

UBC on Rails

Outline

- Speaker Introduction
- Ruby on Rails Introduction
- Background Web Information
- Ruby
- Rails
- Live Demo
- Links & Next Steps

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BASc in Computer Engineering



Local Private Company
Startup mentality w/ 60 people

Passionate teams
Agile process
Ruby development



Ruby on Rails Introduction

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Ruby on Rails Introduction

- Ruby is a programming language
 - Developer happiness
- Rails is a web framework
 - Quickly develop web applications
- Strong & vocal community
 - Help you become a better developer
- Great Jobs
 - Very popular and difficult to hire good ruby developers

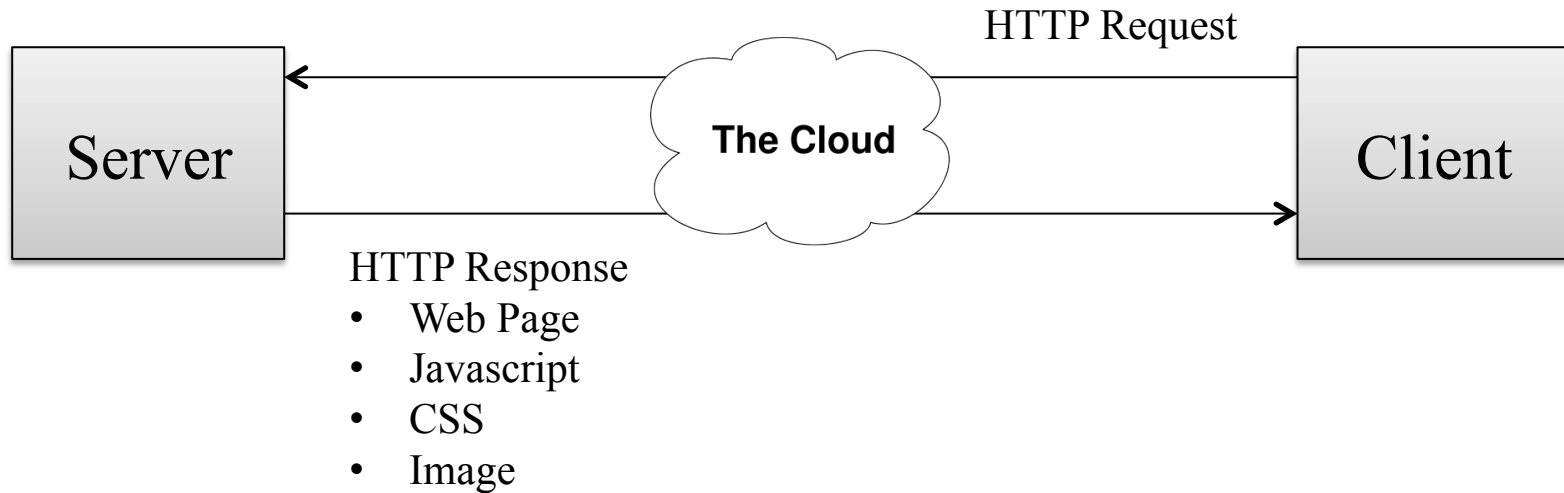
Background Web Information

- Speaker Introduction
- Ruby on Rails Introduction
- **Background Web Information**
 - Why is this important
 - Client / Server
 - Web Page Elements
 - HTTP Request & Response
- Ruby
- Rails
- Live Demo
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Web – Why It Is Important

- Understanding the environment will make you a better developer
- Rails runs on the web and is designed for the web
- Understand the web request cycle
 - Know your input
 - Know your output

Web - Client / Server



Server

- Generates dynamic web pages
- Serves static assets
- Stores user information
- **This is where Rails executes!**

