

Úvod do Ruby On Rails

Karel Minařík

Karel Minařík

- Absolvent FFUK, obor **filosofie**
- Web designer a vývojář na volné noze od roku 2000
- V minulosti Flash vývojář, art director, informační architekt ve studiích Sherwood Media, ILIKETHIS!
- Doktorand **Studií nových médií** na FFUK
- (Opuštěný) blog o **Ruby on Rails** na <http://blog.karmi.cz>

→ KONTAKT: karmi@karmi.cz

1 Co je RubyOnRails?

Proč používat webový framework?

„Toto je sněhová vločka. Vaše aplikace není jedna z nich. Většina věcí, které většina lidí dělá, není nijak unikátní. Vaše potřeby nejsou nijak „zvláštní“.“

David Heinemeier Hansson,
přednáška na konferenci Future Of Web Applications, únor 2006

SELECT * FROM people WHERE id = 1;

SELECT * FROM people WHERE id = 1;

SELECT * FROM people WHERE id = 1;

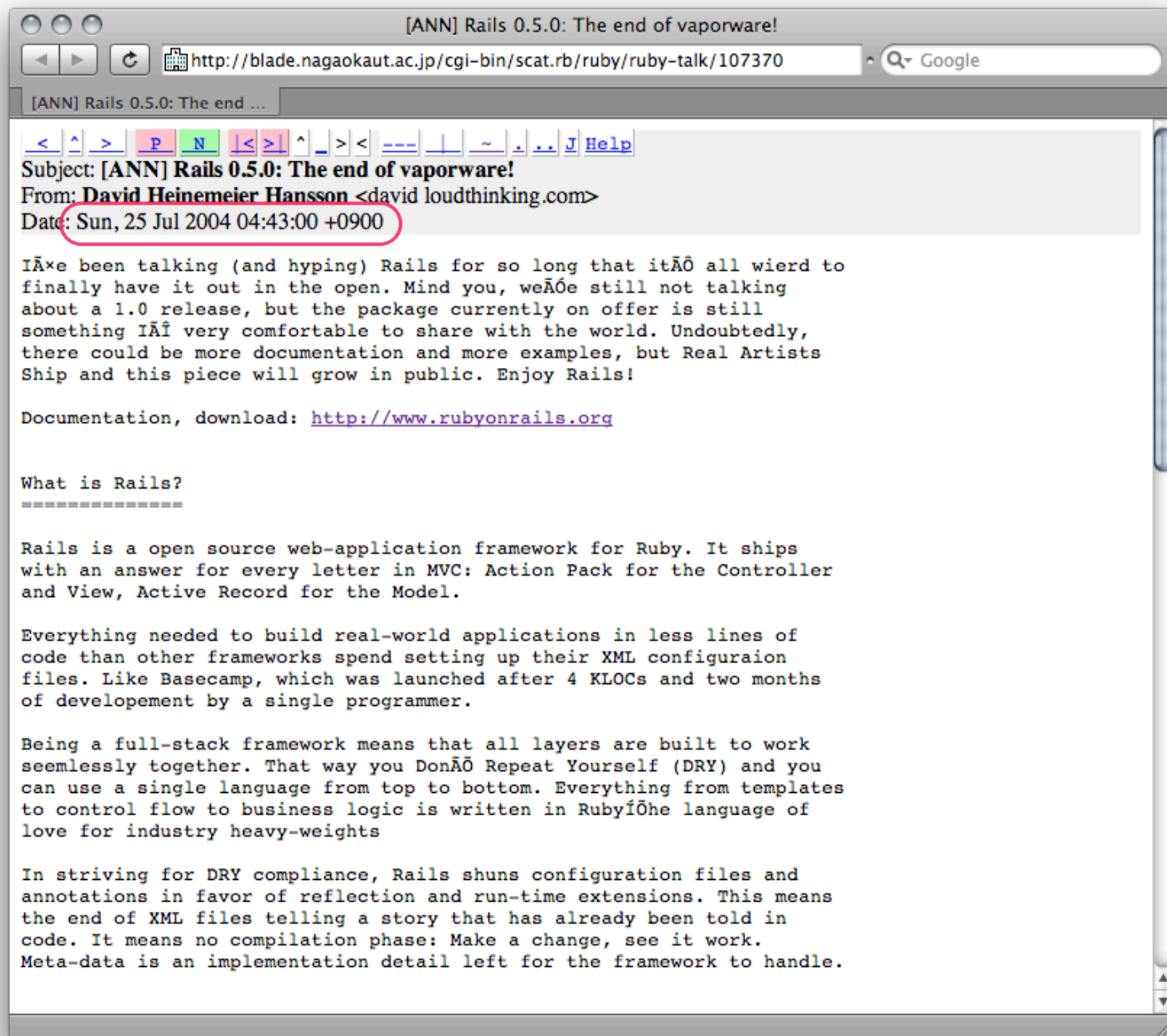
SELECT * FROM people WHERE id = 1;

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SELECT * FROM people WHERE id = 1;





Browser window: /trunk (log) - Rails Trac - Trac
URL: http://dev.rubyonrails.org/log/trunk?action=stop_on_copy&rev=5&stop_rev=1&mode=stop_on_copy
Search: Google

Navigation: {del.icio.us} ~ tumblr localhost doc _tmp rails books/cds mephisto Pickaxe Rails API Prototype API rss (46)

Header: Ruby on Rails | Screenshots | Download | Documentation | Weblog | Community | Source

Rails Trac

Search [] [Search]

Settings | Help/Guide | About Trac | Login | Register

Wiki | Timeline | Roadmap | **Browse Source** | View Tickets | Search

root / **trunk**

[View Latest Revision](#)

View log starting at 5 and back to 1

Mode:

☒ Stop on copy

☐ Follow copies

☐ Show only adds, moves and deletes

☐ Show full log messages [Update](#)

Added Modified Copied or renamed

[View changes](#)

		Rev	Chgset	Date	Author	Log Message
<input type="radio"/>	<input checked="" type="radio"/>	5	[5]	11/24/04 01:15:16	david	Allow form_tag with no arguments (resulting in a form posting to current ...
<input checked="" type="radio"/>	<input type="radio"/>	4	[4]	11/24/04 01:04:44	david	Initial

Note: See [TracRevisionLog](#) for help on using the revision log.

Download in other formats:

[XML](#) [RSS Feed](#) [ChangeLog](#)

trac
Powered by Trac 0.10.5dev
By Edgewall Software.

Visit the Ruby on Rails project at
<http://rubyonrails.org/>

trac
Powered by Trac 0.10.5dev
By Edgewall Software.

XML RSS Feed ChangeLog

2004

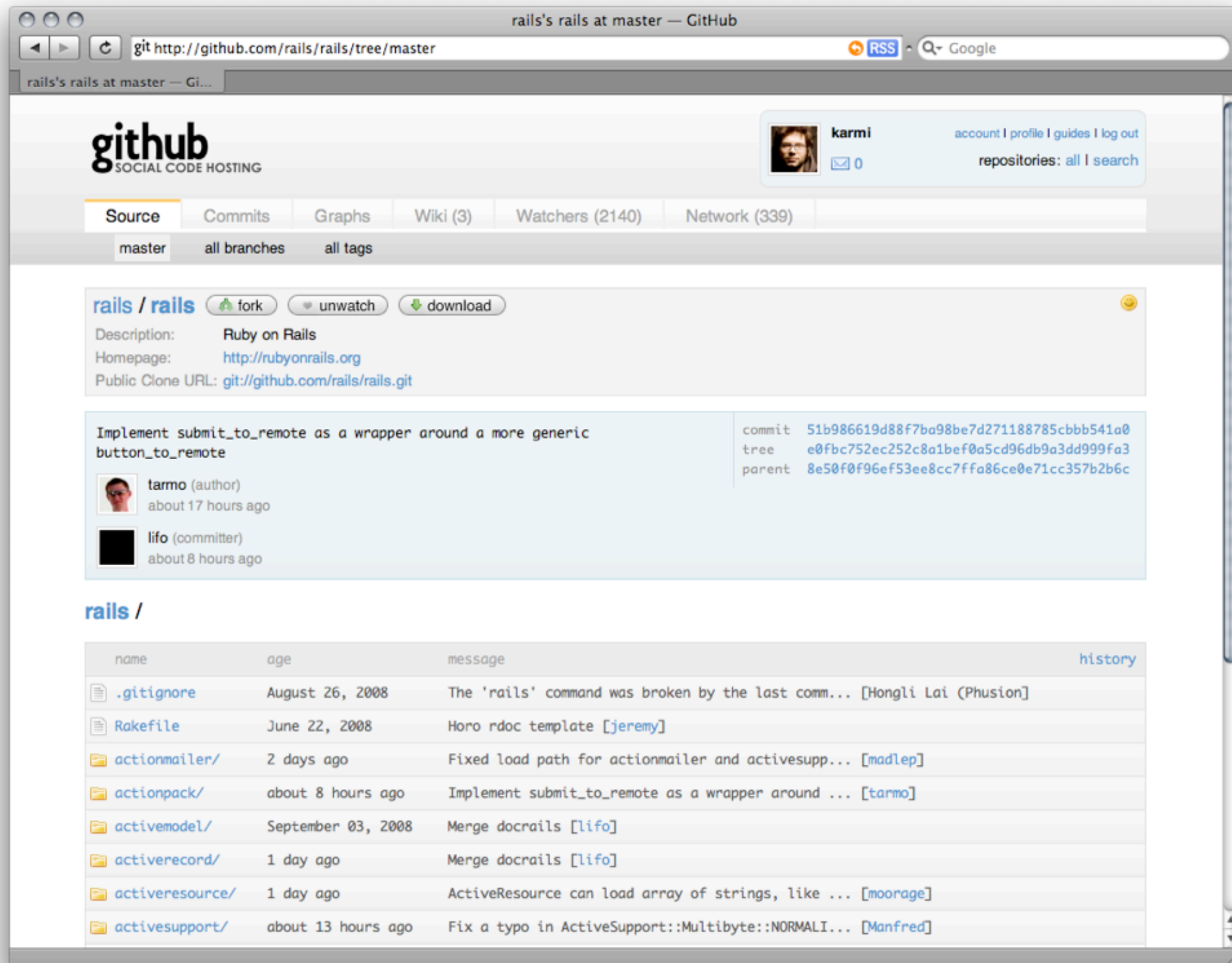
Ruby On Rails
Django

2005

Zend Framework
CakePHP

2006

Merb („lepší než Rails“)



Open source, licence MIT

rails's rails at master — GitHub


git http://github.com/rails/rails/tree/master

github SOCIAL CODE HOSTING

karmi account | profile | guides | log out
repositories: all | search

Source Commits Graphs Wiki (3) Watchers (2140) Network (339)

master all branches all tags

rails / rails  fork unwatch download









Description: Ruby on Rails
Homepage: <http://rubyonrails.org>
Public Clone URL: <git://github.com/rails/rails.git>

Implement submit_to_remote as a wrapper around a more generic button_to_remote

tarmo (author) about 17 hours ago
lifo (committer) about 8 hours ago

commit 51b986619d88f7ba98be7d271188785cbbb541a0
tree e0fbc752ec252c8a1bef0a5cd96db9a3dd999fa3
parent 8e50f0f96ef53ee8cc7ffa86ce0e71cc357b2b6c

rails /

name	age	message	history
 .gitignore	August 26, 2008	The 'rails' command was broken by the last comm... [Hongli Lai (Phusion)]	
 Rakefile	June 22, 2008	Horo rdoc template [jeremy]	
 actionmailer/	2 days ago	Fixed load path for actionmailer and activesupp... [madlep]	
 actionpack/	about 8 hours ago	Implement submit_to_remote as a wrapper around ... [tarmo]	
 activemodel/	September 03, 2008	Merge docrails [lifo]	
 activerecord/	1 day ago	Merge docrails [lifo]	
 activeresource/	1 day ago	ActiveResource can load array of strings, like ... [moorage]	
 activesupport/	about 13 hours ago	Fix a typo in ActiveSupport::Multibyte::NORMALI...	[Manfred]

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www.rubyonrails.org



```
def create
  @post = Post.new(params[:post])
  if @post.save
    flash[:notice] = 'Post was successfully'
    redirect_to :action => 'list'
  else
    render :action => 'new'
  end
end

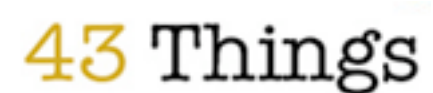
def edit
  @post = Post.find(params[:id])
end

def update
  @post = Post.find(params[:id])
  if @post.update_attributes(params[:post])
```

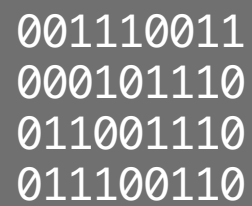
[Creating a weblog in 15 minutes](#)

Creating a weblog in 15 minutes

In 15 minutes, we go from scratch to complete weblog engine: with comments and an administrative interface. But since the actual application only took 58 lines to complete, we also have time left over to do unit testing, examine the logs, and play around with the domain model.



