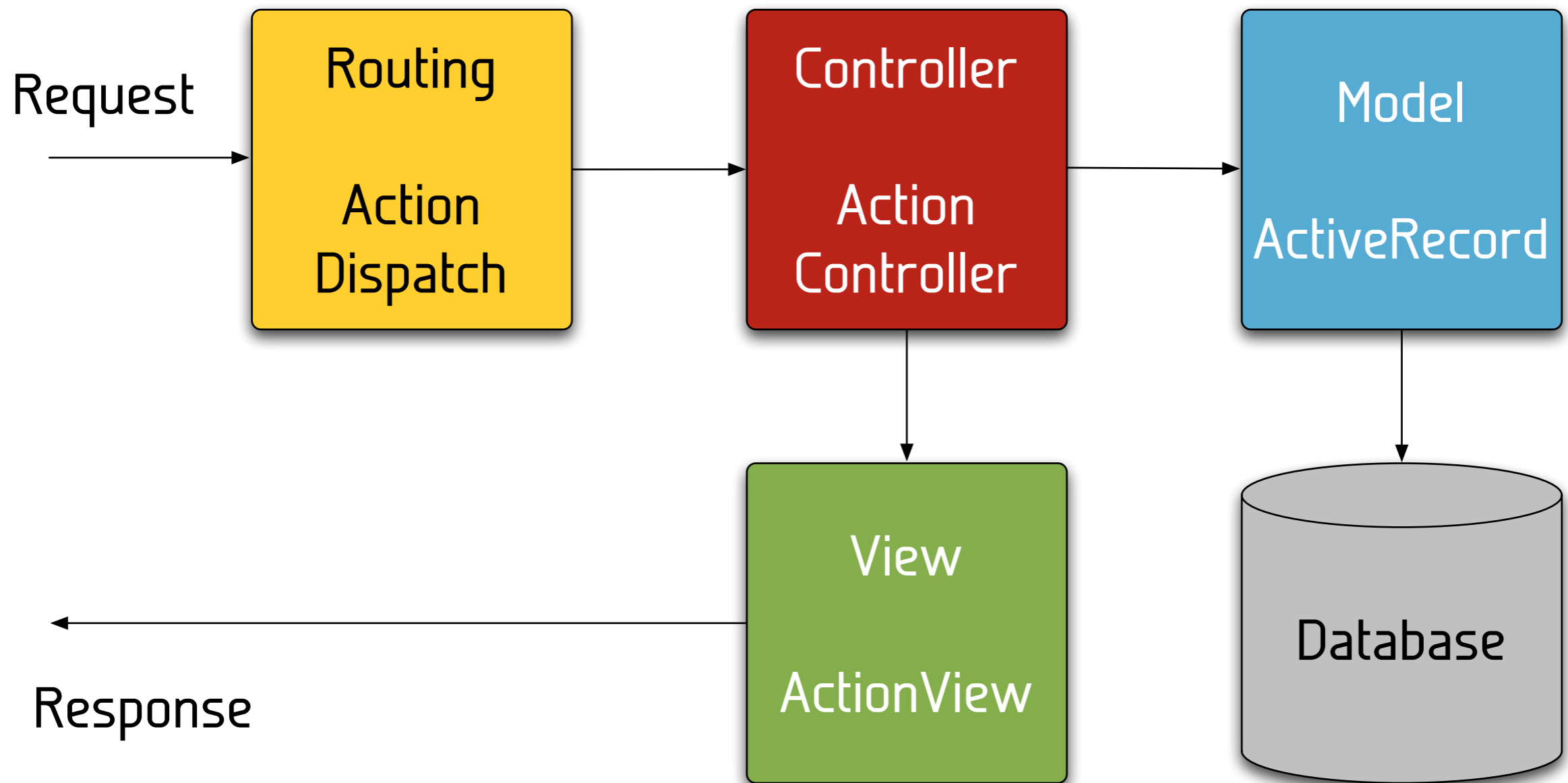
Opinionated Framework



Place for everything



Request-based MVC



Convention over Configuration

URL	GET /people
Routing	resources :people #=> people#index
Controller	<pre># app/controllers/people_controller.rb class PeopleController < ApplicationController def index @people = Person.all end end</pre>
Model	<pre># app/models/person.rb class Person < ActiveRecord::Base end</pre>
View	app/views/people/index.html.erb

