HTML5 and CSS3 for Mobile Applications

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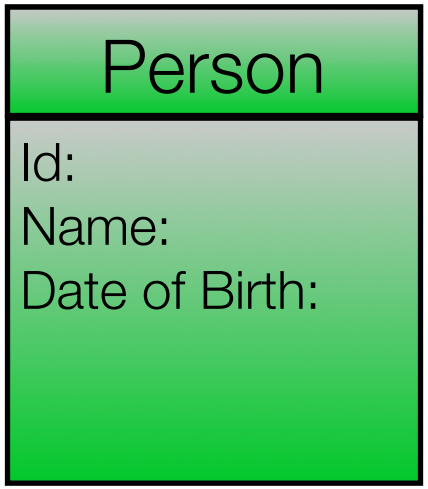
Using Active Record

Objectives for today

- Remove our static Events page and replace it with an index page of dynamically generated Events
- This will introduce Rails' Active Record and its:
  - Object-Relation Mapping
  - Support for Database Migrations
  - Scaffold for generating everything you need to support an Events resource

Object-Relational Mapping

- Classes map to Tables
- Attributes map to Columns in the respective Table
- Objects map to Rows
- Rails will handle the pluralisation automatically for you
    - (and usually gets it right)



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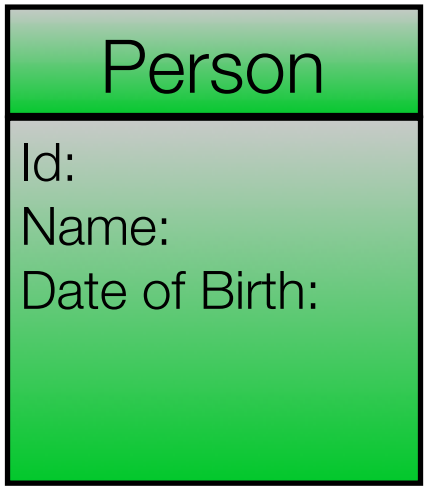

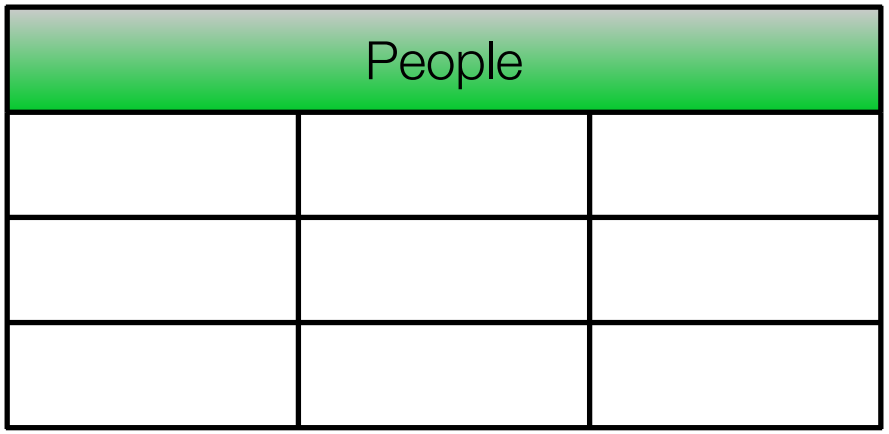

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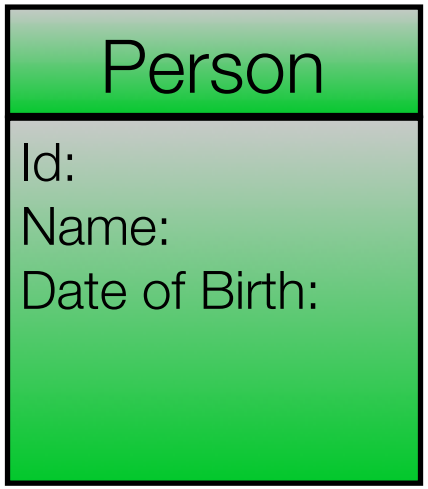

People		
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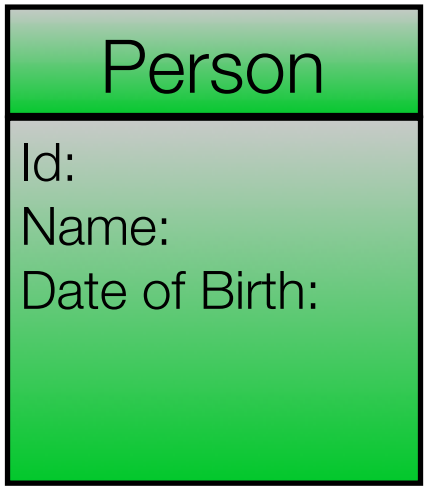

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ID	Name	DoB
1	Paul	c1900

The Event Model

What do we want to do (with Events)?

