

CS 683 Emerging Technologies  
Fall Semester, 2006  
Doc 17 Rails Intro  
Oct 17, 2006

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# References

Agile Web Development with Rails, Thomas & Hansson, Pragmatic Bookshelf, 2005

<http://www.rubyonrails.org/> Main Ruby on Rails site

<http://wiki.rubyonrails.com/rails> Lots of howtos

# Installing Rails

Make sure Ruby & Gems is installed

```
ruby -v
```

```
gem --version
```

If not installed use installer at

<http://rubyforge.org/projects/rubyinstaller/>

**gem install rails --include-dependencies**

For more information

see:

<http://download.rubyonrails.com/>

<http://wiki.rubyonrails.com/rails/pages/GettingStartedWithRails>

# Ruby & Rails on Rohan

Both are located in /usr/local/bin/

Running a ruby program

```
rohan 38-> ruby hello.rb
```

```
hello.rb
```

```
puts 'hello'
```

Interactive Ruby

```
rohan 39-> irb
```

```
irb(main):001:0> puts 'hello'
```

```
hello
```

```
=> nil
```

```
irb(main):002:0> a = 5
```

```
=> 5
```

```
irb(main):003:0>
```

# Ruby Scripts On Rohan

hello.rb

```
#!/usr/bin/env ruby
```

```
puts 'hello'
```

```
rohan 41-> chmod a+x hello.rb
```

```
rohan 42-> hello.rb
```

```
hello
```

# Creating Rails App on Rohan

rohan 55-> rails demo

```
create
create app/controllers
create app/helpers
create app/models
create app/views/layouts
create config/environments
create components
create db
create doc
create lib
create lib/tasks
create log
create public/images
create public/javascripts
create public/stylesheets
create script/performance
create script/process
create test/fixtures
create test/functional
create test/integration
create test/mocks/development
create test/mocks/test
create test/unit
create vendor
create vendor/plugins
create tmp/sessions
create tmp/sockets
create tmp/cache
create Rakefile
create README
create app/controllers/application.rb
create app/helpers/application_helper.rb
create test/test_helper.rb
create config/database.yml
create config/routes.rb
```

```
create public/.htaccess
create config/boot.rb
create config/environment.rb
create config/environments/production.rb
create config/environments/development.rb
create config/environments/test.rb
create script/about
create script/breakpointer
create script/console
create script/destroy
create script/generate
create script/performance/benchmark
create script/performance/profiler
create script/process/reaper
create script/process/spawner
create script/runner
create script/server
create script/plugin
create public/dispatch.rb
create public/dispatch.cgi
create public/dispatch.fcgi
create public/404.html
create public/500.html
create public/index.html
create public/favicon.ico
create public/robots.txt
create public/images/rails.png
create public/javascripts/prototype.js
create public/javascripts/effects.js
create public/javascripts/dragdrop.js
create public/javascripts/controls.js
create public/javascripts/application.js
create doc/README_FOR_APP
create log/server.log
create log/production.log
create log/development.log
create log/test.log
```

# Running the Server on Rohan

rohan 62-> ruby script/server

=> Booting WEBrick...