Defaults with Choices

	Default	Alternatives
ORM	ActiveRecord	DataMapper, MongoMapper, Sequel, Any object with ActiveRecord
View Templates	ERb	HAML, XML Builder, Markaby, RedCloth (Textile), BlueCloth (Markdown)
JavaScript Framework	Prototype	jQuery
Database	SQLite3	MySQL, PostgreSQL, Oracle, more via JRuby + JDBC
Test Framework	Test::Unit	RSpec, Cucumber

Why Rails?

COMPARING JVM WEB FRAMEWORKS

Matt Raible

<http://raibledesigns.com>

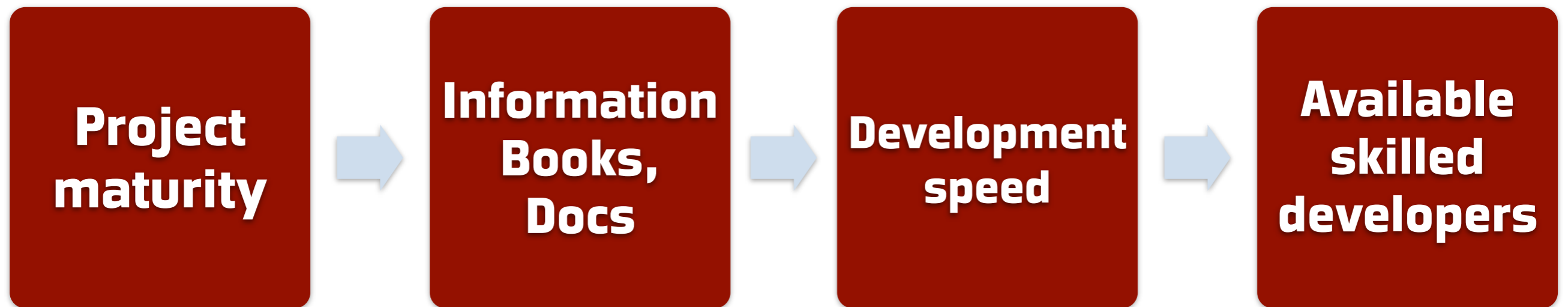
Images by Stuck in Customs - <http://www.flickr.com/photos/stuckincustoms>

© 2010 Raible Designs

<http://j.mp/raible-jvm-frameworks>

Why Rails?

Consider...



Installing Rails

```
INSTALL > gem install rails
```

New Application

```
$ rails new coolapp -m http://jruby.org  
create  
create  README  
create  Rakefile  
...
```

Dependencies with Bundler

```
$ cd coolapp
```

```
$ bundle install
```

```
Fetching source index for http://rubygems.org/
```

```
Using rake (0.8.7)
```

```
Using abstract (1.0.0)
```

```
...
```

```
Using rails (3.0.3)
```

```
Your bundle is complete!
```


Generate Scaffolding

```
$ rails generate scaffold person email:string password:string
  invoke  active_record
  create  db/migrate/20101214020707_create_people.rb
  create  app/models/person.rb
  invoke  test_unit
  create  test/unit/person_test.rb
  create  test/fixtures/people.yml
  route  resources :people
  ...
```

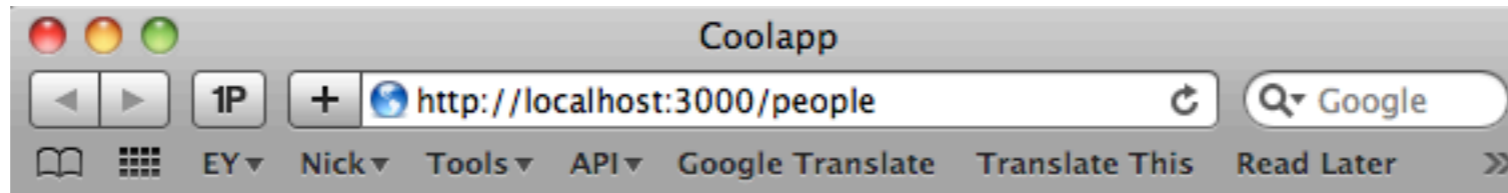
Migrate Database

```
$ rake db:migrate
(in /Users/nicksieger/Projects/rails/coolapp)
== CreatePeople: migrating =====
-- create_table(:people)
   -> 0.0040s
   -> 0 rows
== CreatePeople: migrated (0.0040s) =====
```

