



# Intro to Ruby on Rails

## Part I

# History - Ruby on Rails (RoR)

- Framework for making dynamic web applications
- Created in 2004 - 2005 by David Heinemeier Hansson (a.k.a. DHH)
  - Recognized by Google and O'Reilly as Hacker of the year for creating Rails (2005)



# Who is using Rails?

- Twitter (Partially)
- Groupon, Living Social
- Yellow pages, White pages
- Github, Hulu
- And many more...
  - <http://rubyonrails.org/>
  - Not just a toy framework anymore

# Why use Rails?

- Convention over configuration (COC)
  - Less code to write
    - Some code Rails automatically generates for you
    - Oftentimes, there is no need to write code at all
  - Learn it once - know what to expect the next time
- Database Abstraction Layer
  - No need to deal with low-level DB details
  - No more SQL (*Almost*)

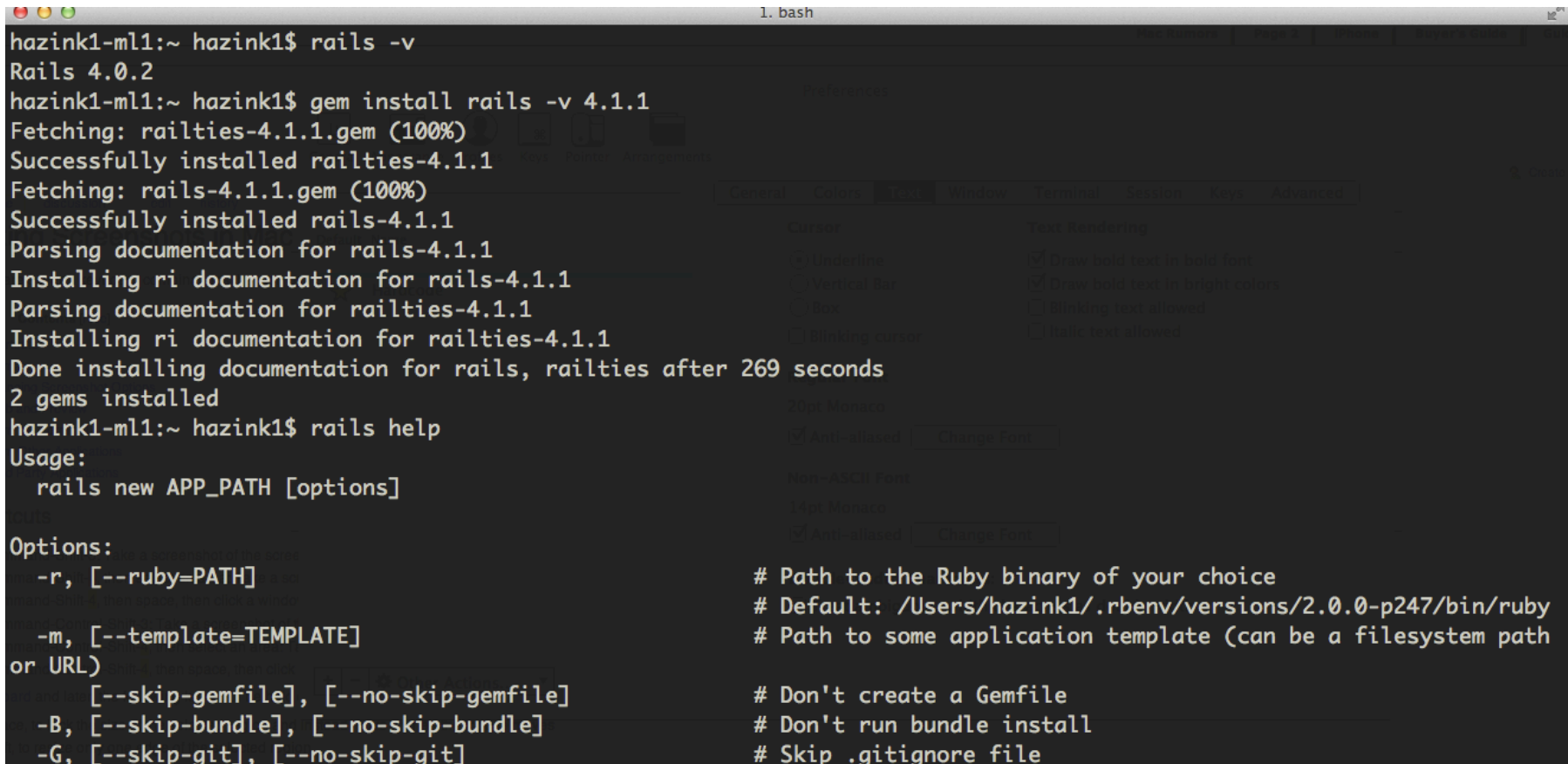
# Why use Rails? (Continuation)