3 pohledy na Rails




```
001110011  
000101110  
011001110  
011100110
```



\$



a_Ω



001110011
000101110
011001110
011100110

Technologický

Model-View-Controller framework

Objektově relační mapování

Routování (→ REST)

Usnadnění práce (*helpers, extensions, pluginy, konvence, ...*)



Ekonomický

Standardizace vývoje

Rychlejší a kvalitnější vývoj

Využití existujících řešení (RubyGems, pluginy)

~~Silver bullet~~

„PR-benefit“



Filosofický

Konvence má přednost před konfigurací

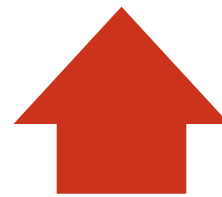
Convention Over Configuration

Kvalitativní posun celého vývoje pro web

Zavádění *best practices*

Agilní vývoj

Pragmatismus



Ruby
A Programmer's Best Friend

Programovací jazyk Ruby



— Yukihiro Matsumoto (Matz)

*„Věřím, že – alespoň do jisté míry – je smyslem života být šťastný.
Na základě tohoto přesvědčení je Ruby navrženo tak, že je
nejenom snadné, ale i zábavné v něm programovat. Ruby vám
umožňuje soustředit se na kreativní stránku programování,
a nepřidělavá vám další starosti.“*

Yukihiro Matsumoto, předmluva k prvnímu vydání knihy *Programming Ruby*



I Hope to See Ruby

- Helps World Programmers
 - to be Productive
 - to Enjoy Programming
 - to be Happy



Google Tech Talks, *únor 2008, U.S.A.*
www.youtube.com/watch?v=oEkJvvGEtB4



EURUKO Keynote, březen 2008, Česká republika

<http://www.avc-cvut.cz/avc.php?id=6830>

MagicPoint presentation foils

http://cs.byu.edu/colloquia_files/2006Fall/presentations/Matz_slides/ Google


MagicPoint presentation foils

The Power of Ruby

Yukihiko "Matz" Matsumoto
まつもと ゆきひろ
matz@ruby-lang.org

So Many Languages

More than 4,000 years ago, when the tower was built, Many Languages were introduced to the Earth.



It is the source of my suffer, ... but we can compare languages.

Purpose of Languages

Men use languages to

- Describe the facts.
- Express thoughts and feeling.
- Even think in.

Tools for Thought

Languages are not only tools to communicate, but also tools to think.

Sapir-Whorf hypothesis

Language determines the way we think.

Theorem #1

Languages influence human thought, more than you think

Theorem #2

"languages" in Theorem #1 includes programming languages.

Sapir-Whorf in Programming

- BASIC programmers never use recursion.
- Lisp programmers use macros for everything.
- FORTRAN programmers can write FORTRAN in any language.

Why don't you choose a good language?

Programming languages are so easy to learn.

What is a good language?

- Natural languages are too ambiguous.
- Or, too verbose.
- Or, too indirect.

How to help thoughts

By providing computational model

- Procedural
- Object-Oriented
- Functional
- Etc.

Learnability

How easy is it for users to accomplish basic tasks the first time they encounter the design?

Efficiency

Once users have learned the design, how quickly can they perform tasks?

Efficiency

- More important than learnability
- Efficiency is the top purpose of languages

Memorability

When users return to the design after a period of not using it, how easily can they reestablish proficiency?

Memorability

- Association
- Consistency
- Orthogonality
- Common Sense
- No Radical

Errors

How many errors do users make, how severe are these errors, and how easily can they recover from these errors?

Errors

- When you see repeated errors, you have to do something.
- Errors are the source of inspiration.

Satisfaction

How pleasant is it to use the design?

Přednáška **Ruby Design Principles**, 2006 (včetně MP3 záznamu)
<http://itc.conversationsnetwork.org/shows/detail1638.html>

Programovací jazyk Ruby

Interpretovaný

Expresivní, úsporná syntaxe

Dynamický

Objektový (1. upto 5)

Silné typování Duck typing

Reflektivní → Meta programování

Core Library www.ruby-doc.org/core

Standard Library — YAML, Logger, FileStat, Net::HTTP, Iconv, RDoc, Test::Unit, Benchmark, ... www.ruby-doc.org/stdlib

RubyGems www.rubyforge.org | www.github.com

```
# The Greeter class
class Greeter
  def initialize(name)
    @name = name.capitalize
  end

  def salute
    puts "Hello #{@name}!"
  end
end
```

```
# Create a new object
g = Greeter.new("world")
```

```
# Output "Hello World!"
g.salute
```


Klíčové součásti Ruby On Rails

Přehled

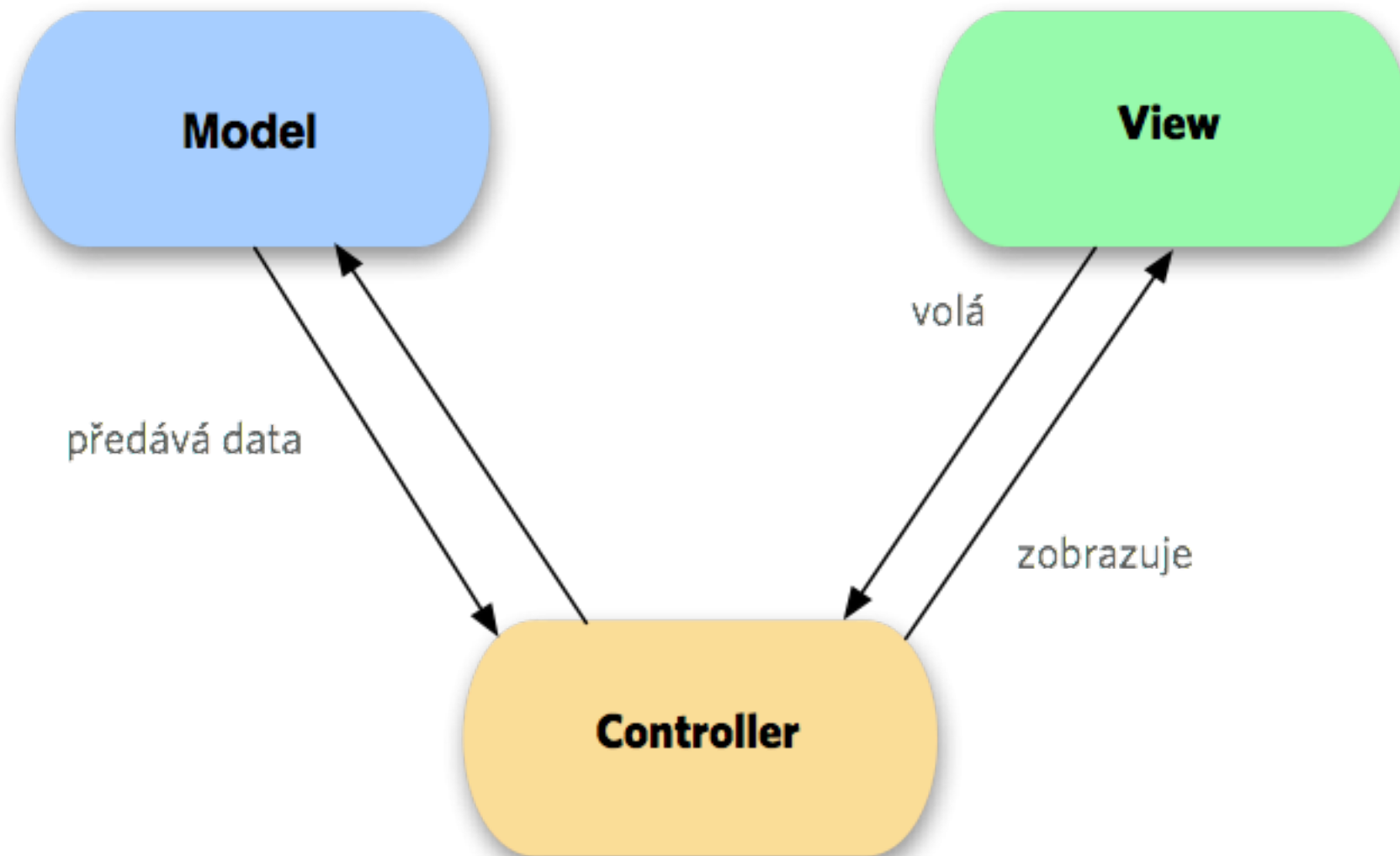
- 1) Model—View—Controller architektura
- 2) Generátory kódu
- 3) Objektově relační mapování [ActiveRecord](#)
- 4) Směrování HTTP požadavků na řídicí prvky aplikace [ActionPack](#)
([ActionController](#) a [ActionView](#))
- 5) Webové služby typu REST [ActiveResource](#)
- 6) Odesílání e-mailů [ActionMailer](#)
- 7) Rozšíření Ruby [ActiveSupport](#)

Model—View—Controller

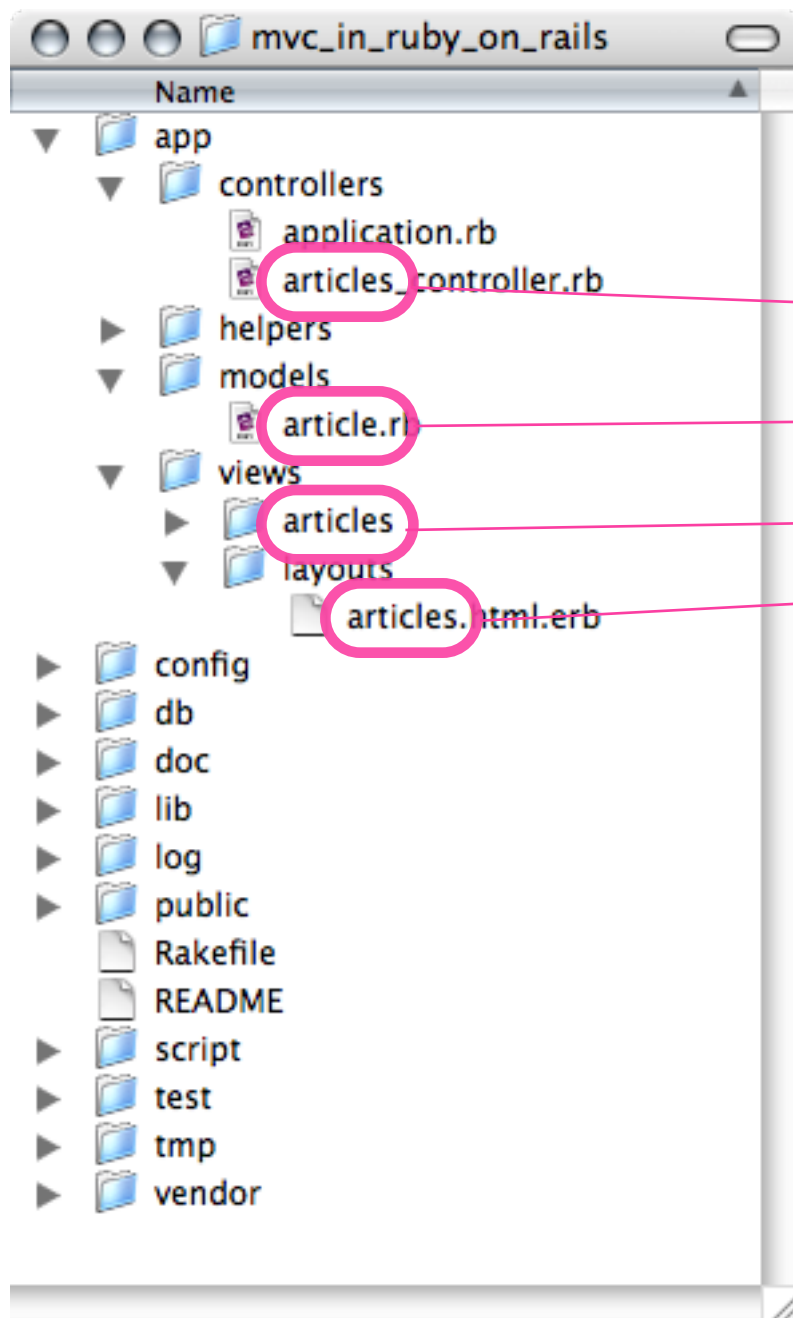
Model—View—Controller

Model předává data controlleru, controller předává data modelu.