Start Dev Server

```
$ rails server
=> Booting WEBrick
=> Rails 3.0.3 application starting in development on http://0.0.0.0:3000
=> Call with -d to detach
=> Ctrl-C to shutdown server
[2010-12-13 20:11:28] INFO WEBrick 1.3.1
[2010-12-13 20:11:28] INFO ruby 1.8.7 (2010-12-10) [java]
[2010-12-13 20:11:28] INFO WEBrick::HTTPServer#start: pid=21022 port=3000
```

First Page



Listing people

Email Password

[New Person](#)



Controller

```
class PeopleController < ApplicationController
  # GET /people
  # GET /people.xml
  def index
    @people = Person.all

    respond_to do |format|
      format.html # index.html.erb
      format.xml { render :xml => @people }
    end
  end

  def show; end
  def new; end
  def edit; end
  def create; end
  def update; end
  def destroy; end
end
```


Model

```
class Person < ActiveRecord::Base  
end
```

Console

```
$ rails console  
Loading development environment (Rails 3.0.3)  
irb(main):001:0> Person.create :email => "nsieger@engineyard.com", ...  
=> #<Person id: 1, email: "nsieger@engineyard.com", ...>
```



Rails 3 and JRuby

Rails 3.0 has been underway for a good two years, so it's with immense pleasure that we can declare it's finally here. We've brought the work of more than 1,600 contributors together to make everything better, faster, cleaner, and more beautiful.

Search:

Installation

```
gem install rails --version 3.0.0.
```

We also have a Rails [v3.0.0 tag](#) and a [3-0-stable branch](#).

Rails 3.0 has been designed to work with Ruby 1.8.7, Ruby 1.9.2, and JRuby 1.5.2+.

[RoR Podcast](#)

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[General](#)

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[Edge](#)

```
# SELECT * FROM users
# WHERE name = "david" AND age > 29
# ORDER BY name
# LIMIT 20
users.order(:name).each { |user| puts user.name }
```

Read more in [new Active Record guide](#) and watch the [Dive into Rails 3: ARel video](#).

New router for Action Controller

When we switched to a REST-based approach for controllers in Rails 2, we patched on the syntax to the existing router while we were waiting to see if the experiment panned out.

It did and for Rails 3 we've gone back and revamped the syntax completely to favor the REST style with less noise and more flexibility:

http://ci.jruby.org/

Jenkins

search

deploy | log out

Jenkins » rails-3-0-stable

ENABLE AUTO REFRESH

[Back to Dashboard](#)

[Status](#)

[Changes](#)

[Workspace](#)

[Build Now](#)

[Delete Project](#)

[Configure](#)

[Git Polling Log](#)

Project rails-3-0-stable

[add description](#)