Client

- Computer, Phone, Tablet
- Web Browser
- User views web page

Web Page Elements

HTML

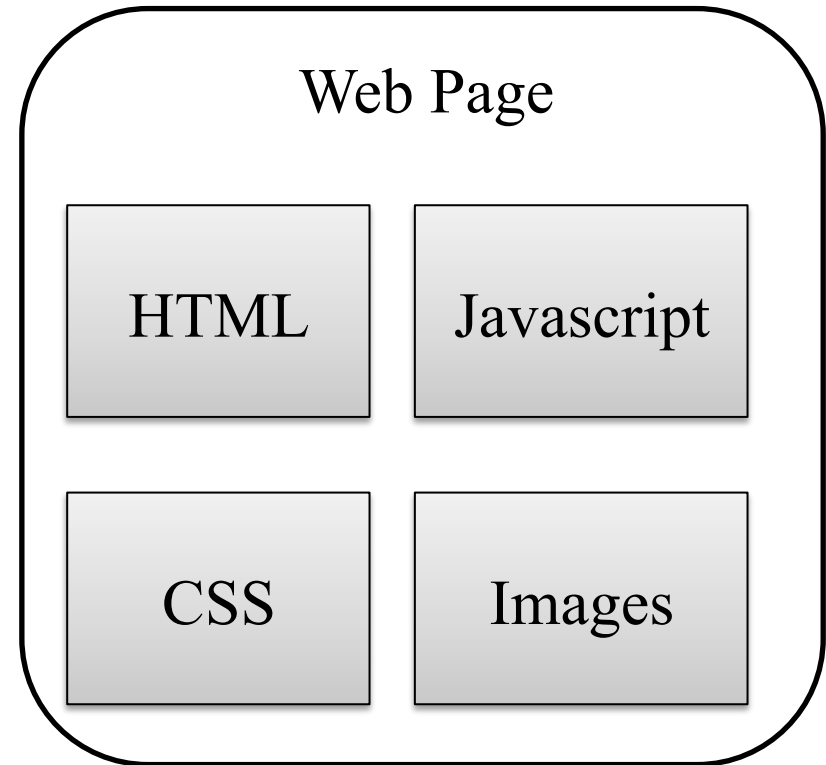
- Describes all the elements on the page (text, structure)

Javascript

- Adds behaviour and action to the page

CSS

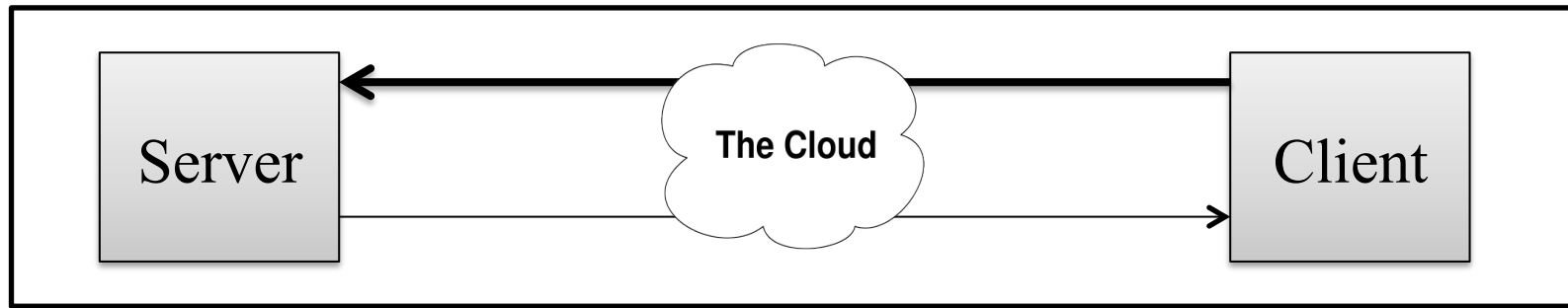
- Applies styles, color, layout to the html elements to make the page look better



Images

- Make the page look pretty and appeal to the user

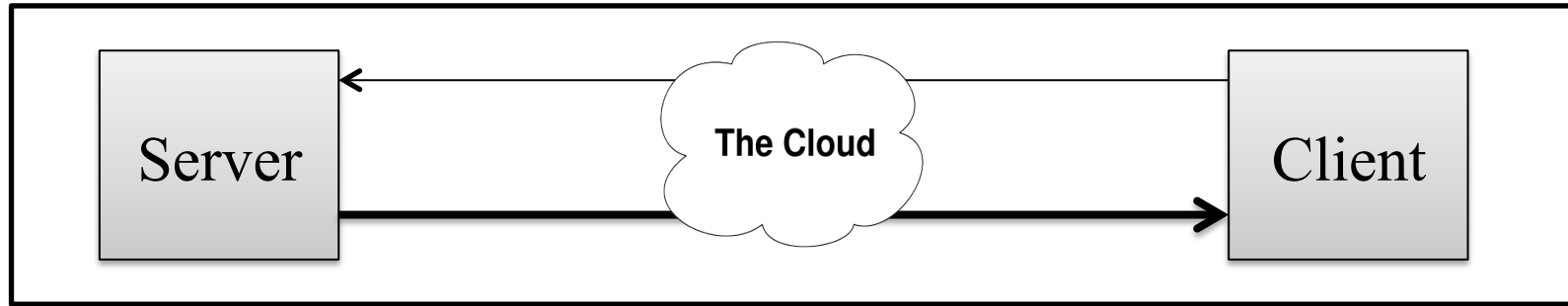
Web - HTTP Request



What data is in an HTTP Request?