Controller zobrazuje view, view volá akce controlleru.



Model—View—Controller



Adresářová struktura Rails aplikace

`controllers/articles_controller.rb`

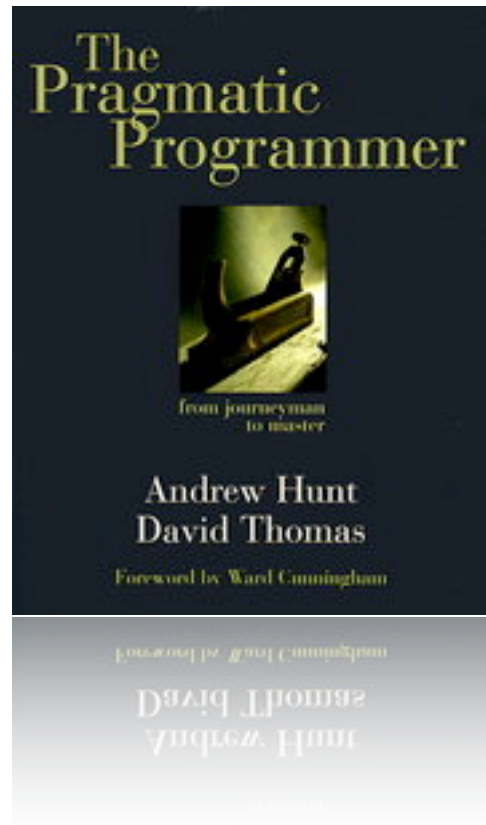
`models/article.rb`

`views/articles/index, edit, new, atd`

`views/layouts/articles.html.erb`

Generátory kódu

Generátory kódu



The Pragmatic Programmer: From Journeyman to Master, Andrew Hunt and David Thomas

Passive Code Generators

Passive code generators save typing. They are basically parameterized templates, generating a given output from a set of inputs. Once the result is produced, it becomes a full-fledged source file in the project; it will be edited, compiled, and placed under source control just like any other file. Its origins will be forgotten.

(str. 87)

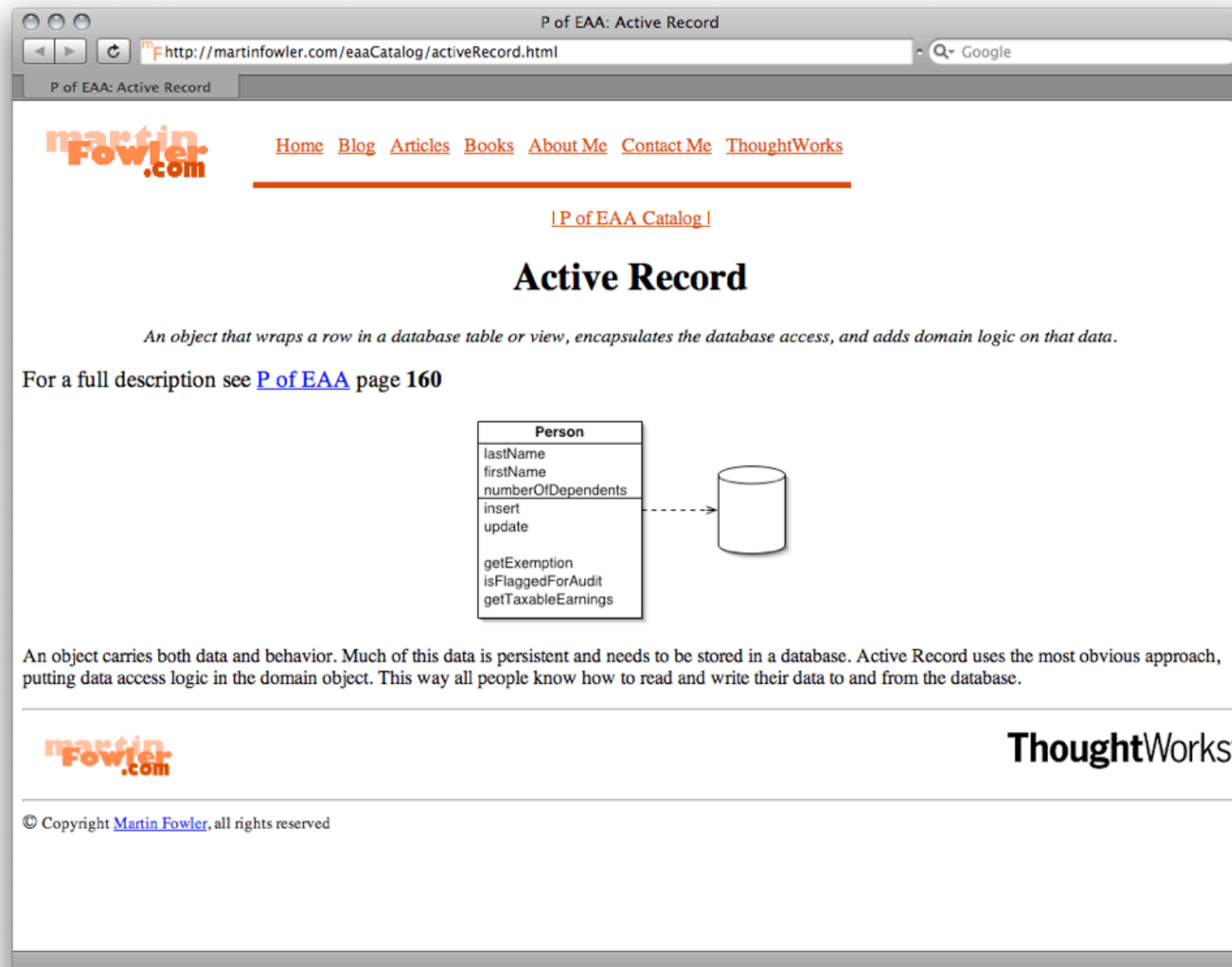
Generátory kódu

```
$ script/generate scaffold Person last_name:string date_of_birth:date
```

```
create app/models/person.rb
create test/unit/person_test.rb
create test/fixtures/people.yml
create db/migrate/20081007091729_create_people.rb
create app/views/people/index.html.erb
create app/views/people/show.html.erb
create app/views/people/new.html.erb
create app/views/people/edit.html.erb
create app/views/layouts/people.html.erb
create app/controllers/people_controller.rb
create test/functional/people_controller_test.rb
create app/helpers/people_helper.rb
route map.resources :people
```


ActiveRecord

Objektově relační mapování — ActiveRecord



Martin Fowler, *Patterns of Enterprise Application Architecture*

Objektově relační mapování — *ActiveRecord*

tabulka *people*

ID	Name	Surname	E-mail
1	John	Smith	smith@hotmail.com
2	Susanna	Reddick	susan@yahoo.com

```
INSERT INTO people (name, surname, email) VALUES( 'John', 'Smith', 'smith@hotmail.com' );  
SELECT * FROM people;  
SELECT * FROM people WHERE id = 1;  
SELECT * FROM people WHERE surname = 'Smith';
```

```
# ActiveRecord::Base.establish_connection ...  
Person.create(:name => 'John', :surname => 'Smith', :email => 'smith@hotmail.com')  
Person.all  
Person.find(1)  
Person.find_by_surname('Smith')
```

Objektově relační mapování — *ActiveRecord*

```
Person.all :order => 'last_name DESC'
```

```
Person.all :conditions => "administrator = 1"
```

```
Person.all(:conditions => [ "department = :department AND position = :position",  
                           { :department => params[:department],  
                             :position => params[:position] } ] )
```

```
Person.all :include => 'accounts'
```

```
Person.all :group => 'country'
```

```
Person.find_by_sql( "SELECT id AS complicated ..." )
```

Objektově relační mapování — *ActiveRecord*

```
p = Person.find 1
```

```
p.first_name = 'Robert'
```

```
p.save
```

```
p.destroy
```

ActiveRecord — Validace

```
class Account < ActiveRecord::Base
```

```
  validates_presence_of      :account_number, owner_id
  validates_numericality_of  :balance
  validates_length_of        :password, :minimum=> 4

  validates_format_of :email,
    :with => /\A([^\s]+)@((?:[-a-z0-9]+\.)+[a-z]{2,})\Z/i

  validates_acceptance_of :terms_of_service, :on => 'create'
```

```
end
```

ActiveRecord — Callbacks

```
class Article < ActiveRecord::Base
```

```
  after_save      :clean_up_html  
  after_destroy  :audit_log
```

```
protected
```

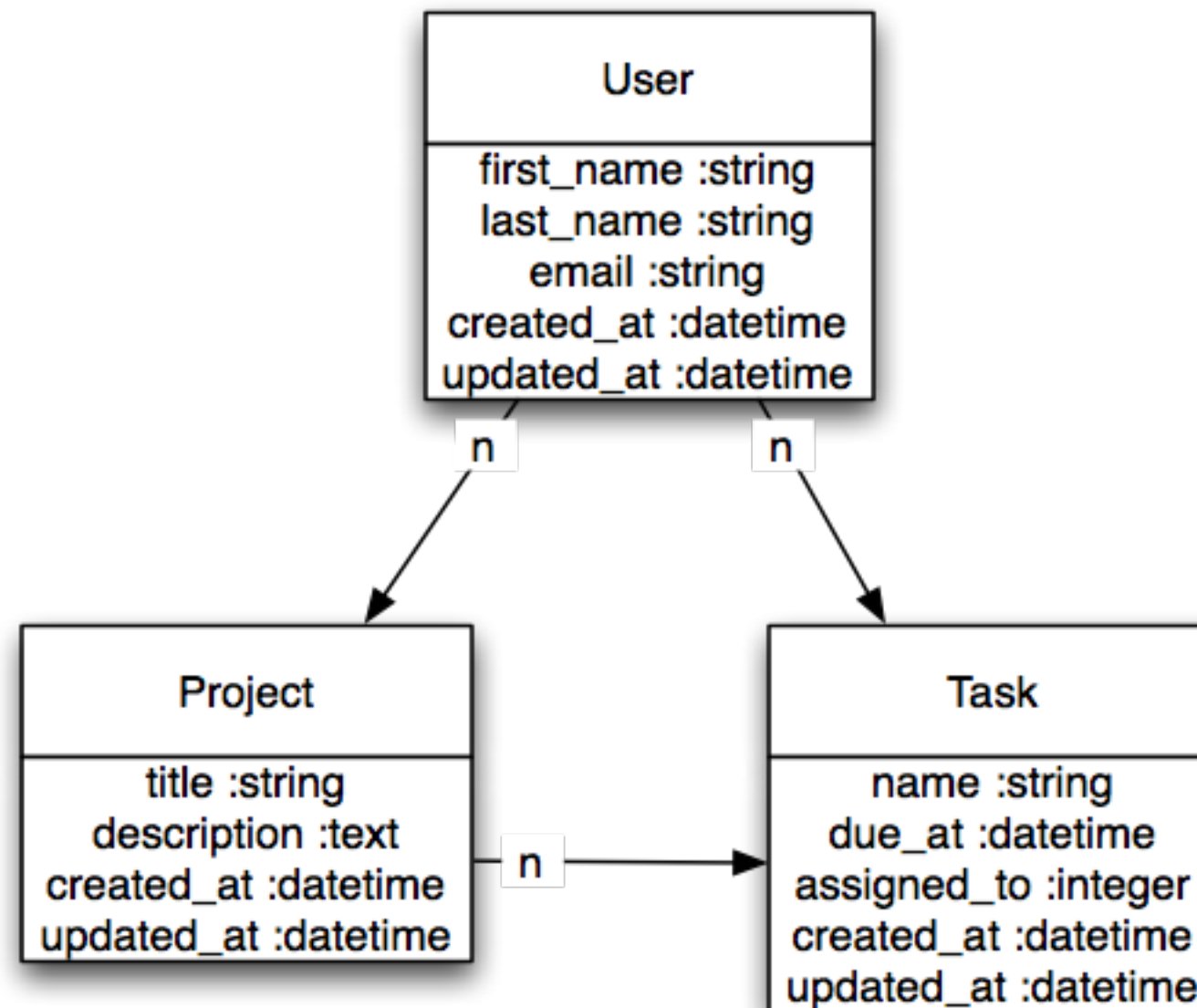
```
def clean_up_html  
  self.body.gsub( ... )  
end
```

```
def audit_log  
  audit_logger.info("Article #{self.title} has been removed by user #{current_user}")  
end
```

```
end
```