Disable Project

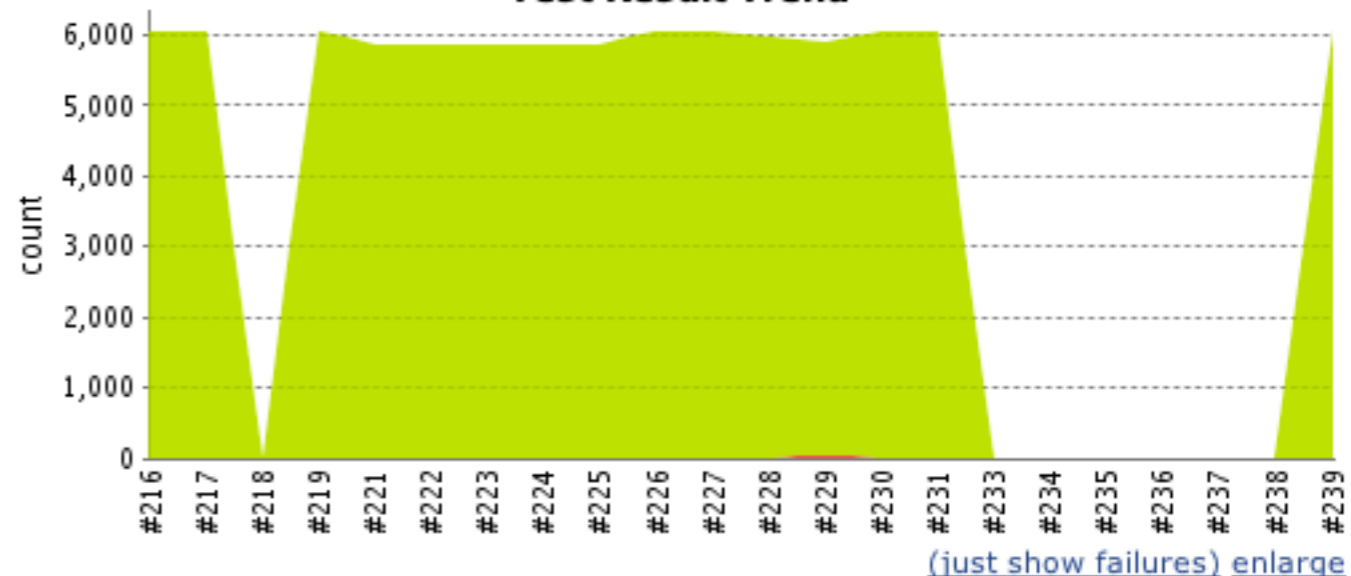
Configurations

[component=actionmailer](#) [component=activesupport](#) [component=actionpack](#) [component=activeresource](#) [component=activemodel](#)

Downstream Projects

[rails-3-0-stable-activerecord-jruby-jdbcmysql](#)
[rails-3-0-stable-activerecord-jruby-jdbcsqlite3](#)

Test Result Trend



[\(just show failures\)](#) [enlarge](#)

Build History [\(trend\)](#)

- [#239 Feb 11, 2011 2:25:52 PM](#)
- [#238 Feb 11, 2011 12:48:02 PM](#)
- [#237 Feb 11, 2011 11:29:47 AM](#)
- [#236 Feb 9, 2011 3:31:22 PM](#)
- [#235 Feb 4, 2011 4:31:19 PM](#)
- [#234 Feb 4, 2011 2:31:22 PM](#)
- [#233 Feb 4, 2011 2:31:31 AM](#)



JRuby

Dynamic toolkit of the cloud



Getting JRuby

<http://jruby.org/download>

JRuby via Maven

Group ID: org.jruby

Artifact IDs: jruby, jruby-complete

JRuby

drive java • embed • compile

Drive Java

Ruby

```
synth = javax.sound.midi.MidiSystem.synthesizer  
synth.open  
channel = synth.channels[0]
```

Java

```
import javax.sound.midi.*;  
  
Synthesizer synth = MidiSystem.getSynthesizer();  
synth.open();  
final MidiChannel channel = synth.getChannels()[0];
```

Drive Java

Ruby

```
frame = javax.swing.JFrame.new "Music Frame"  
frame.set_size 600, 100  
frame.layout = java.awt.FlowLayout.new
```

Java

```
import java.awt.*;  
  
JFrame frame = new JFrame("Music Frame");  
frame.setSize(600, 100);  
frame.setLayout(new java.awt.FlowLayout());
```

Drive Java

Ruby

```
KEYS.each do |value, char|
  button = javax.swing.JButton.new char
  button.add_action_listener do |e|
    channel.note_on value, 99
  end
  frame.add button
end
```

Java

```
for (Iterator i = keys.entrySet().iterator(); i.hasNext(); ) {
  Map.Entry entry = (Map.Entry) i.next();
  final Integer value = (Integer) entry.getKey();
  String name = (String) entry.getValue();
  JButton button = new JButton(name);
  button.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent e) {
      channel.noteOn(value, 99);
    }
  });
  frame.add(button);
}
```