=> Rails application started on http://0.0.0.0:3000

=> Ctrl-C to shutdown server; call with --help for options

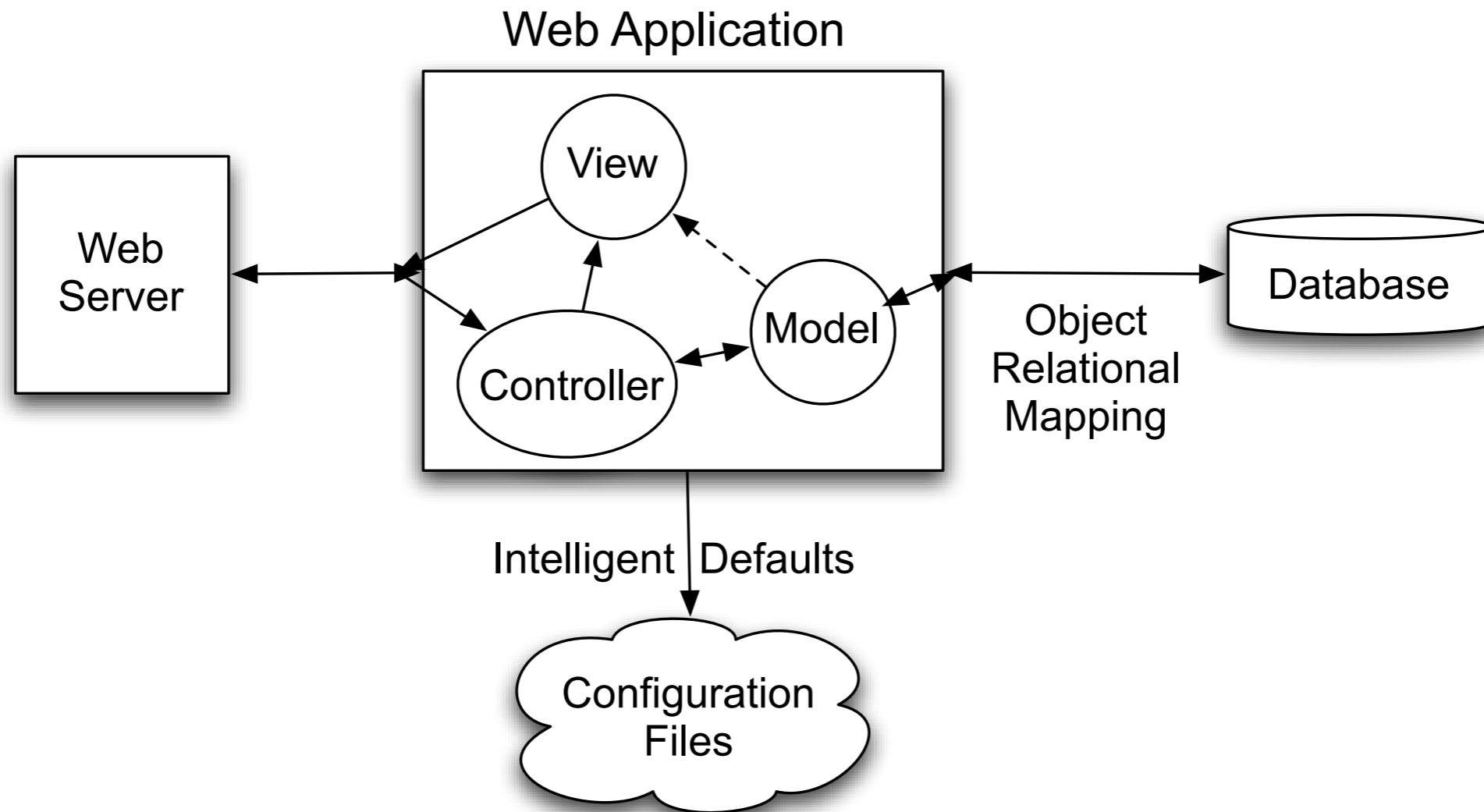
^C[2006-10-17 16:01:08] INFO WEBrick 1.3.1

[2006-10-17 16:01:08] INFO ruby 1.8.4 (2005-12-24) [sparc-solaris2.10]

[2006-10-17 16:01:08] INFO WEBrick::HTTPServer#start: pid=28770 port=3000

Hello Example

# Rails Architecture



# Creating a new Application

AI 40->rails demo

AI 41->cd demo

AI 42->ls

```
README          config/         log/           tmp/
Rakefile        db/            public/       vendor/
app/            doc/           script/
components/    lib/           test/
```

# Starting Server

Run the Rails Webserver - WEBrick

Al 43->ruby script/server

=> Booting WEBrick...