ActiveRecord — Asociace, vazby

```
$ railroad -a -i -o full_models.dot -M
```



ActiveRecord — Asociace

```
class Project < ActiveRecord::Base
```

```
  belongs_to :project_manager
```

```
end
```

```
create_table :projects do |t|  
  t.string :title  
  t.text :description  
  t.integer :project_manager_id  
  t.timestamps  
end
```

ActiveRecord — Asociace

```
class Project < ActiveRecord::Base
  belongs_to :project_manager, :class_name => "User"
  has_many :tasks
end

class User < ActiveRecord::Base
  has_many :projects
  has_many :tasks, :foreign_key => 'assigned_to'
end

class Task < ActiveRecord::Base
  belongs_to :project
  belongs_to :user, :foreign_key => "assigned_to"
end
```

Convention over configuration

ActiveRecord — dočasné řešení

The image displays three overlapping browser windows, each representing a different cloud-based database or application platform:

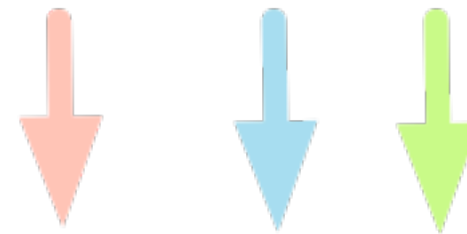
- Amazon SimpleDB:** The top-left window shows the Amazon SimpleDB website. The URL is `http://aws.amazon.com/simplydb/`. The page features the Amazon Web Services logo and a navigation menu. The main content area describes Amazon SimpleDB as a web service for running queries in real time, working in conjunction with Amazon S3 and Amazon EC2.
- Google App Engine:** The middle window shows the Google App Engine website. The URL is `http://code.google.com/appengine/`. The page features the Google Code logo and a navigation menu. The main content area describes Google App Engine as a platform for building web applications that can be scaled from one user to millions of users without headaches.
- Apache CouchDB:** The bottom-right window shows the Apache CouchDB website. The URL is `http://incubator.apache.org/couchdb/index.html`. The page features the Apache CouchDB logo and a navigation menu. The main content area describes Apache CouchDB as a distributed, fault-tolerant and schema-free document-oriented database accessible via a RESTful HTTP/JSON API. A diagram on the right side of the page illustrates the CouchDB architecture, showing the flow from an HTTP Client to an Erlang VM, which then connects to a Mod_Couch module. This module interacts with a View Engine, a Storage Engine, and a Replicator. The View Engine is connected to ICU, the Storage Engine is connected to SpiderMonkey, and the Replicator is connected to Lucene.

Objektové databáze

ActionController

Routing — *ActionController*

`http://www.example.com/people/display/1`



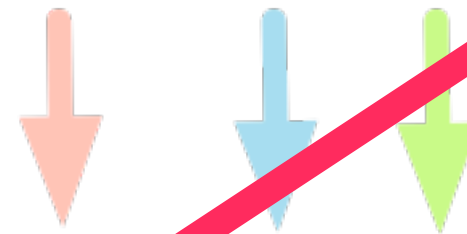
`map.connect ':controller/:action/:id'`



```
@params = {  
  :controller => 'people',  
  :action => 'display',  
  :id => 1  
}
```

Routing — *ActionController*

`http://www.example.com/people/display/1`



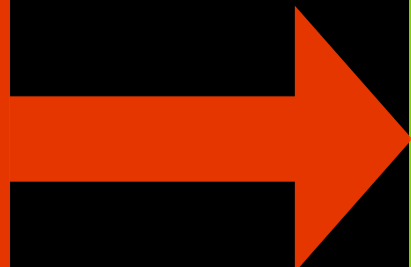
`map.connect ':controller/:action/:id'`

So 2006!

```
@params = {  
  :controller => 'people',  
  :action => 'display',  
  :id => 1  
}
```

Rails 1.1

RESTful



```
POST /people/create  
GET  /people/show/1  
POST /people/update/1  
POST /people/destroy/1
```

```
POST /people  
GET  /people/1  
PUT  /people/1  
DELETE /people/1
```

— DHH, RailsConf 2007 Keynote, „The World Of Resources“

GET	POST	PUT	DELETE
find	create	update	destroy
SELECT	INSERT	UPDATE	DELETE

— DHH, RailsConf 2007 Keynote, „The World Of Resources“

Routing + Resources — ActionController

```
ActionController::Routing::Routes.draw do |map|  
  map.resources :people  
end
```



people_path
person_path(1)



GET	http://www.example.com/people	→	PeopleController#index()
GET	http://www.example.com/people/1	→	PeopleController#show()
POST	http://www.example.com/people	→	PeopleController#create()
PUT	http://www.example.com/people/1	→	PeopleController#update()
DELETE	http://www.example.com/people/1	→	PeopleController#destroy()

Rails 1.2.x

➡ RESTful!

REST *Representational State Transfer*

REpresentational SState TTransfer

Mnohem více než „XML over HTTP“

Využití HTTP protokolu (GET, POST, PUT, DELETE)

S *resource* (*noun*) je možné manipulovat (*verb*): **CRUD**: CREATE — UPDATE — DELETE

Žádná informace o stavu *resource* není uchovávána na serveru

Resource má různé reprezentace (HTML, XML, graf, ...)

Každá reprezentace *resource* má unikátní URI (`staff.html`, `staff.xml`, `staff.png`)

```
class PeopleController < ActionController::Base
  def index
    @people = Person.find(:all)

    respond_to do |format|
      format.html # renders index.rhtml
      format.js   # renders index.rjs
      format.xml  { render :xml => @people.to_xml }
      format.icl  { render_calendar(@people) }
      format.atom do
        render :action => "atom", :content_type => Mime::ATOM
      end
    end
  end
end
end
```

— DHH, RailsConf 2007 Keynote, „The World Of Resources“

ActiveResource

```
class PeopleController < ActionController::Base
  def index
    @people = Person.find(:all)

    respond_to do |format|
      format.html # renders index.rhtml
      format.js   # renders index.rjs
      format.xml  { render :xml => @people.to_xml }
      format.icl  { render_calendar(@people) }
      format.atom do
        render :action => "atom", :content_type => Mime::ATOM
      end
    end
  end
end
```

— DHH, RailsConf 2007 Keynote, „The World Of Resources“

ActiveResource — ORM pro webové služby

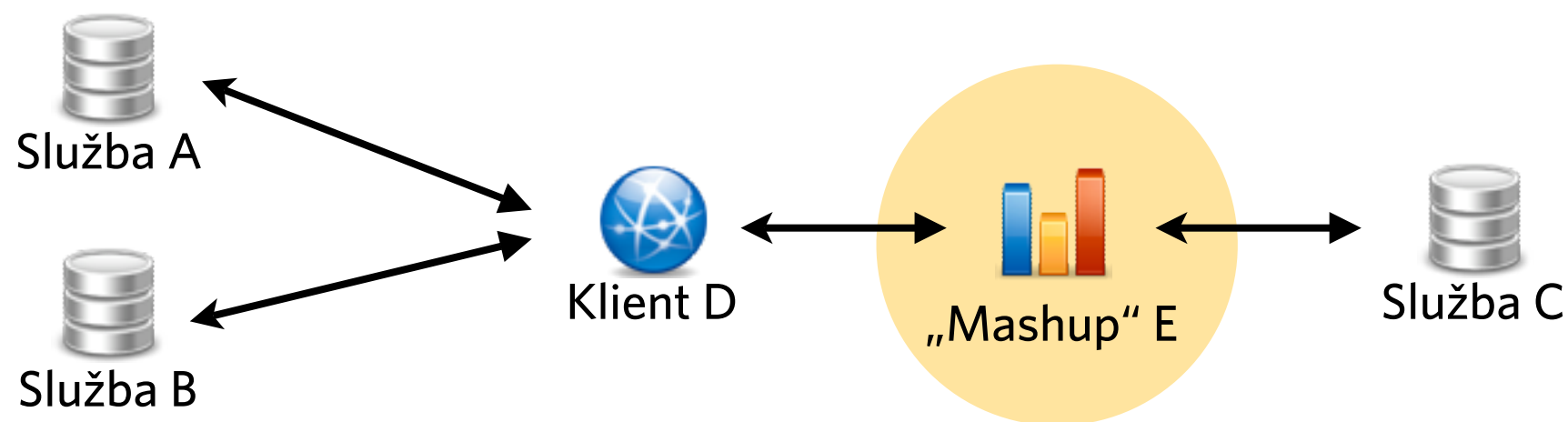
```
class Person < ActiveResource::Base
  self.site = "http://username:password@www.example.com:3000/"
end
```

```
# Expects a response of
#
# <person><id type="integer">1</id><attribute1>value1</attribute1><attribute2>..</attribute2></person>
#
# for GET http://api.people.com:3000/people/1.xml
```

```
ryan = Person.find(1)
ryan = Person.new(:first => 'Ryan', :last => 'Daigle')
ryan.save
# => true
ryan.id
# => 2
```


ActiveResource — ORM pro webové služby

```
class Person < ActiveResource::Base  
  self.site = "http://username:password@www.example.com:3000/"  
end
```



ActionView

ActionView

 people_controller.rb

```
@person = Person.find params[:id]
```

 display.html.erb

```
<h2>Jméno: <%= @person.name %></h2>  
<p>E-Mail: <%= mail_to @person.email %></p>
```

```
<hr />
```

```
<%= link_to "Seznam lidí", people_path %>
```

ActionView

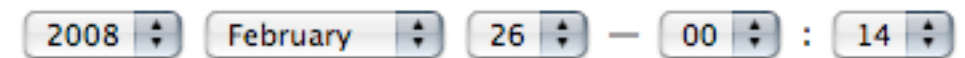
Helpery pro formuláře, odkazy

```
<% form_for @person do |f| %>
```

```
  <%= f.text_field :name %>
```

```
  <%= f.datetime_select :date_of_birth %? %>
```

```
<% end %>
```



```
<%= link_to @person.name, person_path(@person) %>
```

```
<a href="/person/show/1" ... />
```

Helpery pro Ajax, Scriptaculous, JavaScript

```
<%= link_to_remote "Skrýt", "update" => 'list', :url => { :action =>
```

```
'hide' } %>
```

```
<a href ... onclick="new Ajax.Updater ... />
```

Automatizované testování

Proč psát testy?

Proč **nepsat** testy víme — není čas, nejsou peníze, ...