- Agile-friendly
  - Encourages unit, functional and integration tests
- DRY principle
  - Don't repeat yourself
- Cross-platform
- Open Source - MIT License
- Modular - swap different components in/out

# SQLite

- Rails uses SQLite for database by default
  - Self-contained, serverless, zero-configuration, transactional, relational SQL database engine.
- **CLAIM:** Most widely deployed SQL database engine in the world.
  - 300 million copies of Firefox
  - 20 million Mac computers
  - iPhone, Android phones
  - <http://www.sqlite.org/mostdeployed.html>

# Verify that Rails is installed



```
1. bash
hazink1-ml1:~ hazink1$ rails -v
Rails 4.0.2
hazink1-ml1:~ hazink1$ gem install rails -v 4.1.1
Fetching: railties-4.1.1.gem (100%)
Successfully installed railties-4.1.1
Fetching: rails-4.1.1.gem (100%)
Successfully installed rails-4.1.1
Parsing documentation for rails-4.1.1
Installing ri documentation for rails-4.1.1
Parsing documentation for railties-4.1.1
Installing ri documentation for railties-4.1.1
Done installing documentation for rails, railties after 269 seconds
2 gems installed
hazink1-ml1:~ hazink1$ rails help
Usage:
  rails new APP_PATH [options]

Options:
  -r, [--ruby=PATH]          # Path to the Ruby binary of your choice
                             # Default: /Users/hazink1/.rbenv/versions/2.0.0-p247/bin/ruby
  -m, [--template=TEMPLATE]  # Path to some application template (can be a filesystem path
                             # or URL)
  [--skip-gemfile], [--no-skip-gemfile]  # Don't create a Gemfile
  -B, [--skip-bundle], [--no-skip-bundle]  # Don't run bundle install
  -G, [--skip-git], [--no-skip-git]       # Skip .gitignore file
```

# MVC - Model View Controller



- Invented in 1979 by Trygve Reenskaug
- Well-established software pattern used by many web and desktop frameworks
- **Model** - represents the data the application is working with (and possibly business logic)
- **View** – (visual) representation of that data
- **Controller** - orchestrates interaction between the model and the view

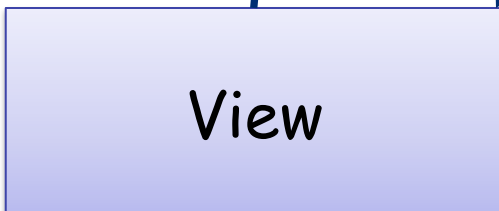
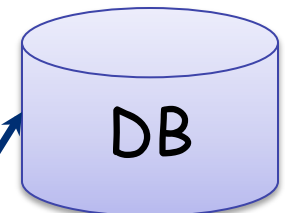
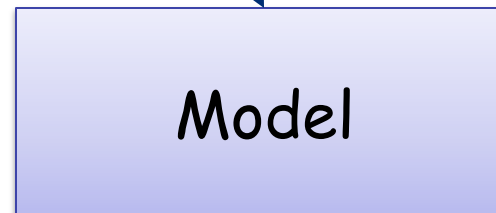
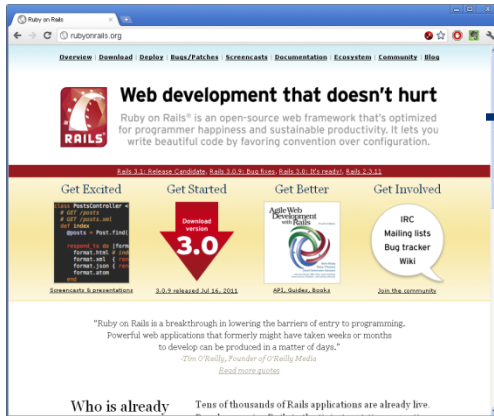


# MVC Cycle – Web

- Controller receives web request (from somewhere) and communicates with the model
- Model communicates with DB (if needed) to get the necessary data
- The data is passed to the View
- The View renders the data

# MVC Cycle

1. Browser sends request
2. Controller Interacts with model
3. Controller invokes view
4. View renders next browser screen



