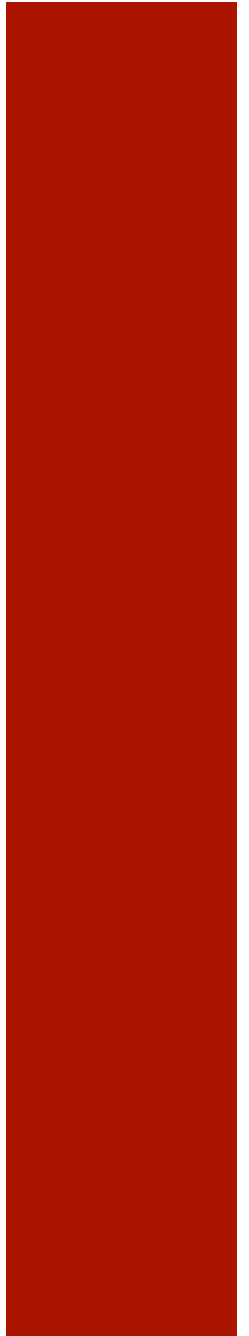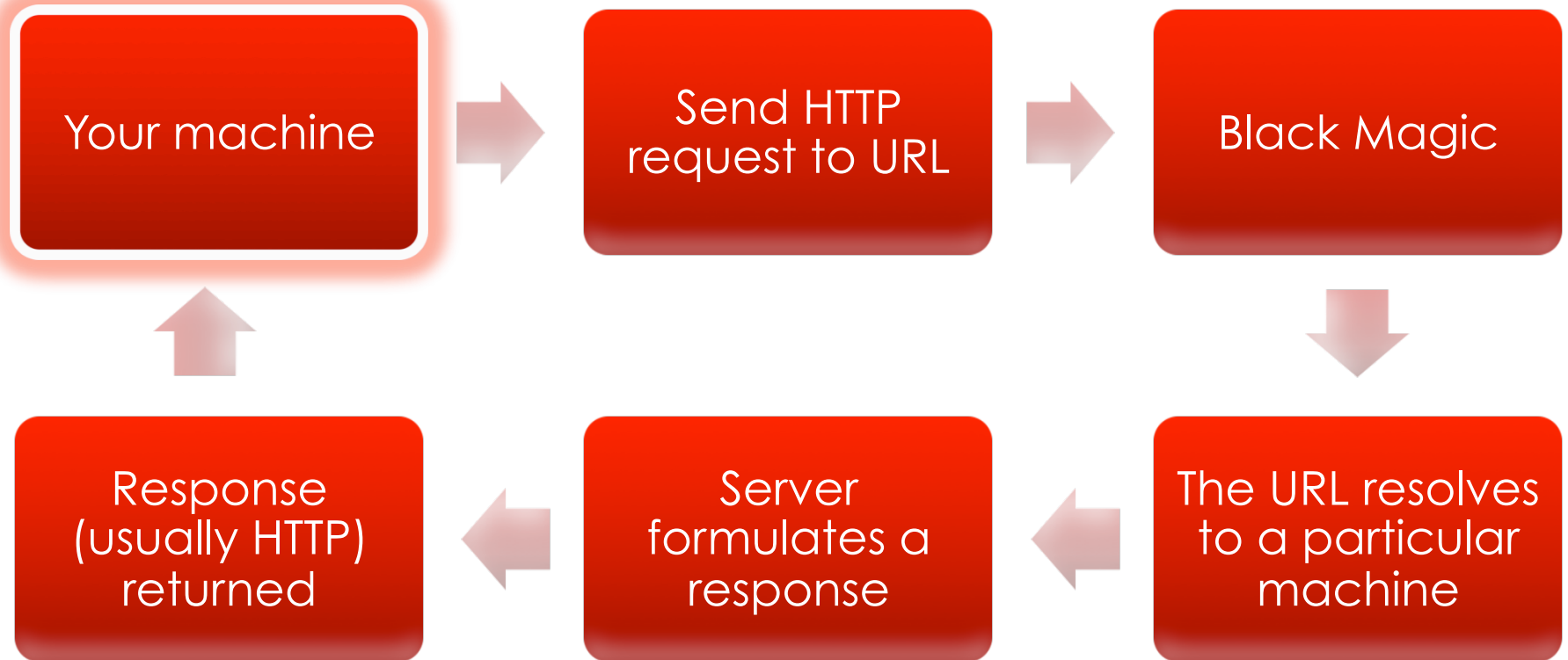# An Introduction to Web Development with Ruby on Rails