=> Rails application started on http://0.0.0.0:3000

=> Ctrl-C to shutdown server; call with --help for options

[2006-10-16 21:31:30] INFO WEBrick 1.3.1

[2006-10-16 21:31:30] INFO ruby 1.8.2 (2004-12-25) [powerpc-darwin8.0]

[2006-10-16 21:31:30] INFO WEBrick::HTTPServer#start: pid=306 port=3000

# http://0.0.0.0:3000



## Welcome aboard

You're riding the Rails!

[About your application's environment](#)

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### Getting started

Here's how to get rolling:

1. Create your databases and edit `config/database.yml`

Rails needs to know your login and password.

Search the Rails site

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### Join the community

[Ruby on Rails](#)

[Official weblog](#)

[Mailing lists](#)

[IRC channel](#)

[Wiki](#)

[Bug tracker](#)

# Generating Controllers and Tests

```
Al 15->ruby script/generate controller Say
exists app/controllers/
exists app/helpers/
create app/views/say
exists test/functional/
create app/controllers/say_controller.rb
create test/functional/say_controller_test.rb
create app/helpers/say_helper.rb
```

# Controller and View

demo/app/controllers/say\_controller.rb

```
class SayController < ApplicationController
  def hello
  end
end
```

demo/app/views/say/hello.rhtml

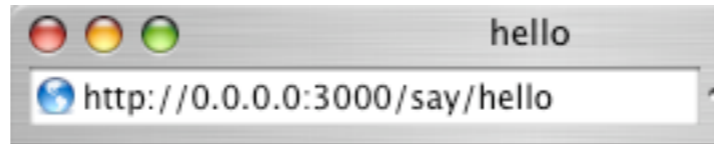
```
<html>
  <head>
    <title>hello</title>
  </head>
  <body>
    Hello from Rails
  </body>
</html>
```

# Convention over Configuration

# **http://0.0.0.0:3000/say/hello**

<http://127.0.0.1:3000/say/hello>

<http://localhost:3000/say/hello>



Hello from Rails

# Dynamic Page

demo/app/controllers/say\_controller.rb

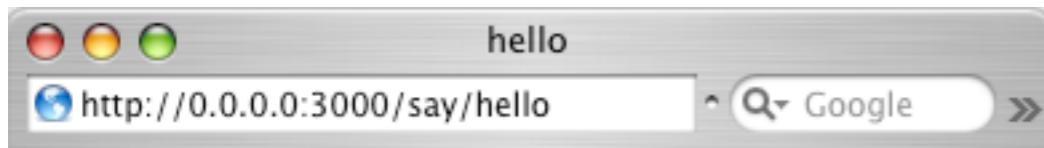
```
class SayController < ApplicationController
  def hello
    @time = Time.now
  end
end
```

demo/app/views/say/hello.rhtml

```
<html>
  <head>
    <title>hello</title>
  </head>
  <body>
    <p>It is now <%= @time %></p>

    <p>1 + 2 = <%= 1 + 2 %></p>

    <%= count = 0 %>
    <p> <%= 3.times do %>
      Hello <%= count += 1 %><br/>
    <%= end %>
  </body>
</html>
```



It is now Mon Oct 16 22:12:05 PDT 2006

1 + 2 = 3

Hello 1  
Hello 2  
Hello 3

# Links

demo/app/views/say/hello.rhtml

```
<html>
  <head>
    <title>hello</title>
  </head>
  <body>

    <p>Say <a href="/say/goodbye">GoodBye</a></p>
    <p><%= link_to "GoodBye", :action => "goodbye" %>
  </body>
</html>
```

demo/app/views/say/goodbye.rhtml

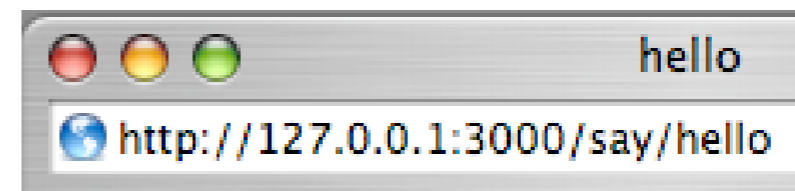
```
<html>
  <head>
    <title>Bye</title>
  </head>
  <body>
    <p>Goodbye</p>

    <p>Say <%=
      link_to( "Hello", :action => "hello") %>
  </body>
</html>
```