Automatizované testování aplikace

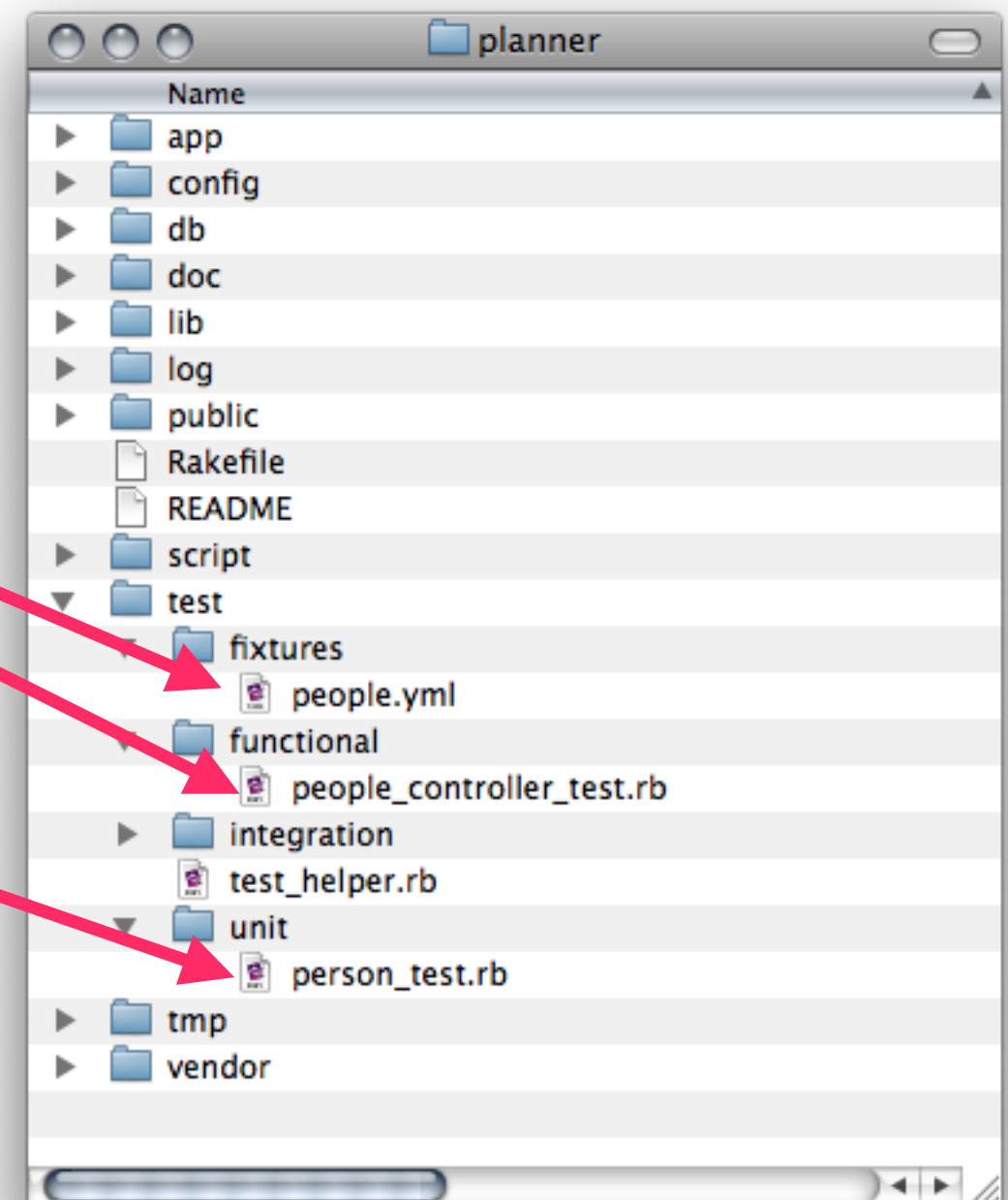
Testy jsou nejmocnějším pomocníkem **agilního vývoje**

Testy jsou **obrana** „proti sobě samému“

Testy jsou obrana proti **příšerám** (*legacy code*)

Podpora pro automatizované testování aplikace v Rails

Podpora pro
testovací data (fixtures)
testování controllerů a views
testování modelů



Automatizované testování aplikace: Testovací data

 test/fixtures/people.yml

Read about fixtures at <http://ar.rubyonrails.org/classes/Fixtures.html>

john:

```
first_name: John
last_name: Smith
country: Great Britain
department: Accounting
position: Accountant
administrator: true
```

robert:

```
first_name: Roberto
last_name: Callon
country: Spain
department: Marketing
position: Graphic Designer
administrator: false
```

Automatizované testování aplikace: Unit Testing

Test::Unit (standardní knihovna Ruby)

```
require 'test/unit'
```

```
class MyTest < Test::Unit::TestCase
```

```
  # def setup
```

```
  # end
```

```
  # def teardown
```

```
  # end
```

```
  def test_true_is_true
```

```
    assert_equal(true, true, 'Assertion was false.')
```

```
  end
```

```
end
```

Automatizované testování aplikace: Logika aplikace

 test/unit/person_test.rb

```
class PersonTest < ActiveSupport::TestCase
  # Replace this with your real tests.
  def test_truth
    assert true
  end
end
```

Automatizované testování aplikace: Prezentační vrstva

 test/unit/people_controller_test.rb

```
class PeopleControllerTest < ActionController::TestCase
```

```
  def test_should_get_index
    get :index
    assert_response :success
    assert_not_nil assigns(:people)
  end
```

```
  def test_should_get_new
    get :new
    assert_response :success
  end
```

```
  def test_should_create_person
    assert_difference('Person.count') do
      post :create, :person => { }
    end
    assert_redirected_to person_path(assigns(:person))
  end
```

```
  ...
```

Automatizované testování aplikace: Prezentační vrstva

```
class ProjectsControllerTest < ActionController::TestCase

  def test_should_get_index
    get :index
    assert_response :success
    assert_not_nil assigns(:projects)
  end

end
```

Automatizované testování aplikace: Příklady

```
class ProjectsControllerTest < ActionController::TestCase

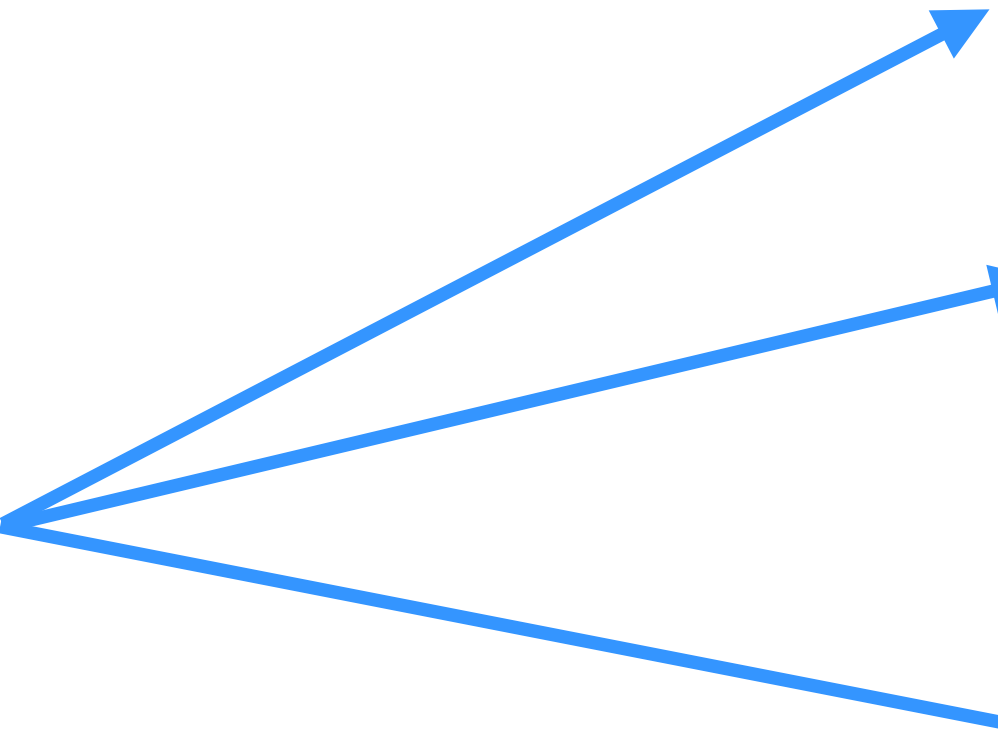
  def test_should_get_index
    get :index
    # HTTP odpověď (tedy "200 OK", nikoliv 302, 404, 403, 500, ...)
    assert_response :success
    # Naplněná proměnná @projects
    assert_not_nil assigns(:projects)
    # Právě *dva* projekty
    assert_equal 2, assigns(:projects).size
    # Šablona pro výpis
    assert_template "index"
    # <title> stránky
    assert_select "title", "Projekty"
    # HTML kód
    assert_tag :tag => 'li',
               :attributes => { :id => "project_#{projects(:babylon).id}",
                               :class => 'in_progress' }
  end

end
```


Dokumentování kódu

Dokumentace (RDoc)

RDoc



```
# The program takes an initial word or phrase from
# ...
#
# Author::    Dave Thomas  (mailto:dave@x.y)

# This class holds the letters in the original
# word or phrase. ...

class Anagram

  # Remember the letters in the initial word
  def initialize(text)
    @initial_letters = letters_of(text)
  end

  # Test to see if a new word contains the same
  # letters as the original
  def is_anagram?(text)
    @initial_letters == letters_of(text)
  end

  # Determine the letters in a word or phrase
  #
  # * all letters are converted to lower case
  # * anything not a letter is stripped out
  # * ...

  def letters_of(text)
    text.downcase.delete('^a-z').split('').sort.join
  end
end

tester = Anagram.new(ARGV.shift || gets)

ARGF.each do |text|
  puts "Anagram! " if tester.is_anagram? text
end
```

Dokumentace (RDoc)

```
# The program takes an initial word or phrase from
# ...
#
# Author:: Dave Thomas (mailto:dave@x.y)

# This class holds the letters in the original
# word or phrase. ...

class Anagram

  # Remember the letters in
  def initialize(text)
    @initial_letters = letters_of(text)
  end

  # Test to see if a new word contains the same
  # letters as the original
  def is_anagram?(text)
    @initial_letters == letters_of(text)
  end

  # Determine the letters in a word or phrase
  #
  # * all letters are converted to lower case
  # * anything not a letter is stripped out
  # * ...

  def letters_of(text)
    text.downcase.delete('^a-z').split('').sort.join
  end
end

tester = Anagram.new(ARGV.shift || gets)

ARGV.each do |text|
  puts "Anagram! " if tester.is_anagram? text
end
```

\$ rdoc anagram.rb

Class: Anagram

http://rdoc.sourceforge.net/doc/classes/Anagram.html

Class Anagram

In: [EXAMPLE.rb](#)
Parent: Object

Anagram
EXAMPLE.rb

This class holds the letters in the original word or phrase. The [is_anagram?](#) method allows us to test if subsequent words or phrases are anagrams of the original.

Methods

[is_anagram?](#) [letters_of](#) [new](#)

Public Class methods

new(text)
Remember the letters in the initial word

Public Instance methods

is_anagram?(text)
Test to see if a new word contains the same letters as the original

letters_of(text)
Determine the letters in a word or phrase

- all letters are converted to lower case
- anything not a letter is stripped out

Dokumentace (RDoc)

\$ rake doc:app

Rails Application Documentation

file:///Users/karmi/Desktop/rails_demonstration_app/doc/app/index.html

Google

Files

- app/controllers/application.rb
- app/controllers/photos_controller.rb
- app/controllers/todos_controller.rb
- app/helpers/application_helper.rb
- app/helpers/photos_helper.rb
- app/helpers/todos_helper.rb
- app/models/photo.rb
- app/models/todo_item.rb
- doc/README_FOR_APP

Classes

- ApplicationController
- ApplicationHelper
- Photo
- PhotosController
- PhotosHelper
- TodoItem
- TodosController
- TodosHelper

Methods

- create (PhotosController)
- css_class (TodoItem)
- delete (PhotosController)
- edit (PhotosController)
- find_all_for_last_month (TodoItem)
- format_due_date (TodosHelper)
- index (TodosController)
- index (PhotosController)
- list (TodosController)
- move_higher (TodosController)
- move_lower (TodosController)

Class TodoItem

In: app/models/todo_item.rb

Parent: ActiveRecord::Base

Methods

css_class find_all_for_last_month

Public Class methods

find_all_for_last_month()

Slozitejsi logiku presunujeme z controlleru do modelu: model ma byt "tlusty", controller "stihly" Viz weblog.jamisbuck.org/2006/10/18/skinny-controller-fat-model

[Source]

Public Instance methods

css_class()

Pomocne atributy udrzuji tez views "stihle", viz view: app/views/todos/_todo_item.rhtml, radek 1 V urcitych pripadech muze byt vyhodnejši je pouzít místo helperu, zvláste v pripadech, ze souvisi primo s modelem â€” jsou jeho "vlastnosti"

[Source]

Nástroj *Rake*

Nástroj *Rake*

```

alu:planner karmi$ rake -T
(in /Users/karmi/tmp/planner)
rake db:abort_if_pending_migrations # Raises an error if there are pending...
rake db:charset                    # Retrieves the charset for the curren...
rake db:collation                  # Retrieves the collation for the curr...
rake db:create                     # Create the database defined in confi...
rake db:create:all                 # Create all the local databases defin...
rake db:drop                       # Drops the database for the current R...
rake db:drop:all                   # Drops all the local databases define...
rake db:fixtures:identify          # Search for a fixture given a LABEL o...
rake db:fixtures:load              # Load fixtures into the current envir...
rake db:migrate                   # Migrate the database through scripts...
rake db:migrate:down               # Runs the "down" for a given migratio...
rake db:migrate:redo               # Rolls back the database one migration...
rake db:migrate:reset              # Resets your database using your migr...
rake db:migrate:up                 # Runs the "up" for a given migration ...
rake db:reset                      # Drops and recreates the database fro...
rake db:rollback                  # Rolls the schema back to the previou...
rake db:schema:dump                # Create a db/schema.rb file that can ...
rake db:schema:load                # Load a schema.rb file into the database
rake db:sessions:clear             # Clear the sessions table
rake db:sessions:create            # Creates a sessions migration for use...
rake db:structure:dump             # Dump the database structure to a SQL...
rake db:test:clone                 # Recreate the test database from the ...
rake db:test:clone_structure       # Recreate the test databases from the...
rake db:test:prepare               # Prepare the test database and load t...
rake db:test:purge                 # Empty the test database
rake db:version                    # Retrieves the current schema version...
rake doc:app                       # Build the app HTML Files
rake doc:clobber_app               # Remove rdoc products
rake doc:clobber_plugins           # Remove plugin documentation
rake doc:clobber_rails             # Remove rdoc products
rake doc:plugins                   # Generate documentation for all insta...
rake doc:rails                     # Build the rails HTML Files
rake doc:reapp                     # Force a rebuild of the RDOC files
rake doc:reraails                  # Force a rebuild of the RDOC files
rake gems                          # List the gems that this rails applic...
rake gems:build                    # Build any native extensions for unpa...