Presented by Zach Montoya
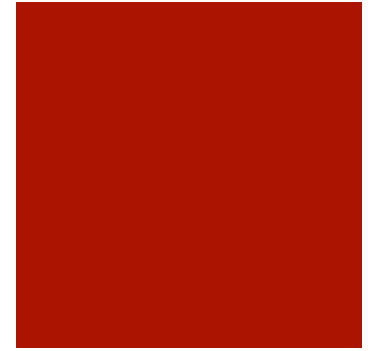
The Interwebz

In a Nutshell

```
Your machine  →  Send HTTP request to URL  →  Black Magic
     ↑                                              ↓
Response (usually HTTP) returned  ←  Server formulates a response  ←  The URL resolves to a particular machine
```

# What Goes Into a Web Page

- HTML
  - Mark-up
  - Headings, paragraphs, lists, images

- CSS
  - Style
  - Sizing, padding, background and foreground colors, animations

- Javascript
  - Client-side behavior
  - Loading data, changing HTML elements, animations

What ELSE Goes Into a Web Page

- Server-side Technology
  - Performs backend logic
  - E.g. PHP, Ruby on Rails, ASP.NET
  - Interacts with databases…

- Databases
  - STORE DATA
  - E.g. MySQL, PostgreSQL, Microsoft SQL Server, Hadoop
  - Two main varieties: Relational databases, NoSQL databases

Ruby on Rails
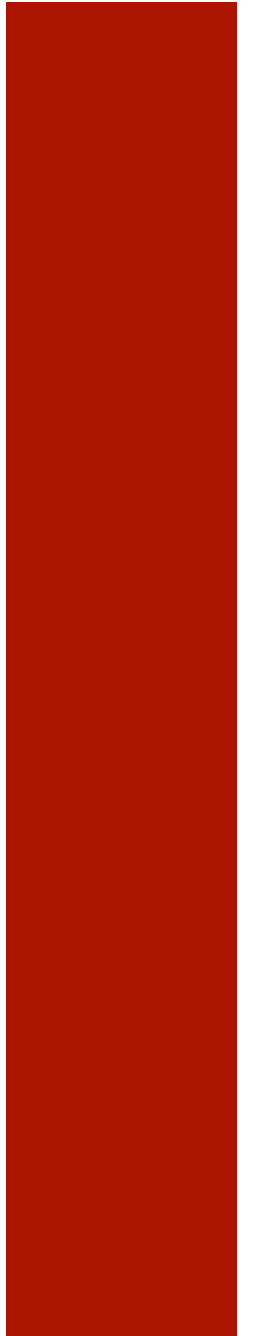
Terms I'll Use

- Ruby

- Rails

- Erb

What is it?

- A framework
  - Follows MVC model (Model-View-Controller)
  - Enforces structure
  - Makes life WAY EASIER for you

- Uses Ruby for controller logic
  - Very much like Python
  - Object oriented – EVERYTHING is an object
  - Dynamically typed
  - Extremely readable
  - Kinda quirky

MVC

Model
- Represents an object in OO
- Translates directly to DB structure
- Contains methods and properties

View
- The page that is displayed to the user
- Corresponds to a model

Controller
- Communicates between Model and View and may handle session data
- Corresponds to a model

Application Structure

- app/
  - assets/
    - javascripts/
    - stylesheets/
  - controllers/
  - helpers/
  - models/
  - views/

- config/

- test/

Makes life easier?

- Form Helpers
  - Ex.
    form_tag({controller: "people", action: "search"}, method: "get", class: "my_form")
  - Ex.
    label_tag(:name, "Your name")

- Rails Asset Pipeline
  - Allows easy reference to assets
    - In view: <% image_tag("rails.png") %>
  - application.js and application.css (can be disabled)
  - By default, preprocessing for Sass and Coffeescript

Makes life easier?