demo/app/controllers/say\_controller.rb

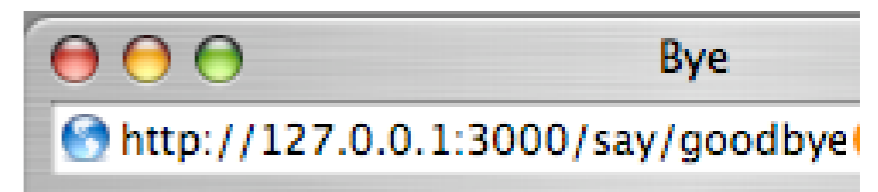
```
class SayController < ApplicationController
  def hello
  end

  def goodbye
  end
end
```



Say [GoodBye](#)

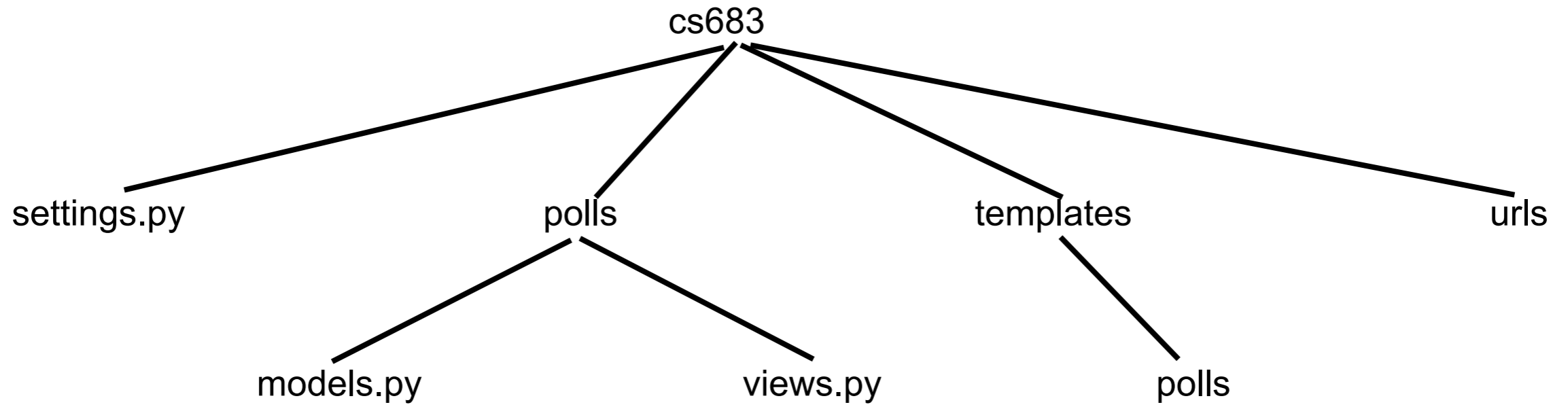
[GoodBye](#)



Goodbye

Say [Hello](#)

Compared to What?



## verses

README	config/	log/	tmp/
Rakefile	db/	public/	vendor/
app/	doc/	script/	
components/	lib/	test/	

`http://127.0.0.1:8000`

`verses`

`http://0.0.0.0:3000`

```
from django.shortcuts import render_to_response
from datetime import datetime
```

```
def helloTime(request):
    return render_to_response('simpleExamples/helloTime.html',
        {'now': str(datetime.now())} )
```

## verses

```
class SayController < ApplicationController
  def hello
    @time = Time.now
  end
end
```

```
<html>
<body>
  Hello World at: {{ now }}
</body>
</html>
```