MIDI Swing

Embed

```
import org.jruby.embed.ScriptingContainer;

public class EmbedJRuby {
    public static void main(String[] args) {
        ScriptingContainer container = new ScriptingContainer();
        container.runScriptlet("puts 'Hello from Ruby'");
    }
}
```

<http://wiki.jruby.org/>
RedBridge

Compile

```
# engine.rb
require 'java'
java_package 'demo'

class Engine
  java_implements 'java.lang.Runnable'

  java_signature 'void run()'
  def run
    puts "The #{self.inspect} is running."
  end
end
```

Compile

```
// Starter.java
import demo.Engine;

public class Starter {
    public static void main(String[] args) {
        Runnable engine = new Engine();
        engine.run();
    }
}
```

Compile

```
$ jrubbyc --javac engine.rb Starter.java  
Generating Java class Engine to demo/Engine.java  
javac -d . -cp jrubby.jar:. demo/Engine.java Starter.java
```


Compile

```
// Engine.java  
package demo;  
  
public class Engine implements Runnable {  
    public void run() { ... }  
}
```

Compile

```
$ java -cp jruby.jar:. Starter  
The #<Engine:0x59c958af> is running.
```

JRuby 1.6

Release soon!

ruby 1.9.2 • c-ext • perf • dynopt • java

activerecord-jdbc

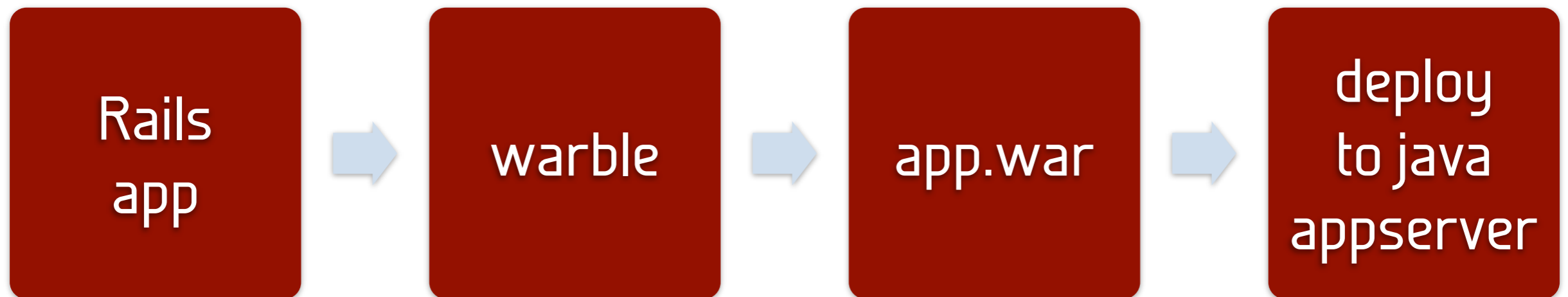
ActiveRecord with JDBC databases

```
INSTALL > gem install activerecord-jdbc-adapter
```

Warbler

```
INSTALL > gem install warbler
```

- Create a Java EE .war file from a Rails application
- "Looks like Java" to the ops staff