- Create
  - a new Event
- Read
  - an existing Event
- Update
  - an existing Event
- Destroy
  - an existing Event

How do we set up the database?

- Do nothing!
- Rails already has SQLite3 bundled and will generate the database for you

The Prolog

- Strip out the:
  - Events action in the application controller
  - Events view
  - /events route in config/routes.rb

Build a CRUD interface for the Event model

rails generate scaffold Event title:string date:date description:text

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Mapping Migration types to Database types

Migration type	MySQL	SQLite	Ruby Class
:binary	blob	blob	String
:boolean	tinyint(1)	boolean	Boolean
:date	date	date	Date
:datetime	datetime	datetime	Time
:decimal	decimal	decimal	BigDecimal
:float	float	float	Float
:integer	int(11)	integer	Fixnum
:string	varchar(255)	varchar(255)	String
:text	text	text	String
:time	time	time	Time
:timestamp	datetime	datetime	Time

Run the database migration

rake db:migrate

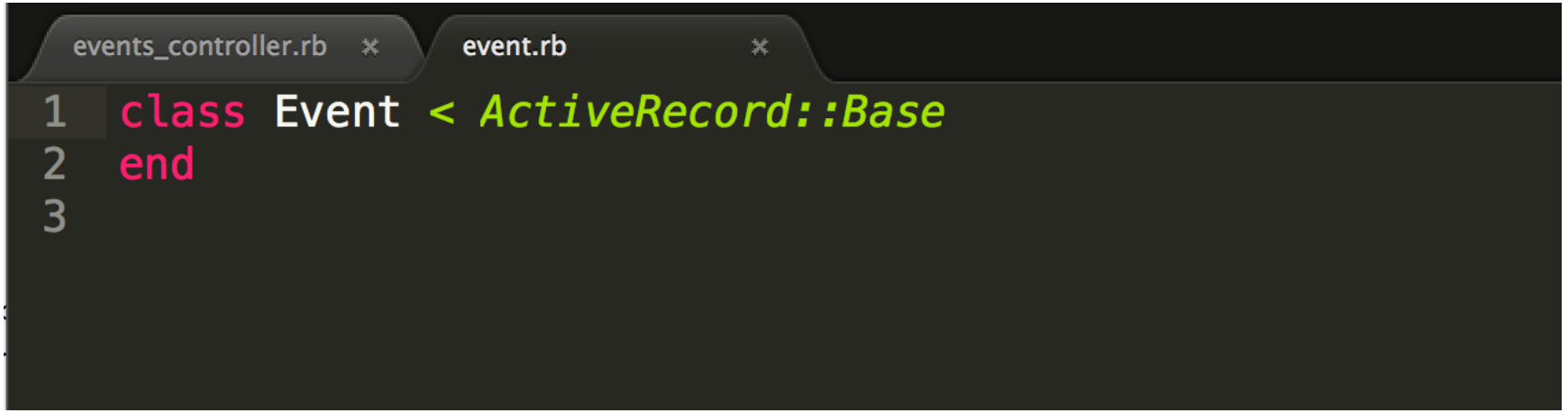
A set of routes for events in one statement

events_controller.rb | event.rb | routes.rb

```ruby
AAAWebsite::Application.routes.draw do
  resources :events

  match "/index" => "aaa_core#index", via: :get
  match "/shop" => "aaa_core#shop", via: :get
  match "/discussion" => "aaa_core#discussion", via: :get
  # The priority is based upon order of creation: first created -> highest priority.
  # See how all your routes lay out with "rake routes".

  # You can have the root of your site routed with "root"
  root 'aaa_core#index'

```

A little surprise!

- models/event.rb



- *Metaprogramming* enables Active Record to automatically add features to the model classes: e.g. it adds attributes to the model classes based on the columns in the corresponding database tables.

White list for parameters from the scary Internet

In: app/controllers/events_controller.rb

```ruby
  private
    # Use callbacks to share common setup or constraints between actions.
    def set_event
      @event = Event.find(params[:id])
    end

    # Never trust parameters from the scary internet, only allow the white list through.
    def event_params
      params.require(:event).permit(:title, :date, :description)
    end
```

What we have done

- This has introduced Active Record
    - Probably the most impressive feature of Rails
- And we didn’t even write one line of code!