

Ruby / Rails

Ruby

High level language.

Not designed for use on the Web

Object oriented

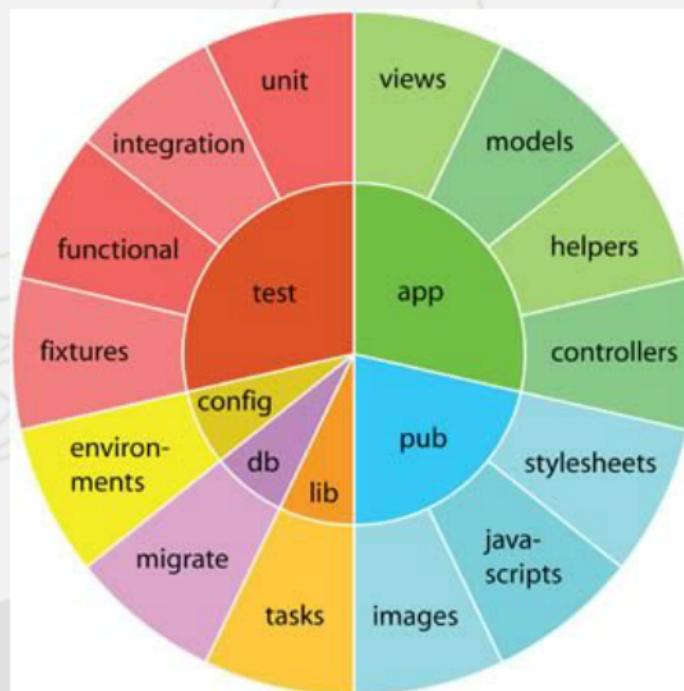
Gems

- Rails
- Framework
- Web development

```
$ gem install rails  
$ rails new app-name  
$ cd app-name  
$ rails server
```

MVC

Directories



Data base

MySQL
PostgreSQL
SQLite

db/
• Schema

Routes

config/routes.rb

rake routes: routes for all the standard RESTful actions.

| Prefix | Verb | URI Pattern | Controller#Action |
|--------------|--------|------------------------------|-------------------|
| articles | GET | /articles(.:format) | articles#index |
| | POST | /articles(.:format) | articles#create |
| new_article | GET | /articles/new(.:format) | articles#new |
| edit_article | GET | /articles/:id/edit(.:format) | articles#edit |
| article | GET | /articles/:id(.:format) | articles#show |
| | PATCH | /articles/:id(.:format) | articles#update |
| | PUT | /articles/:id(.:format) | articles#update |
| | DELETE | /articles/:id(.:format) | articles#destroy |
| root | GET | / | welcome#index |

```
Rails.application.routes.draw do
  root 'welcome#index'
  resource :articles
  get 'articles/index'
  get 'articles/new'
  post 'articles/create'
  get 'articles/edit'
  get 'articles/show'
  put 'articles/update'
  delete 'articles/destroy'
end
```

Scaffolding

\$ rails generate scaffold name [params; e.g:
name:string content:text]

app/models

config/migrate

\$ rake db:migrate

localhost:3000/plural-name

localhost:3000/plural-name.json

Controllers

```
$ rails generate controller welcome index
```

```
create app/controllers/  
welcome_controller.rb  
route get 'welcome/index'  
invoke erb  
create app/views/welcome  
create app/views/welcome/  
index.html.erb  
invoke test_unit  
create test/controllers/  
welcome_controller_test.rb  
invoke helper  
create app/helpers/welcome_helper.rb  
invoke assets  
invoke coffee  
create app/assets/javascripts/  
welcome.js.coffee  
invoke scss  
create app/assets/stylesheets/  
welcome.css.scss
```