JRuby Deployment

Ruby servers

WEBrick

Trinidad

TorqueBox

WAR files

GlassFish

Tomcat

JBoss

Cloud

EY AppCloud

AppEngine

AWS EB

Enterprise Software

Evolving and adapting long-running projects with legacy codebases

Sagrada Família, Barcelona, Spain





**nativity
facade**



**passion
facade**



scaffolding interior



2005

Ryugyuong Hotel, North Korea

2010



seismic retrofit



Szkieletor, Kraków, Poland



Rondo Mogilskie

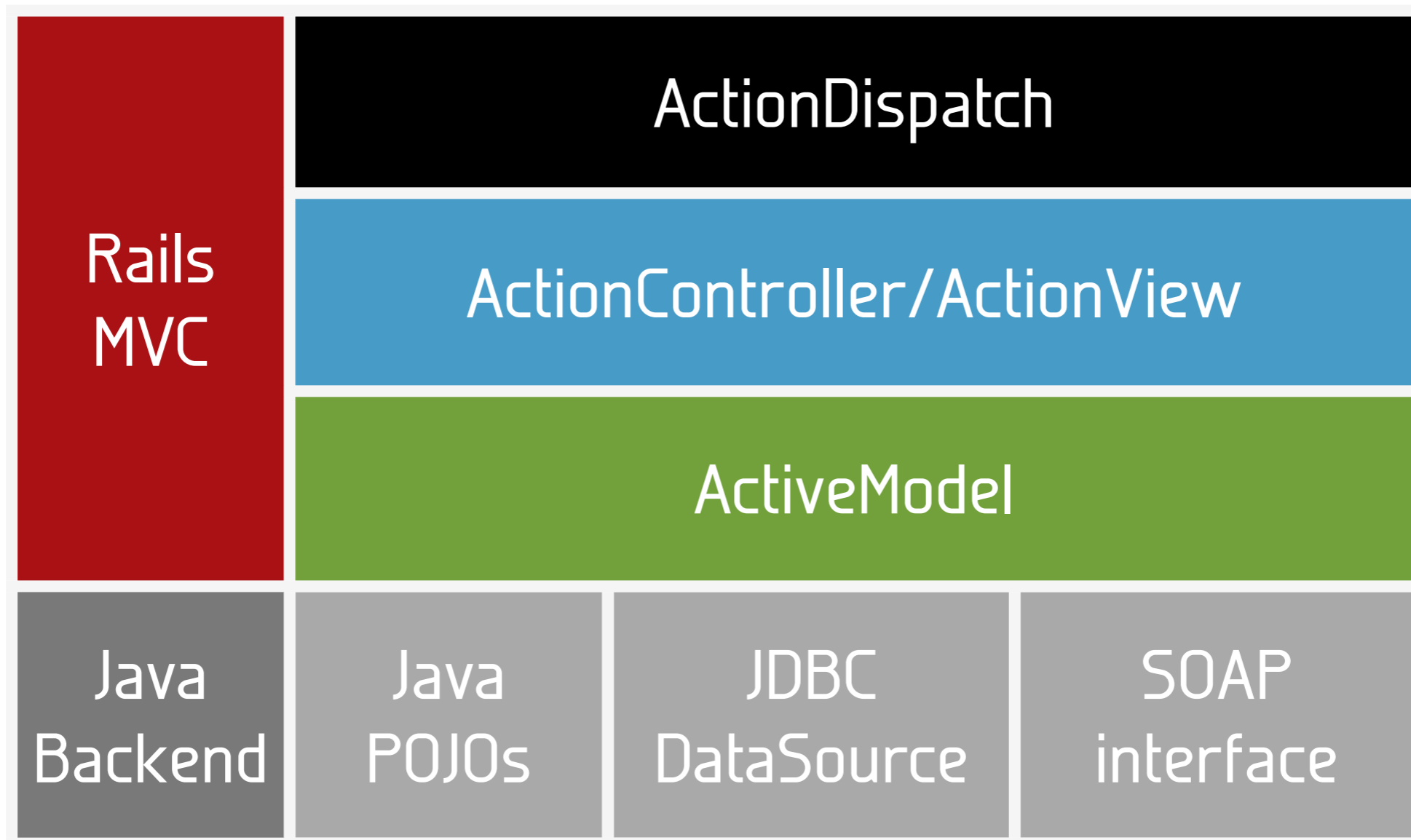
|Linia |Przystanek docelowy |Odjazd

50 Krowodrza Górka 1 min

Ważne czasy mogą być: 13:21

TEMAS

Hybrid Rails/Java App



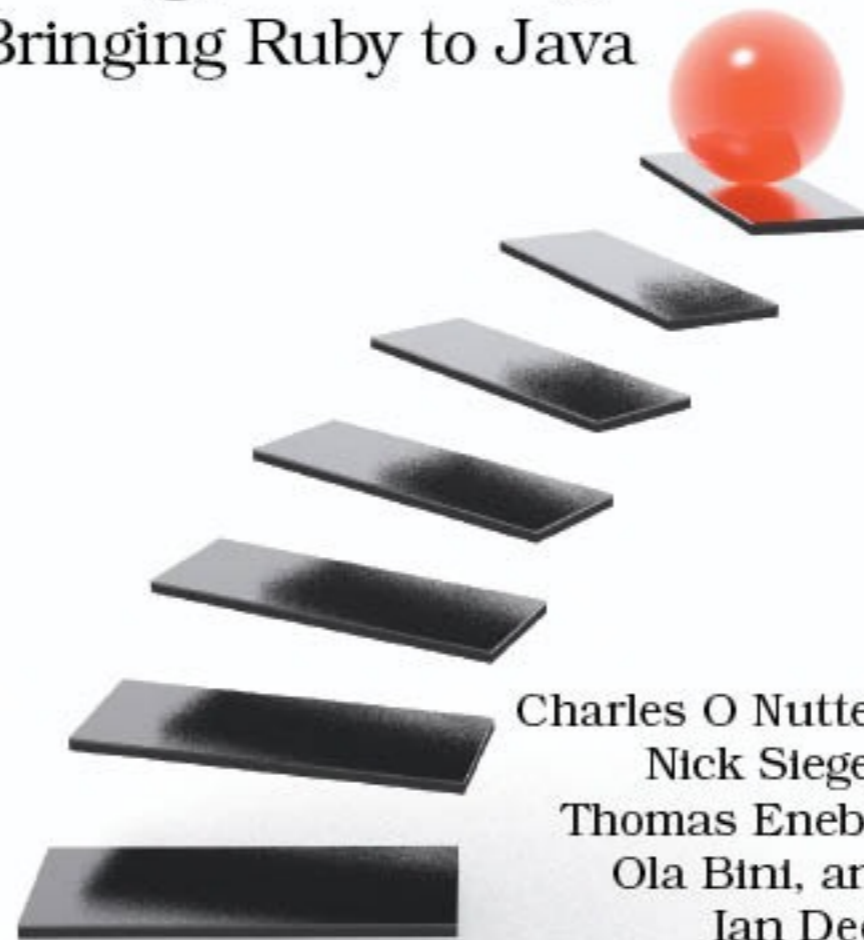
[https://github.com/nicksieger/
spring-petclinic](https://github.com/nicksieger/spring-petclinic)

Metaphor	Use Ruby, JRuby, and Rails to...
Sagrada Familia	<ul style="list-style-type: none">• Build new facade faster• Scaffolding during refactoring
Ryugyong Hotel	<ul style="list-style-type: none">• Revive a project with a new face
Seismic retrofit	<ul style="list-style-type: none">• Reinforce business rules with a DSL• Harden security
Szkieletor	<ul style="list-style-type: none">• Find novel uses for abandoned code

The
Pragmatic
Programmers

Using JRuby

Bringing Ruby to Java



Charles O Nutter,
Nick Steger,
Thomas Enebo,