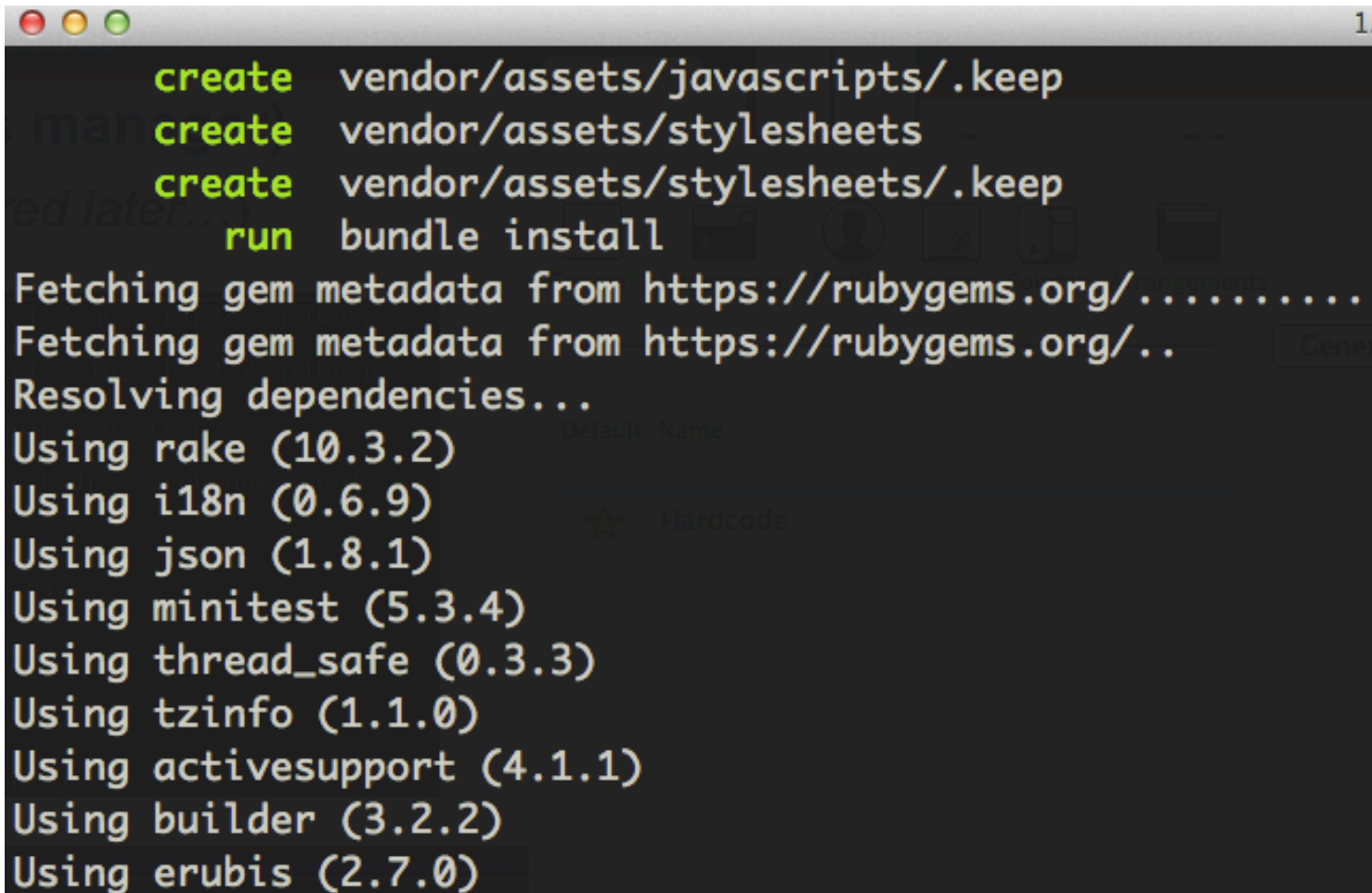
# Creating first app

```
hazink1-ml1:~ hazink1$ rails new my_first_app
create
create  README.rdoc
create  Rakefile
create  config.ru
create  .gitignore
create  Gemfile
create  app
create  app/assets/javascripts/application.js
create  app/assets/stylesheets/application.css
create  app/controllers/application_controller.rb
create  app/helpers/application_helper.rb
create  app/views/layouts/application.html.erb
create  app/assets/images/.keep
create  app/mailers/.keep
create  app/models/.keep
create  app/controllers/concerns/.keep
create  app/models/concerns/.keep
create  bin
create  bin/bundle
create  bin/rails
create  bin/rake
create  config
```

rails new appname  
(rails new -h for more options)

# bundler (gems manager)

(...*Bundler covered later...*)