```

```

# Build any native extensions for unpa...
rake gems:install                  # Installs all require
rake gems:unpack                   # Unpacks the specifie
rake gems:unpack:dependencies     # Unpacks the specifie
rake log:clear                     # Truncates all *.log
rake notes                         # Enumerate all annota
rake notes:fixme                   # Enumerate all FIXME
rake notes:optimize                # Enumerate all OPTIMI
rake notes:todo                    # Enumerate all TODO a
rake rails:freeze:edge             # Lock to latest Edge
rake rails:freeze:gems             # Lock this applicatio
rake rails:unfreeze                # Unlock this applicat
rake rails:update                  # Update both configs,
rake rails:update:configs          # Update config/boot.r
rake rails:update:javascrpts       # Update your javascr
rake rails:update:scripts          # Add new scripts to t
rake routes                        # Print out all define
rake secret                        # Generate a cryptograp
rake stats                          # Report code statisti
rake test                          # Run all unit, functi
rake test:functionals              # Run tests for functi
rake test:integration              # Run tests for integr
rake test:plugins                  # Run tests for plugin
rake test:recent                   # Run tests for recent
rake test:uncommitted              # Run tests for uncomm
rake test:units                    # Run tests for unitsd
rake time:zones:all                # Displays names of al
rake time:zones:local              # Displays names of ti
rake time:zones:us                 # Displays names of US
rake tmp:cache:clear               # Clears all files and
rake tmp:clear                     # Clear session, cache
rake tmp:create                    # Creates tmp director
rake tmp:pids:clear                # Clears all files in
rake tmp:sessions:clear            # Clears all files in
rake tmp:sockets:clear             # Clears all files in

```


Nástroj Rake

```
alu:planner karmi$ rake -T
```

```
(in /Users/karmi/tmp/planner)
```

```
rake db:abort_if_pending_migrations # Raises an error if there are pending...
rake db:charset                    # Retrieves the charset for the curren...
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rake db:migrate:down              # Runs the "down" for a given migratio...
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rake db:migrate:reset             # Resets your database using your migr...
rake db:migrate:up                # Runs the "up" for a given migration ...
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rake db:rollback                  # Rolls the schema back to the previou...
rake db:schema:dump               # Create a db/schema.rb file that can ...
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rake db:sessions:clear            # Clear the sessions table
rake db:sessions:create           # Creates a sessions migration for use...
rake db:structure:dump            # Dump the database structure to a SQL...
rake db:test:clone                # Recreate the test database from the ...
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rake notes                        # Enumerate all annota...
rake notes:fixme                  # Enumerate all FIXME...
rake notes:optimize               # Enumerate all OPTIMI...
rake notes:todo                   # Enumerate all TODO a...
rake rails:freeze:edge            # Lock to latest Edge...
rake rails:freeze:gems            # Lock this applicatio...
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rake rails:update                 # Update both configs...
rake rails:update:configs         # Update config/boot.r...
rake rails:update:javascrpts      # Update your javascr...
rake rails:update:scripts        # Add new scripts to t...
rake routes                       # Print out all define...
rake secret                       # Generate a cryptograp...
rake stats                        # Report code statisti...
rake test                         # Run all unit, functi...
rake test:functionals             # Run tests for functi...
rake test:integration             # Run tests for integr...
rake test:plugins                 # Run tests for plugin...
rake test:recent                  # Run tests for recent...
rake test:uncommitted            # Run tests for uncomm...
rake test:units                   # Run tests for unitsa...
rake time:zones:all               # Displays names of al...
rake time:zones:local             # Displays names of ti...
rake time:zones:us                # Displays names of US...
rake tmp:cache:clear              # Clears all files and...
rake tmp:clear                    # Clear session, cache...
rake tmp:create                   # Creates tmp director...
rake tmp:pids:clear               # Clears all files in...
rake tmp:sessions:clear           # Clears all files in...
rake tmp:sockets:clear            # Clears all files in...
```

Nástroj *Rake*

```
$ rake -T (rake --tasks)
$ rake -T db
$ rake rake -D db:migrate (rake --describe)
```

Vlastní *Rake* příkazy

```
# lib/tasks/users.rake
namespace :users do
  desc "Vypise uzivatele s prekrocenym limitem"
  task :over_quota => :environment do
    User.all( :conditions => [ 'quota > :limit', {:limit => User.quota_limit} ] ).each do |user|
      puts "Uzivatel '#{user.username}' prekrocil limit o #{user.quota - User.quota_limit} MB"
    end
  end
end
```


Pluginy Rozšíření Rails

Rozšíření Ruby on Rails, znovu-použitelný kód

Jak fungují pluginy v Rails?

```
module Life
  def answer
    42
  end
end
```

```
class Universe
end
```

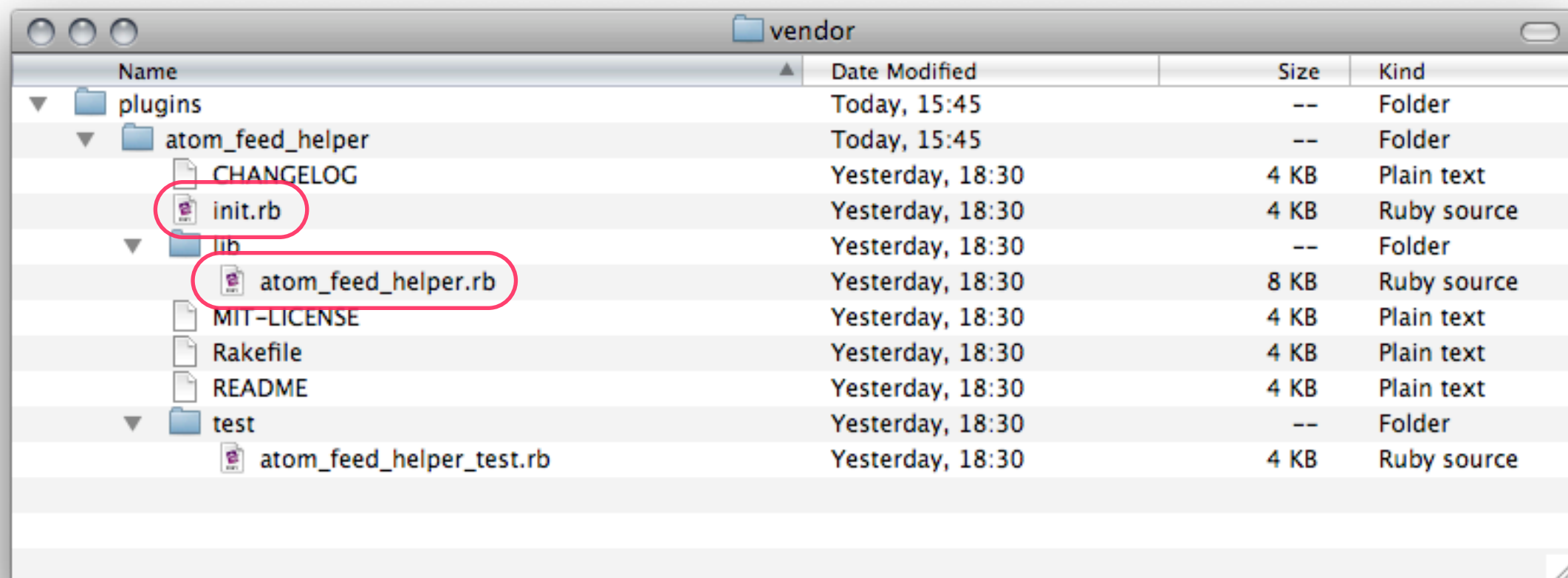
```
u = Universe.new
begin
  puts u.answer # NoMethodError: undefined method 'answer' (unless rescue'd)
rescue NoMethodError
  puts "ERROR! I don't know any 'answer'!"
end
```

```
class Universe
  include Life
end
```

```
u = Universe.new
puts u.answer # => 42
```

Rozšíření Ruby on Rails, znovu-použitelný kód

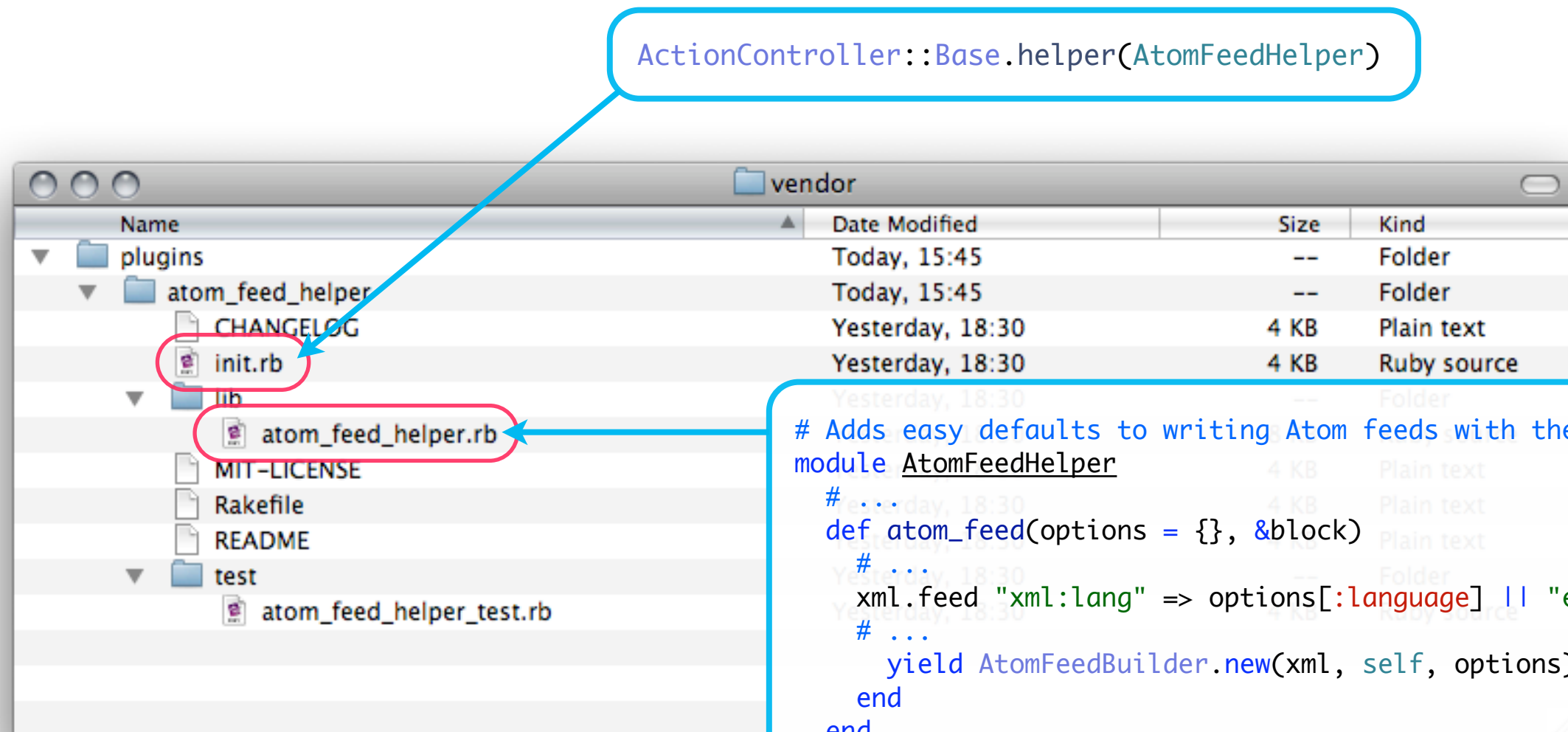
Atom Feed Helper (Snadné generování Atom syndikace)