URL	What page do you want?
Headers <ul style="list-style-type: none">• Cookies• Content-type• Accepts	Additional Information <ul style="list-style-type: none">• Session State (who the user is)• What type of data is included• What type of information the client wants• Many more headers
Data <ul style="list-style-type: none">• Form Data• File Uploads	Information the client is sending the server <ul style="list-style-type: none">• Data when you fill out any form• Uploaded Files

Web - HTTP Response



What data is in an HTTP Response?

Status	What is the general result? <ul style="list-style-type: none">• 200 – Success, 404 – Not Found, 500 – Server Error
Headers <ul style="list-style-type: none">• Set-Cookie• Content-type• Content-Length• Cache Headers	Additional Information <ul style="list-style-type: none">• Updated Session State• What type of data is included• How much data is being sent• Controls for caching data• Many more headers
Data <ul style="list-style-type: none">• Form Data• File Uploads	Information the client is sending the server <ul style="list-style-type: none">• Data when you fill out any form• Uploaded Files

Ruby

- Speaker Introduction
- Ruby on Rails Introduction
- Background Web Information
- **Ruby**
 - Overview
 - Features
 - Installation & Virtual Machines
 - Editors
 - Libraries
- Rails
- Live Demo
- Links & Next Steps

Ruby - Overview

- History
 - Open source language
 - Originated in Japan in 1993 by Yukihiro Matsumoto
- Ruby 1.9.3 is the latest
 - 1.8.7 is sometimes still used
- Different Runtimes or Virtual Machines
 - Jruby
 - MRI (Matz Ruby Interpreter)
 - Rubinius

Ruby - Features

- Object Oriented
 - Everything is an object
- Open Classes
 - Add methods to pre-existing classes
- Blocks
 - Easily pass anonymous functions
- Strongly Typed
 - Every variable / object is from a specific class
- Garbage Collection
 - No need to free up memory
- Interpreted Language
 - Line by line

Ruby – Installation

- Windows – Use Jruby
 - Installation wizard
 - <http://jruby.org/download>
- Mac – Ruby Version Manager (RVM)
 - `sudo gem install rvm`
 - `rvm install 1.9.3`
 - <http://beginrescueend.com/>
- Linux – Ruby Version Manager
 - First install ruby via package manager
 - `sudo gem install rvm`
 - `rvm install 1.9.3`

Ruby – Editors

Editor	Platforms	Licensing	Notes
RubyMine	Linux / Mac / Win	Commercial	Full featured IDE
Aptana	Linux / Mac / Win	Free	Full featured IDE
Textmate	Mac	Commercial	Popular but basically an text editor
Vim	Linux / Mac	Free	Vi Improved. Steep learning curve

- Use whatever you feel comfortable with
- Autocomplete won't work well

Ruby – Libraries

- Libraries in Ruby are packaged and managed as gems
 - Rubygems is the package management system
 - <http://rubygems.org/>
- Bundler manages an application/library dependencies
 - Define what gems you want to use
 - Bundler will install and load them for you
 - **You will use this in rails**

Rails

- Speaker Introduction
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- Ruby
- **Rails**
 - Overview
 - Architecture
 - Directory Structure
- Live Demo
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Rails - Overview

- What is it?

“Ruby on Rails is an open-source web framework that’s optimized for programmer happiness and sustainable productivity. It lets you write beautiful code by favoring convention over configuration”