## verses

```
<html>
<body>
  Hello World at: <%= @time %>
</body>
</html>
```

```
<a href="/say/goodbye">GoodBye</a>
```

verses

```
<%= link_to "GoodBye", :action => "goodbye" %>
```

### Site administration

Auth		
<b>Groups</b>	<a href="#">+Add</a>	<a href="#">Change</a>
<b>Users</b>	<a href="#">+Add</a>	<a href="#">Change</a>
Sites		
<b>Sites</b>	<a href="#">+Add</a>	<a href="#">Change</a>
Polls		
<b>Choices</b>	<a href="#">+Add</a>	<a href="#">Change</a>
<b>Polls</b>	<a href="#">+Add</a>	<a href="#">Change</a>

**Recent Actions**

**My Actions**

- [+Choice object](#)  
Choice
- [+Choice object](#)  
Choice
- [+Choice object](#)  
Choice
- [+Do you like Python?](#)  
Poll
- [Do you like Django Reinhardt's music?](#)  
Poll
- [Do you like Django Reinhardt's music?](#)  
Poll

verses

# Rails Pieces

# Some Parts of Rails

Active Support

Migrations

Active Record

Action Controller

Action View

Action Mailer

Action Web Service

Testing

# Documentation

Look at each Action top level class

Action Controller

<http://api.rubyonrails.org/classes/ActionController/Base.html>

<http://api.rubyonrails.org/classes/ActionView/Base.html>

<http://api.rubyonrails.org/classes/ActiveRecord/Base.html>

# Other Documentation

<http://www.rubyonrails.org/docs>

# Some Debugging Hints

print statements

```
class SayController < ApplicationController
  def hello
    puts 'hello'
  end
end
```

```
<html>
  <body>
    <% puts 'cat'%>
      Hello
    </body>
</html>
```

Output occurs in standard out from ruby script/server

hello

cat

127.0.0.1 - - [17/Oct/2006:14:05:32 PDT] "GET /say/hello HTTP/1.1" 200 179

- -> /say/hello

# Logging

```
class SayController < ApplicationController
  def hello
    logger.error("A mistake")
  end
end
end
```

```
<html>
  <body>
    <% logger.warn("Be careful")%>
      Hello
    </body>
  </html>
```

Output in log file  
demo/log/development.log

Processing SayController#hello (for 127.0.0.1 at 2006-10-17 14:09:46) [GET]

Session ID: 4ab5a1f17e4b62325210ab5e78135a62

Parameters: {"action"=>"hello", "controller"=>"say"}

A mistake

Rendering say/hello

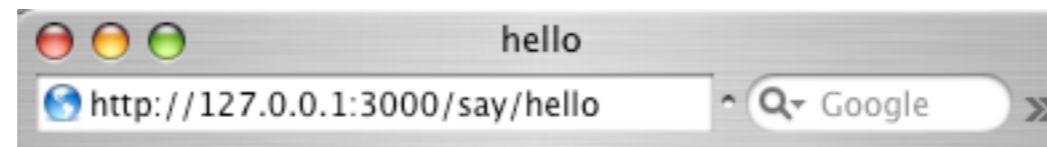
Be careful

Completed in 0.00714 (140 reqs/sec) | Rendering: 0.00440 (61%) | 200 OK [http://127.0.0.1/say/hello]

# Displaying Objects in Html

```
class SayController < ApplicationController
  def hello
    @time = Time.now
  end
end
```

```
<html>
  <body>
    <%= debug(@time) %>
  </body>
</html>
```



```
--- 2006-10-17 15:03:51.905744 -07:00
```

# Shell

`ruby script/console`

Interact with code in proper environment

# Breakpoints

```
class SayController < ApplicationController
  def hello
    cat = 5
    @dog = 10
    breakpoint("Stop in hello")
  end
end
```

With WEBrick running execute in separate window

```
AI 17->ruby script/breakpointer -c druby://127.0.0.1:42531
```

No connection to breakpoint service at druby://localhost:42531 (NameError)

Tries to connect will be made every 2 seconds...

Now in browser go to <http://127.0.0.1:3000/say/hello>

Will get Ruby debugger in script/breakpointer window

<http://wiki.rubyonrails.org/rails/pages/HowtoDebugWithBreakpoint>