Name	Date Modified	Size	Kind
▼ plugins	Today, 15:45	--	Folder
▼ atom_feed_helper	Today, 15:45	--	Folder
CHANGELOG	Yesterday, 18:30	4 KB	Plain text
init.rb	Yesterday, 18:30	4 KB	Ruby source
▼ lib	Yesterday, 18:30	--	Folder
atom_feed_helper.rb	Yesterday, 18:30	8 KB	Ruby source
MIT-LICENSE	Yesterday, 18:30	4 KB	Plain text
Rakefile	Yesterday, 18:30	4 KB	Plain text
README	Yesterday, 18:30	4 KB	Plain text
▼ test	Yesterday, 18:30	--	Folder
atom_feed_helper_test.rb	Yesterday, 18:30	4 KB	Ruby source

www.github.com/rails/atom_feed_helper

Rozšíření Ruby on Rails, znovu-použitelný kód



```
ActionController::Base.helper(AtomFeedHelper)
```

```
# Adds easy defaults to writing Atom feeds with the Builder templating engine
module AtomFeedHelper
  # ...
  def atom_feed(options = {}, &block)
    # ...
    xml.feed "xml:lang" => options[:language] || "en-US", "xmlns" => "http://www.w3.org/2005/Atom"
    # ...
    yield AtomFeedBuilder.new(xml, self, options)
  end
end

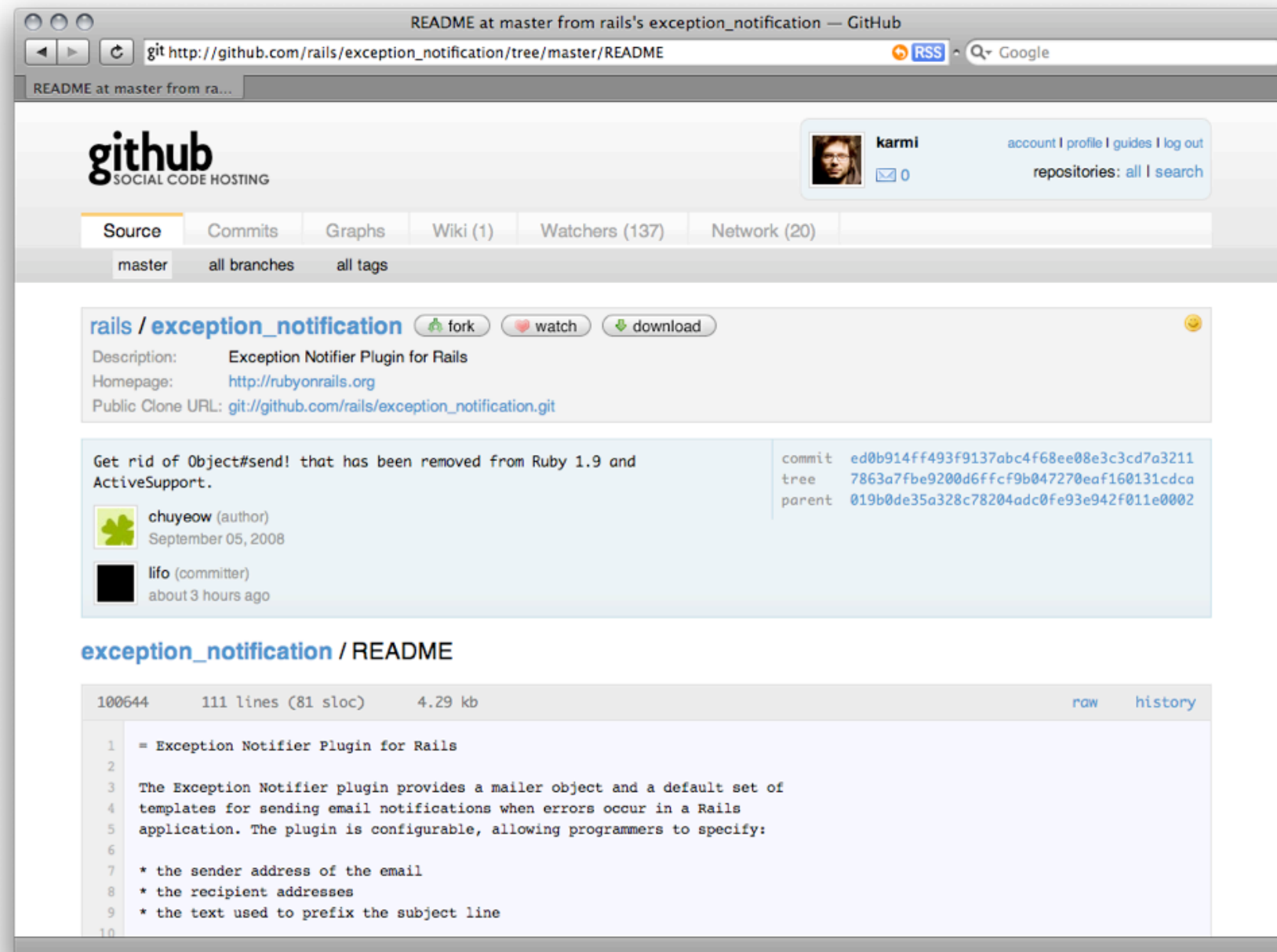
class AtomFeedBuilder
  # ...
  def entry(record, options = {})
    @xml.entry do
      @xml.id("#{@view.request.host},#{@feed_options[:schema]}")
      # ...
    end
  end
  # ...
end
```

Rozšíření Ruby on Rails, znovu-použitelný kód



www.agilewebdevelopment.com/plugins

Rozšíření Ruby on Rails, znovu-použitelný kód



www.github.com

Deployment Rails aplikací

Deployment

„Deployment“ — Instalace a aktualizace kódu aplikace na serveru

„Model PHP“ → „Upload and forget“



Synchronizace přes FTP
.BAK, .OLD, ...

Správa verzí kódu aplikace (Subversion, Git)

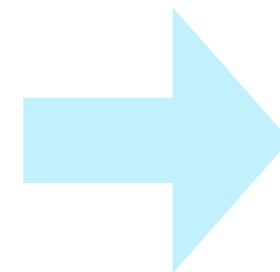
Aktualizace kódu aplikace

Návrat ke starší („funkční“ :) verzi

Spouštění příkazů na serveru

Monitoring stavu aplikace a serveru

(Testy, testy, testy, ...)



Efektivita

Průběh softwarového projektu: *Vodopádový model*

Návrh

Implementace

Testování/Nasazení

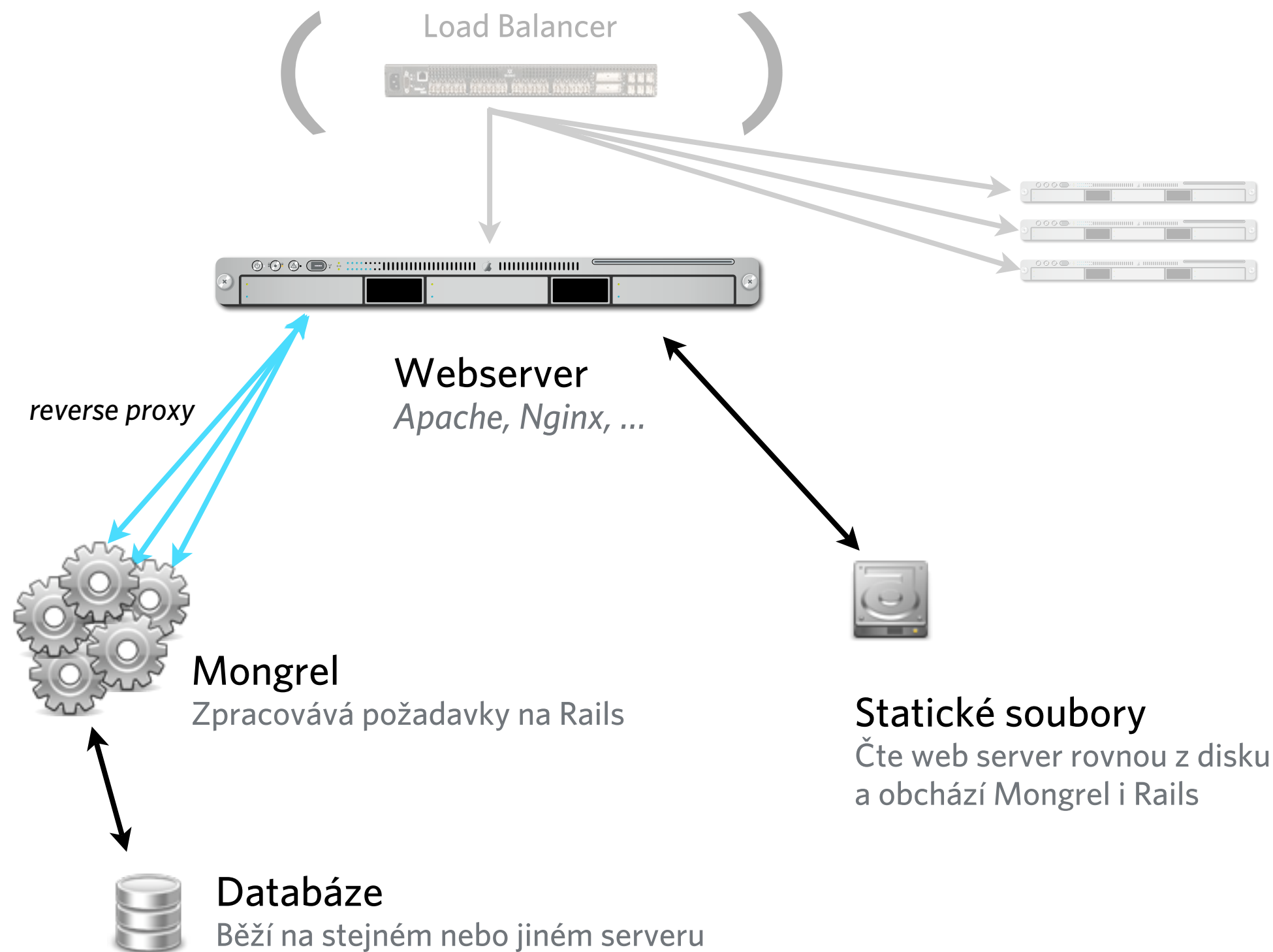
Průběh softwarového projektu: *Agilní vývoj*