Actions

CRUD

```
1  class FiresController < ApplicationController
2  before_action :set_fire, only: [:show, :edit, :update, :destroy]
3
4  # GET /fires
5  # GET /fires.json
6  def index
7    @fires = Fire.all
8  end
9
10 # GET /fires/1
11 # GET /fires/1.json
12 def show
13 end
14
15 # GET /fires/new
16 def new
17   @fire = Fire.new
18 end
19
20 # GET /fires/1/edit
21 def edit
22 end
23
24 # POST /fires
25 # POST /fires.json
26 def create
27   @fire = Fire.new(fire_params)
28
29   respond_to do |format|
30     if @fire.save
31       format.html { redirect_to @fire, notice: 'Fire was successfully created.' }
32       format.json { render :show, status: :created, location: @fire }
33     else
34       format.html { render :new }
35       format.json { render json: @fire.errors, status: :unprocessable_entity }
36     end
37   end
38 end
39
```

```
39      # PATCH/PUT /fires/1
40      # PATCH/PUT /fires/1.json
41      def update
42        respond_to do |format|
43          if @fire.update(fire_params)
44            format.html { redirect_to @fire, notice: 'Fire was successfully updated.' }
45            format.json { render :show, status: :ok, location: @fire }
46          else
47            format.html { render :edit }
48            format.json { render json: @fire.errors, status: :unprocessable_entity }
49          end
50        end
51      end
52    end
53
54    # DELETE /fires/1
55    # DELETE /fires/1.json
56    def destroy
57      @fire.destroy
58      respond_to do |format|
59        format.html { redirect_to fires_url, notice: 'Fire was successfully destroyed.' }
60        format.json { head :no_content }
61      end
62    end
63
64    private
65      # Use callbacks to share common setup or constraints between actions.
66      def set_fire
67        @fire = Fire.find(params[:id])
68      end
69
70      # Never trust parameters from the scary internet, only allow the white list through.
71      def fire_params
72        params.require(:fire).permit(:lat, :long, :city, :ca, :date_ini, :time_ini, :area, :item)
73      end
74    end
75  end
76
```

@fires = Fire.all

@fires = where(provincia: 'Albacete')

```
1 class FiresController < ApplicationController
2   before_action :set_fire, only: [:show, :edit, :update, :destroy]
3
4   # GET /fires
5   # GET /fires.json
6   def index
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```



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72     params.require(:fire).permit(:lat, :lng, :city, :ca, :date_ini, :time_ini, :area, :tea
73   end
74 end
```

Models

```
$ rails generate model NAME [field[:type]  
[:index] field[:type][:index]] [options]
```

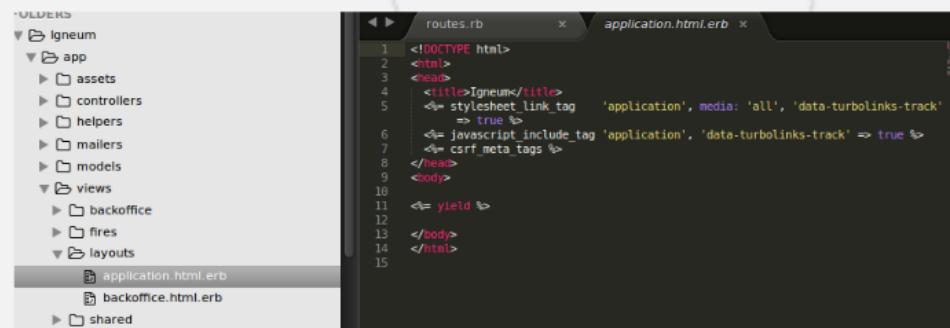
Active Record uses Object-Relational Mapping

```
class User < ActiveRecord::Base  
  validates_length_of :name, :within => 1..20  
  validates_uniqueness_of :name, :message  
=> "already exists"  
end
```

Views

app/views
Layouts

render name (_name.html)



The image shows a terminal window with two tabs: 'routes.rb' and 'application.html.erb'. The file tree on the left shows the directory structure: Igneum/app/views/layouts. The 'application.html.erb' tab contains the following code:

```
<!DOCTYPE html>
<html>
<head>
  <title>Igneum</title>
  <!-->stylesheet_link_tag 'application', media: 'all', 'data-turbolinks-track'
  <!-->javascript_include_tag 'application', 'data-turbolinks-track' => true &gt;
  <!--> csrf_meta_tags &gt;
</head>
<body>
  <!-->yield &gt;
</body>
</html>
```

render name (_name.html)

The image shows a file explorer on the left and two code editors on the right. The file explorer lists the project structure under 'Igneum' (app, assets, controllers, helpers, mailers, models, views/backoffice, views/fires, views/layouts). The 'views/layouts' folder contains 'application.html.erb' and 'backoffice.html.erb'. The right side has two tabs: 'routes.rb' and 'application.html.erb'. The 'application.html.erb' tab is active, displaying the following code:

```
<!DOCTYPE html>
<html>
<head>
  <title>Igneum</title>
  <%= stylesheet_link_tag 'application', media: 'all', 'data-turbolinks-track' => true %>
  <%= javascript_include_tag 'application', 'data-turbolinks-track' => true %>
  <%= csrf_meta_tags %>
</head>
<body>
<%= yield %>
</body>
</html>
```

Javascript

app/assets/javascript
application.js

//= require map

localhost:3000/plural-name.json

Backbone.js - MVC

Igneum

Spanish forest fires represented
on map visualization

- RUBY ON RAILS
- Backbonejs
- CartodDB
- Leafletjs
- Mysql

User main site

User can interact with the map to get information about the fires depending on each month