A terminal window with a dark background and light-colored text. The window has a title bar with three colored buttons (red, yellow, green) on the left and a small number '1.' on the right. The text inside the terminal shows a series of commands and their outputs. The commands are: 'create vendor/assets/javascripts/.keep', 'create vendor/assets/stylesheets', 'create vendor/assets/stylesheets/.keep', and 'run bundle install'. The output shows the process of fetching gem metadata from https://rubygems.org/ and resolving dependencies. The list of gems and their versions is: rake (10.3.2), i18n (0.6.9), json (1.8.1), minitest (5.3.4), thread\_safe (0.3.3), tzinfo (1.1.0), activesupport (4.1.1), builder (3.2.2), and erubis (2.7.0).

```
create vendor/assets/javascripts/.keep
create vendor/assets/stylesheets
create vendor/assets/stylesheets/.keep
run bundle install
Fetching gem metadata from https://rubygems.org/.....
Fetching gem metadata from https://rubygems.org/..
Resolving dependencies...
Using rake (10.3.2)
Using i18n (0.6.9)
Using json (1.8.1)
Using minitest (5.3.4)
Using thread_safe (0.3.3)
Using tzinfo (1.1.0)
Using activesupport (4.1.1)
Using builder (3.2.2)
Using erubis (2.7.0)
```

# Version control your Rails app!

- Rails automatically generated `.gitignore`
- `$cd my_first_app` 
- `$git init`
- `$git add .`
- `$git commit -m "Initial commit"`
- But you knew that already...

Git repo should be INSIDE

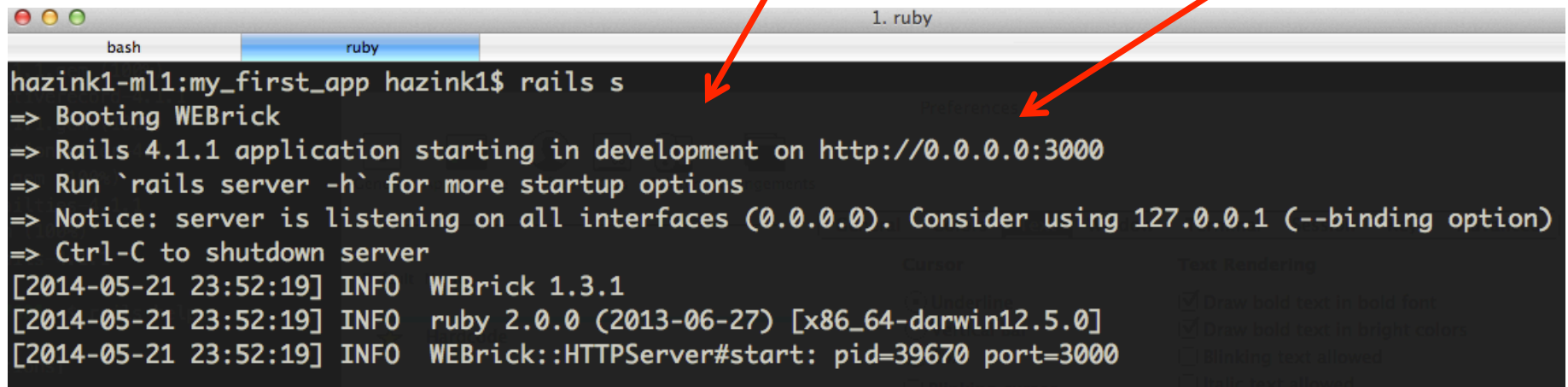
# Running the app

- Now you have `my_first_app` directory with auto-generated structure/code
- Rails also provides a built-in server
- Time to run our app!
  - (Open up another window/tab
  - Go into `my_first_app` directory)
  - Run `$rails server` (or `$rails s`)

# Running the app (Continued)

Development  
environment

localhost on port  
3000



A terminal window titled '1. ruby' with tabs for 'bash' and 'ruby'. The 'ruby' tab is active. The terminal output shows the command 'rails s' being executed, which boots WEBrick and starts the Rails 4.1.1 application in development mode on http://0.0.0.0:3000. The output also includes system logs for WEBrick 1.3.1 and Ruby 2.0.0. Two red arrows point from the 'Development environment' and 'localhost on port 3000' boxes to the corresponding parts of the terminal output.

```
hazink1-ml1:my_first_app hazink1$ rails s
=> Booting WEBrick
=> Rails 4.1.1 application starting in development on http://0.0.0.0:3000
=> Run `rails server -h` for more startup options
=> Notice: server is listening on all interfaces (0.0.0.0). Consider using 127.0.0.1 (--binding option)
=> Ctrl-C to shutdown server
[2014-05-21 23:52:19] INFO WEBrick 1.3.1
[2014-05-21 23:52:19] INFO ruby 2.0.0 (2013-06-27) [x86_64-darwin12.5.0]
[2014-05-21 23:52:19] INFO WEBrick::HTTPServer#start: pid=39670 port=3000
```