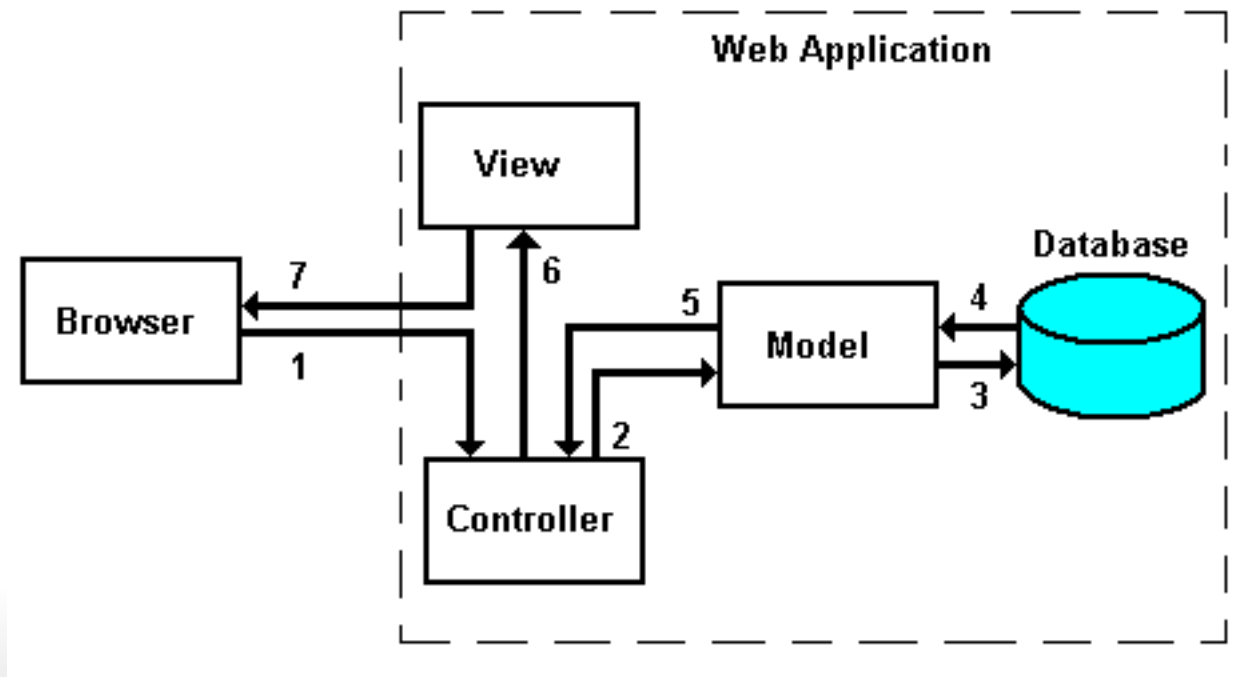
- The Rails Philosophy
 - Convention over Configuration
 - Follow the Rails way and things will work.
 - Don’t Repeat Yourself
 - Don’t copy and paste code!
 - REST – Representation State Transfer – is the best pattern for web applications

Rails - Architecture

- Model, View Controller Pattern (MVC)
- **Model** represents the data of the application and the rules to manipulate this data. Typically each model maps to a database table
- **Views** represent the user interface of the application. Typically these are HTML files with embedded ruby code.
- **Controller** provide the “glue” between the model and the views. They are responsible for processing the incoming parameters, interacting with the models and passing the models to the view for rendering.

Rails - Architecture

- A typical web request in Rails.



1. There is actually a router here that maps the incoming request to the specific controller

Rails – Directory Structure

Gemfile	This file allows you to specify what gem dependencies are needed for your Rails application.
app/	Contains the controllers, models, views and assets for your application.
config/	Configure your application's runtime rules, routes, database, and more.
db/	Shows your current database schema, as well as the database migrations.
lib/	A place to put extended ruby classes.
log/	Application log files.
public/	The only folder seen to the world as-is. Contains the static files and compiled assets.
test/	Unit tests, fixtures, and other test apparatus. These are covered in Testing Rails Applications
tmp/	Temporary files.
vendor/	A place for all third-party code. In a typical Rails application, this includes Ruby Gems, the Rails source code (if you install it into your project) and plugins containing additional prepackaged functionality.

Rails - Tips

- Use github and git for source control
 - Steep learning curve with Git but if you want to work with rails use it.
 - Start today!

Live Demo

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Links & Next Steps

- Speaker Introduction
- Ruby & Rails Introduction
- Background Web Information
- Ruby
- Rails
- Live Demo
- **Links & Next Steps**
 - Ruby Links
 - Rails Links

Links - Ruby

<http://tryruby.org/>

Interactive Ruby Web Console

<http://www.rubyinside.com>

Ruby Inside – A blog to keep up to date

<http://www.ruby-doc.org/docs/ProgrammingRuby/>

Online Free Book.

<http://mislav.uniqpath.com/poignant-guide/>

Cult Ruby Book

<http://ruby.learncodethehardway.org/>

52 Ruby exercises to learn the language

<http://rubykoans.com/>

The koans walk you along the path to enlightenment in order to learn ruby

Links - Rails

<http://railsforzombies.org/>

Rails for Zombies

<http://railscasts.com/>

Ruby on Rails Screencasts

Free and lots of them!

<http://www.rubyflow.com/>

A link aggregator for the latest in the community

<http://guides.rubyonrails.org/>

Ruby on Rails Guides

<https://www.ruby-toolbox.com/>

The Ruby Toolbox

<http://twitter.github.com/bootstrap/>

Twitter Bootstrap

Questions!