Ola Bini, and
Ian Dees

Edited by Jacquelyn Carter

The Facets  of Ruby Series

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Professional Services

Engine Yard service is amazing...The support team has deep knowledge of Rails and how to scale high-growth applications, and they're always available. -Charles Ju, CEO, PlayMesh

Performance Analysis

\$3,000

A Performance Expert will...

- Review your application
- Identify bottlenecks
- Recommend optimizations

Download sample analysis

Important Metrics

Open Source Best Practices

\$2,000 per day

An open source engineer will...

- Meet with your team
- Understand your problems
- Provide expert advice

Technologies

Ruby & Rails Actions, NoSQL, and Migrations

JRuby Priority Club

\$15,000 minimum

A JRuby core engineer will...

- Understand your requirements
- Optimize JRuby to your environment

Supported Environments

JVMs¹

Sun JDK 5/6, OpenJDK 6, and the most recent versions of IBM and

Resources

JRuby

JRuby.org

[Resources for
Getting Started with
Ruby on Rails](#)

[JRubyConf 2010
Videos](#)

[Rails for
Zombies](#)





Nick Sieger

nsieger@engineyard.com

Slides: <http://j.mp/sieger-jfokus>

Images

http://en.wikipedia.org/wiki/File:Sagrada_Familia_01.jpg

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