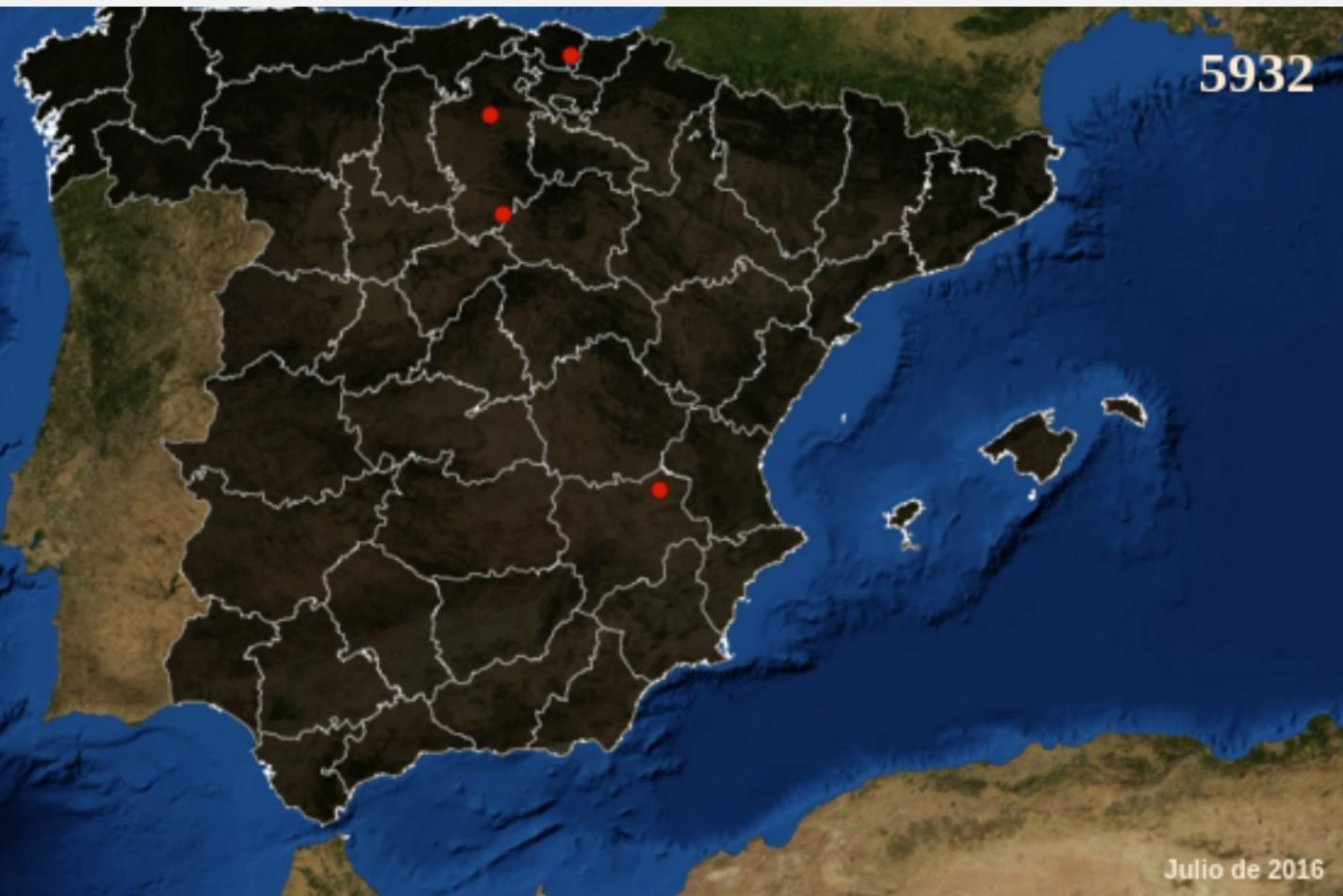
Introduction

Forest fires originated in the current month
& Forest Firefighters tribute



Igneum >

5932



Incendios forestales en el territorio español

Month

Represents forest fires of month & year selected plus extra data of interest



Año 2016

Mes

Junio

Visualizar

- Enero
- Febrero
- Marzo
- Abril
- Mayo
- Junio
- Julio
- Agosto
- Septiembre
- Octubre
- Noviembre
- Diciembre



Junio de 2016

6 incendios en toda España

Se han producido en 3 provincias diferentes.