Deployment

Bez efektivního procesu deploymentu nelze **vyvíjet agilně**

Struktura Rails aplikace běžící v produkčním prostředí

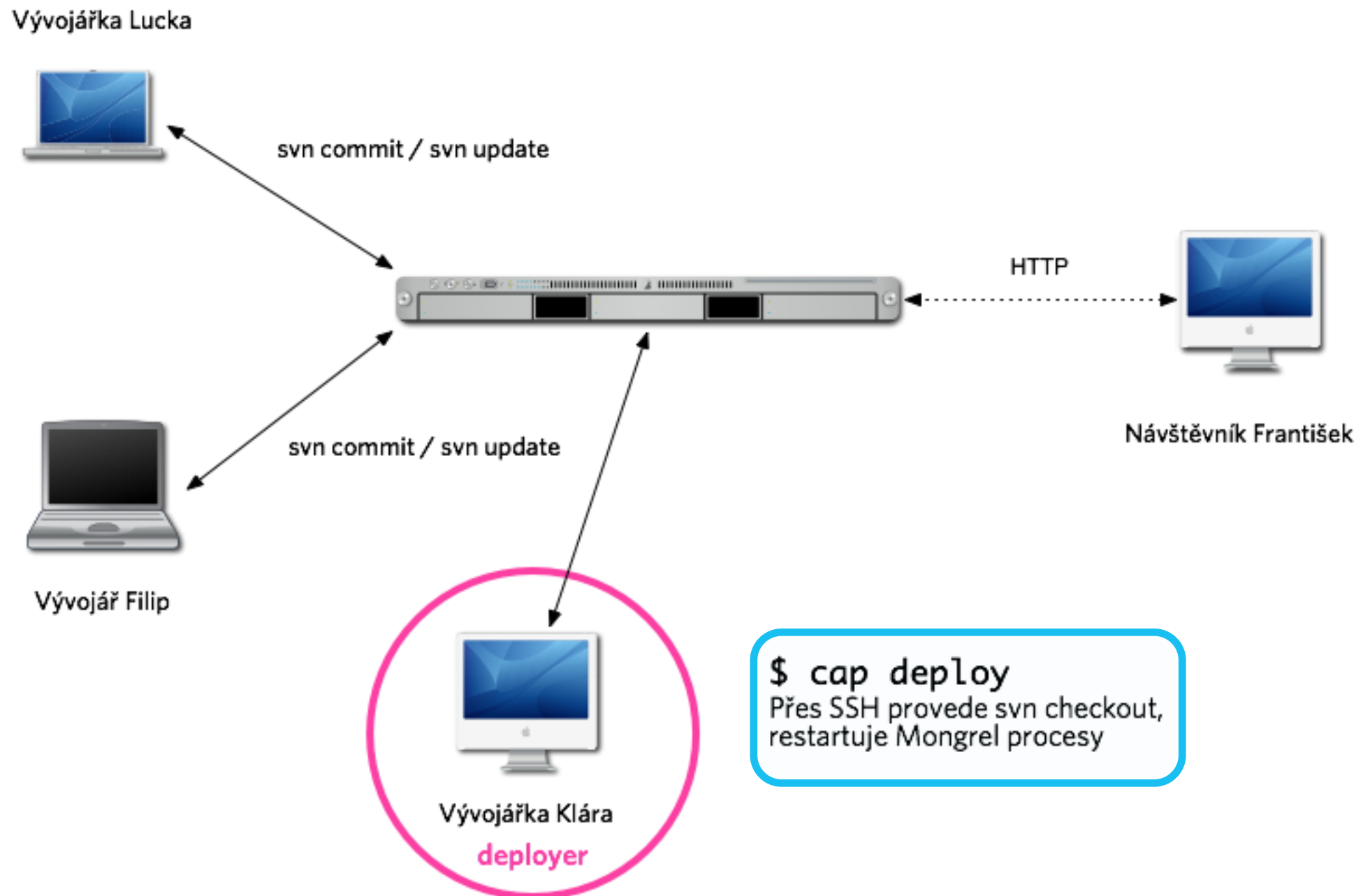


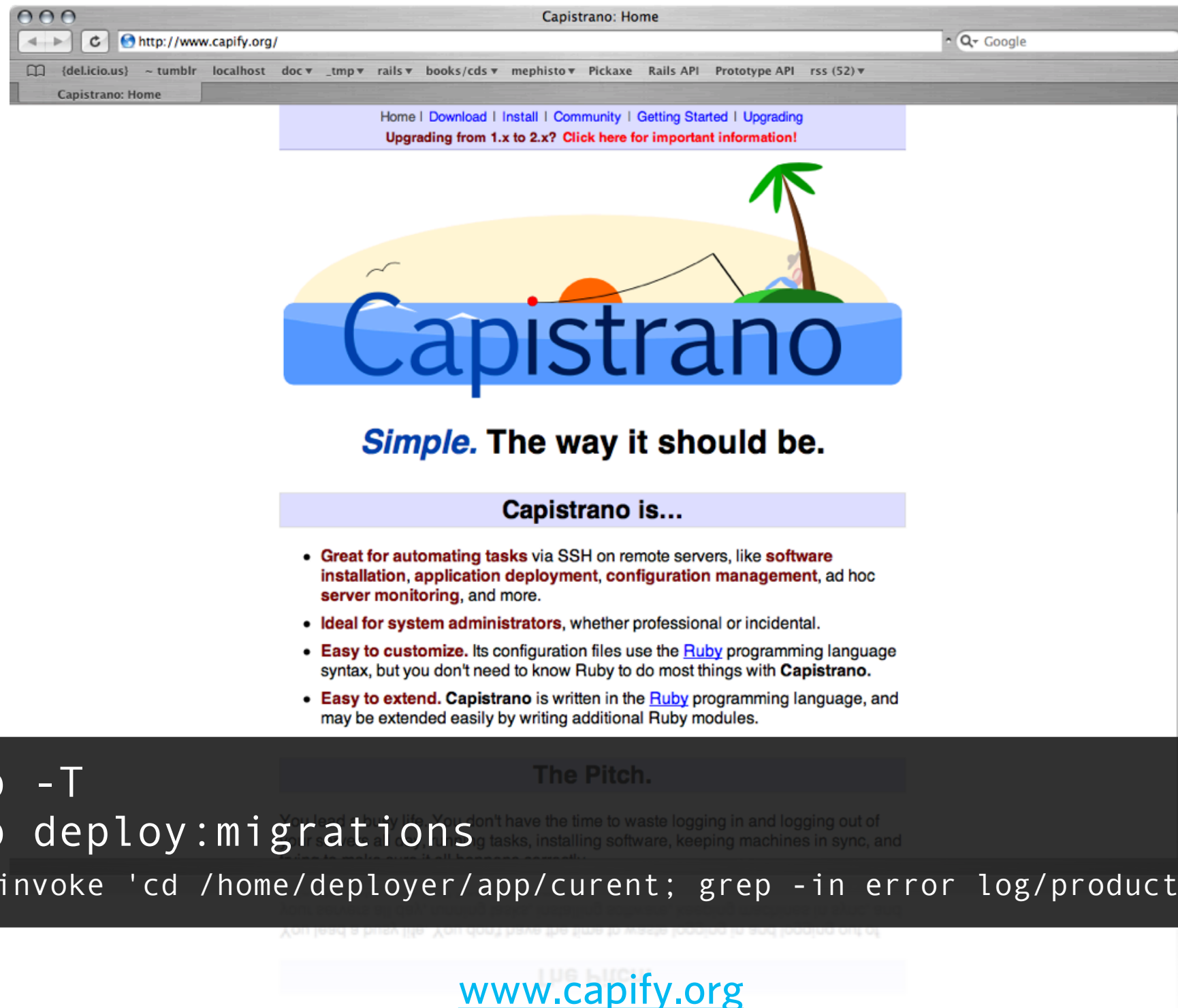
Budoucnost?



```
$ gem install passenger
$ passenger-install-apache2-module
```

Struktura deploymentu Rails aplikace





```
$ cap -T
$ cap deploy:migrations
$ cap invoke 'cd /home/deployer/app/curent; grep -in error log/production.log'
```

Další zdroje a informace

Editory a IDE pro Ruby a Rails



TextMate Mac OS X



Vim + rails.vim plugin



NetBeans

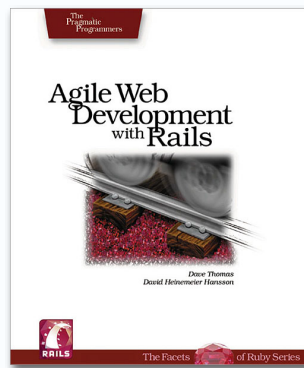


Aptana RadRails

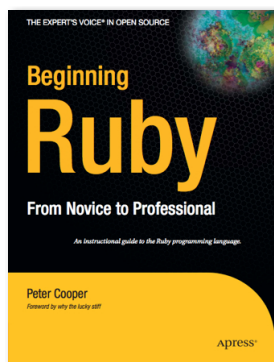


CodeGear 3rd Rail

Zdroje a informace

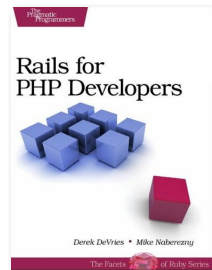


Dave Thomas, David Heinemeier Hansson, et al.
Agile Web Development With Ruby On Rails, 2nd edition
Pragmatic Bookshelf 2006 **NEW** říjen 2008



Peter Cooper, **Beginning Ruby**
Apress 2007

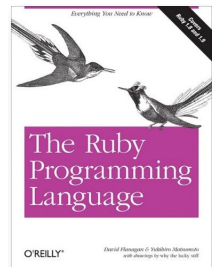
Zdroje a informace



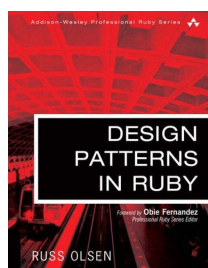
Mike Naberezny and Derek DeVries, Rails for PHP Developers
Pragmatic Bookshelf, 2008



Why The Lucky Stiff, Poignant Guide to Ruby
<http://www.poignantguide.net/ruby/>



David Flanagan a Yukihiro Matsumoto, The Ruby Programming Language
Pragmatic Bookshelf 2007



Russ Olsen, Design Patterns in Ruby
Pragmatic Bookshelf 2007

Zdroje a informace



<http://weblog.rubyonrails.org>
www.rubyinside.com
www.railsinside.com
www.planetrubyonrails.com
www.railscasts.com
www.ruby-lang.org/en/documentation/quickstart



<http://forum.rubyonrails.cz>
[#rubyonrails](#) (IRC kanál na IRCNet)
www.csrug.cz



www.railsforphp.com
<http://www.ruby-lang.org/en/documentation/ruby-from-other-languages/to-ruby-from-php>

2

Živá ukázka tvorby aplikace v Rails

To do list, simple, easy, fast, sharable: Ta-da List

http://www.tadalist.com/ Google

{del.icio.us} ~ tumblr localhost doc _tmp rails books/cds mephisto Pickaxe Rails API Prototype API rss (57)

To do list, simple, easy, fas...


Ta-da Lists™ Log into your account 37signals

It's easy to-do.

OVER 4,000,000 TO-DO'S CREATED!

Ta-da is **the web's easiest to-do list** tool.
Make lists for yourself or share them with others. It couldn't be simpler.

Sign up for free in 10 seconds
Ta-da is 100% free 100% of the time.

"Ta-da List is a Hot Site of the Day!"


Things to pack for my trip

- ☐ Sunscreen
- ☐ Sandals (maybe the green ones)
- ☐ Toothpaste
- ☐ Socks, socks, and more socks
- ☐ Thomas Jefferson biography
- ☒ 8 t-shirts
- ☒ 4 pairs of shorts
- ☒ Blue suit and orange tie
- ☒ Black and brown belt

Over 4 million to-dos added to Ta-da! Ta-da List is the easiest web-based to-do list maker.
[Check out](#) some lists people have made public or [read the buzz](#) about Ta-da, or [get inspired](#) by uses for Ta-da.

Things I need to do this week

- ☐ Wash the car
- ☐ Stock the fridge with things that have expired
- ☐ Finish reading *Cast of Shadows*
- [Add another item](#)
- ☒ Book hotels for Seattle

Check 'em off
There's nothing as satisfying as finishing something. When you're done, just check a box and the to-do is marked Done!

MY LISTS


[Movies to see before](#)
[Bills to pay](#) — 1 left
[Holiday shopping list](#)

Lists for everything
Make lists of things you need to do, your favorite songs, your homework assignments, people to call back, or...

You can share this list in two ways

1. You can publicly share the list out the URL. Note that public lists
 - ☒ Yes, allow anyone to see this list
2. You can privately share a list with a friend or family member.

Share your lists
Share your lists with friends, family, spouses, collaborators, co-workers, or keep them to yourself. It's up to you.



Wide browser support
Ta-da List works in the most popular web browsers (IE 6/7, Firefox 2, and Safari 2) on the Mac, PC, and the iPhone.

to-do is marked Done!
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co-workers' or keep them to
family' spouse' collaborators'
share your lists with friends'
share your lists

Mac' PC' and the iPhone!
Firefox 2' and Safari 2) on the
browser web browsers (IE 6/7'
Ta-da List works in the most
Wide browser support

www.tadalist.com od 37Signals

\$ sudo gem install rails
\$ rails -v
\$ rails planner

create app/controllers
create app/helpers
create app/models
create app/views/layouts
create config/environments

create config/initializers

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

Ukázka

Děkuji!