- Active Record
  - An implementation of Object Relation Mapping (ORM)
  - Structured naming conventions

| Model / Class	Table / Schema
Post	posts
LineItem	line_items
Deer	deers
Mouse	mice
Person	people

1

Makes life easier?
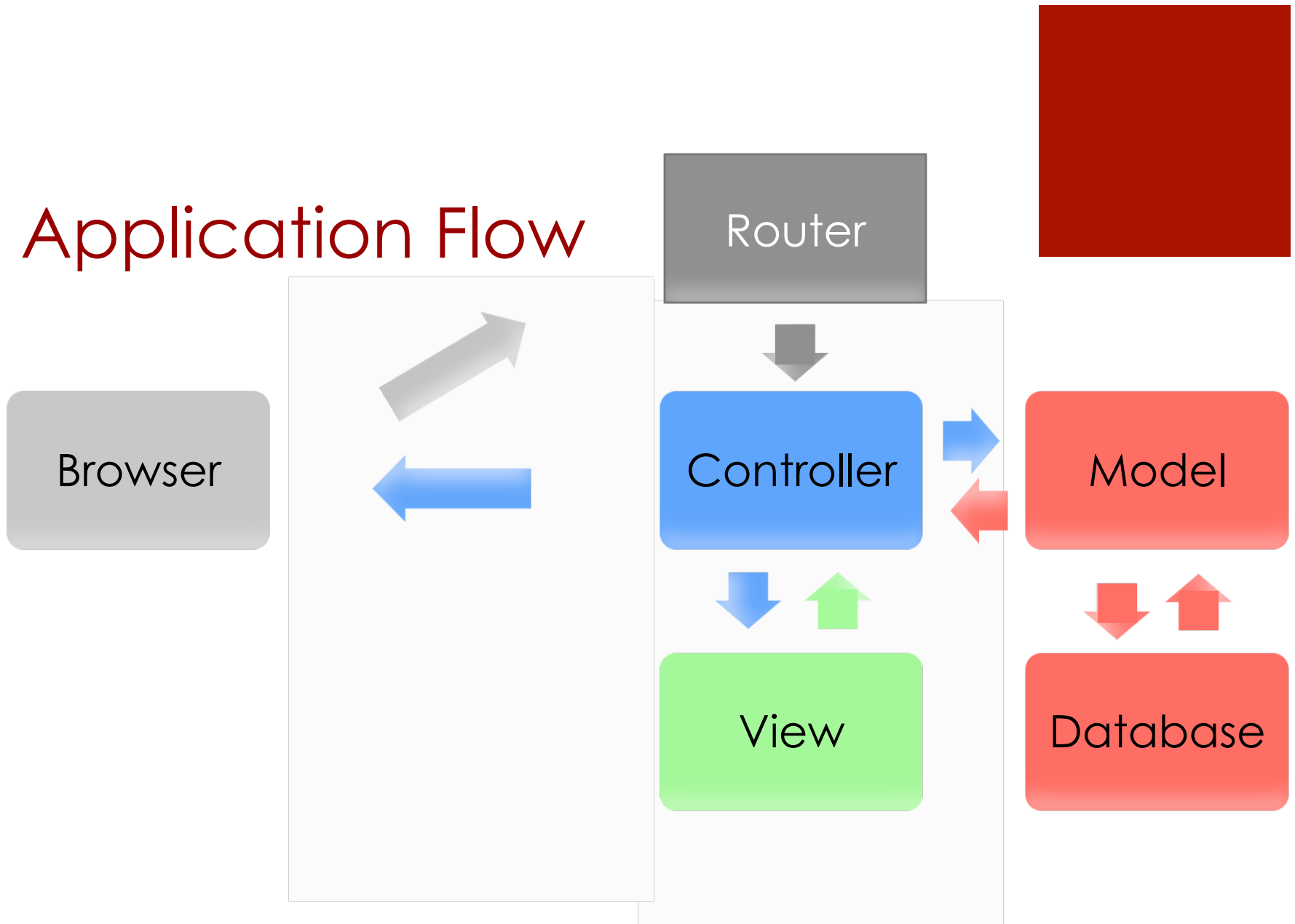
- Active Record (cont.)
  - Easy to retrieve objects
    - User.all
    - User.find(20)
    - User.find_by(first_name: "John")
  - Easy to update objects
    - user = User.find(20)
      user.name = "Phillip"
      user.save
      ------------ or ------------
      user.update_attribute(:name, "Phillip")
      ------------ or ------------
      user.update_attributes(name: "Phillip", age: 50)