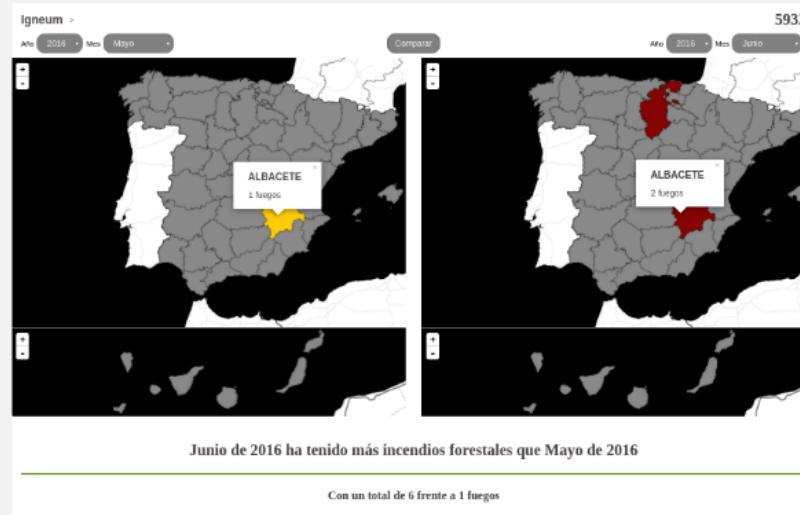
Las provincias con mayor número son:

- * Burgos

con un total de 3 incendios cada una.

Compare months

Compares forest fires by community
between two months



Año 2016 Mes Mayo

Comparar

Año 2016 Mes Junio



Junio de 2016 ha tenido más incendios forestales que Mayo de 2016

Con un total de 6 frente a 1 fuego

Backoffice

Restricted Area / 3rd Party

Restricted area

Log In

Google+

Restricted area

[Log In](#)

[Google+](#)

Fires

Shows a list of data of all forest fires of the current month

| Municipio | Provincia | Fecha |
|-----------|-----------------|----------------------|
| Abengibre | Albacete | 2016-06-04T17:23:56Z |
| Abajas | Burgos | 2016-06-04T17:25:11Z |
| Abajas | Burgos | 2016-06-04T17:25:26Z |
| Abengibre | Albacete | 2016-06-04T17:25:33Z |
| Arandilla | Burgos | 2016-06-04T18:39:20Z |
| Abadino | Bizkaia/Vizcaya | 2016-06-12T15:45:21Z |

current month

Fires

Add fire

Delete fire

Set user

X

Fires

| Municipio | Provincia | Fecha |
|-----------|-----------------|----------------------|
| Abengibre | Albacete | 2016-06-04T17:23:56Z |
| Abajas | Burgos | 2016-06-04T17:25:11Z |
| Abajas | Burgos | 2016-06-04T17:25:26Z |
| Abengibre | Albacete | 2016-06-04T17:25:33Z |
| Arandilla | Burgos | 2016-06-04T18:39:20Z |
| Abadino | Bizkaia/Vizcaya | 2016-06-12T15:45:21Z |

Add Fire

By province & locality

The screenshot shows a user interface for adding a fire. At the top, there is a navigation bar with four items: 'Fires' (highlighted in green), 'Add fire', 'Delete fire', and 'Set user'. To the right of the 'Add fire' button is a small circular icon with an 'X'. Below the navigation bar, the text '- add fire -' is displayed. There are two dropdown menus: 'Provincias' set to 'Albacete' and 'Municipios' set to 'Abengibre'. To the right of the 'Municipios' dropdown is a green 'Add' button.

Fires Add fire Delete fire Set user

- add fire -

Provincias Albacete

Municipios Abengibre Add

province & locality



X

- add fire -

Provincias

Albacete

Municipios

Abengibre

Add

Delete Fires

By id

The screenshot shows a user interface for managing fires. At the top, there is a navigation bar with four buttons: 'Fires' (highlighted in green), 'Add fire', 'Delete fire', and 'Set user'. To the right of the buttons is a small circular icon with an 'X'. Below the navigation bar, the text '- delete fire -' is displayed. Underneath this, there is a search bar with the label 'Id' and a placeholder field, followed by a 'Delete' button. At the bottom, a table lists six fire entries:

| ID | Municipio | Provincia | Fecha |
|-----|-----------|-----------------|----------------------|
| 142 | Abengibre | Albacete | 2016-06-04T17:23:56Z |
| 143 | Abajas | Burgos | 2016-06-04T17:25:11Z |
| 144 | Abajas | Burgos | 2016-06-04T17:25:26Z |
| 145 | Abengibre | Albacete | 2016-06-04T17:25:33Z |
| 146 | Arandilla | Burgos | 2016-06-04T18:39:20Z |
| 149 | Abadino | Bizkaia/Vizcaya | 2016-06-12T15:45:21Z |