Application Flow

Application Flow

Router

Browser

Controller

Model

View

Database
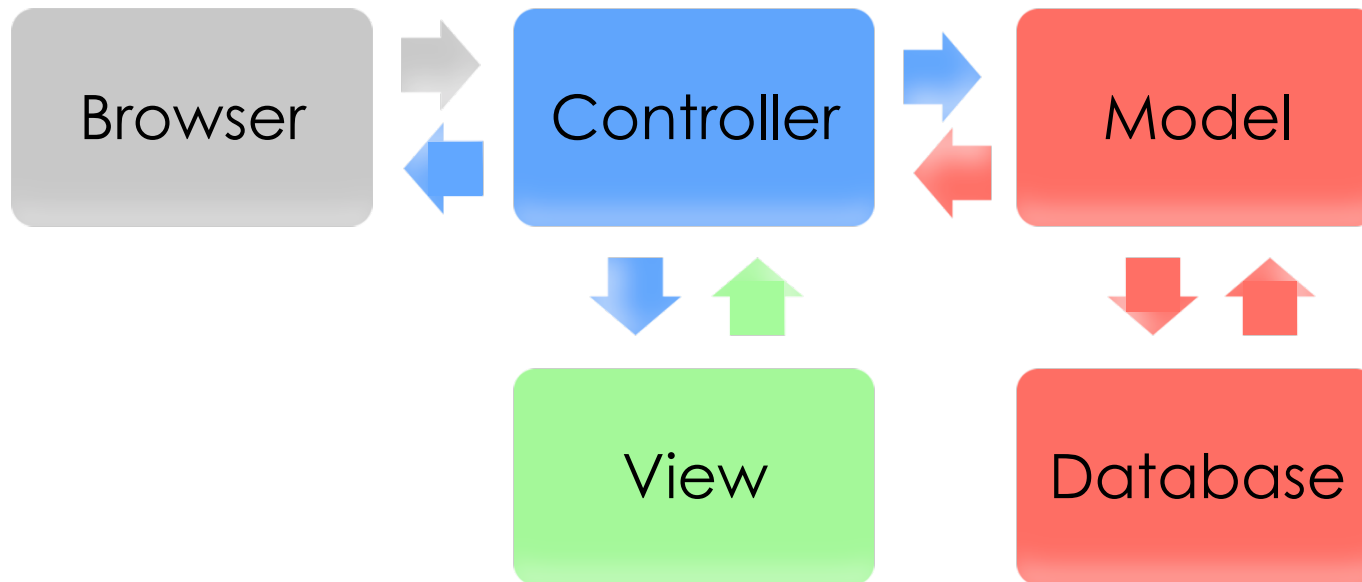
Demonstration
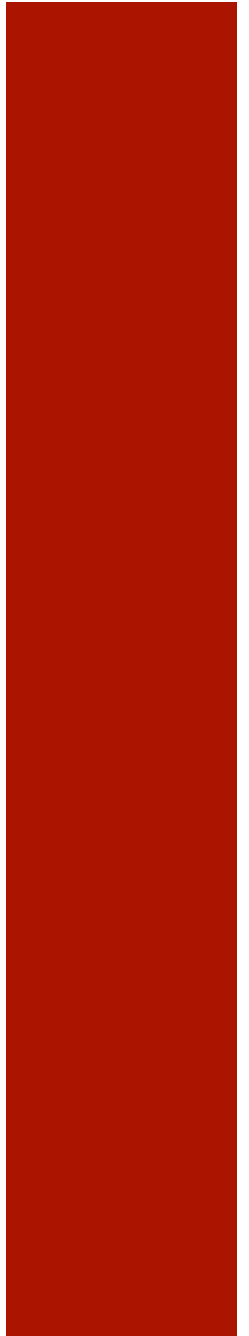
References

- 1. *RailsGuides*. http://guides.rubyonrails.org/

- 2. "Starting Ruby on Rails: What I Wish I Knew." *Better Explained*. http://betterexplained.com/ articles/starting-ruby-on-rails-what-i-wish-i-knew/

- 3. "Intermediate Rails: Understanding Models, Views and Controllers." *Better Explained*. http:// betterexplained.com/articles/intermediate-rails-understanding-models-views-and-controllers/