Fires

Add
fire

Delete
fire

Set
user

X

- delete fire -

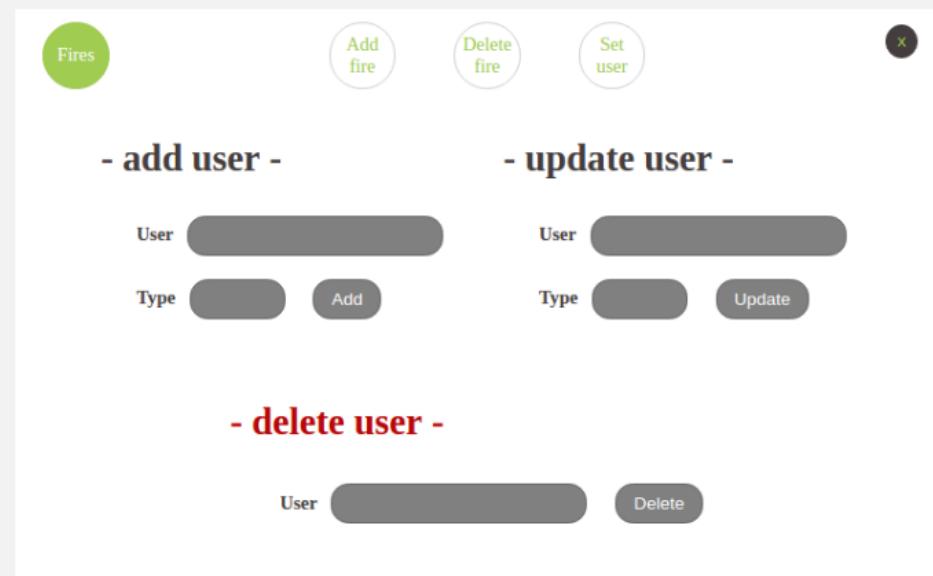
Id

Delete

| ID | Municipio | Provincia | Fecha |
|-----|-----------|-----------------|----------------------|
| 142 | Abengibre | Albacete | 2016-06-04T17:23:56Z |
| 143 | Abajas | Burgos | 2016-06-04T17:25:11Z |
| 144 | Abajas | Burgos | 2016-06-04T17:25:26Z |
| 145 | Abengibre | Albacete | 2016-06-04T17:25:33Z |
| 146 | Arandilla | Burgos | 2016-06-04T18:39:20Z |
| 149 | Abadino | Bizkaia/Vizcaya | 2016-06-12T15:45:21Z |

Set User

Adds (Post), updates (Put) & deletes (Delete) users to be able to manage fires data



Fires

Add fire

Delete fire

Set user

X

- add user -

User

Add



- update user -

User

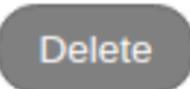
Update



- delete user -

User

Delete



Advantages

Ruby: intuitive to understand & non-strict to write, flexible

Less code lines

3rd party libraries.

Rails: does much of the hard work

Convention over configuration (CoC) – has a structured layout with defaults

Rapid prototyping & implementation to build web applications

Forces to write structured and good code

Don't Repeat Yourself: DRY

Large support community (online & offline)

Start-ups

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Disadvantages

Ruby: slower code execution & requires more memory than other languages

Rails: not really learn the fundamental stuff

Slow boot speed, depending on the number of gem dependencies and files

Disadvantages

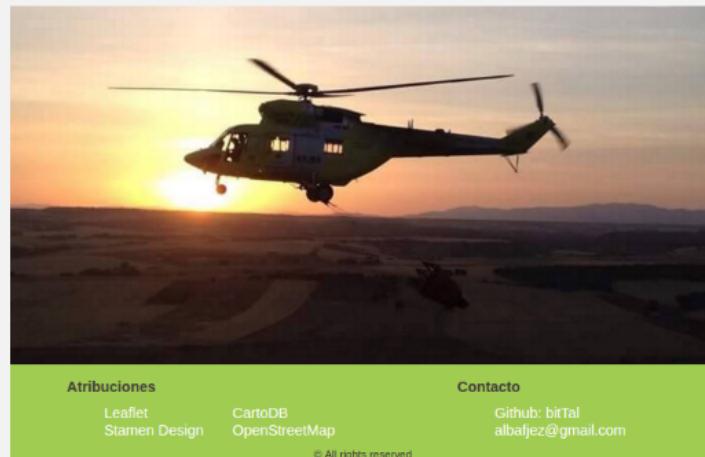
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CREATED BY

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