Rails Training

Roadmap

We will divide our training process in three steps

Step 1

Learn Ruby On Rails - Discussions - Practical Implementation - 3 weeks

Step 2

Demo Project - Commit Reviews - Final Review & Evaluation - 2 weeks

Step 3

Pair programming with a senior developer on a live project - Navigation & Driving - 1 week

Orientation Day

1. System Setup + Ruby on Rails Installation with RVM + Git Setup
   - RVM + Ruby(Install Ruby with RVM) +Rails
     - http://blog.sudobits.com/2012/05/02/how-to-install-ruby-on-rails-in-ubuntu-12-04-lts/
     - http://rvm.io/rvm/install
2. Git Installation
   - http://git-scm.com/book/en/v2/Getting-Started-Installing-Git
3. Install Mysql
   - https://gorails.com/setup/ubuntu/14.10#mysql
4. Install PostgreSQL
   - https://www.digitalocean.com/community/tutorials/how-to-install-and-use-postgresql-on-ubuntu-16-04

Learn Ruby On Rails

We'll have discussions on each Wednesday and Friday.
We'll assume that you will be learning the concepts by practical implementation yourself.
Google and https://guides.rubyonrails.org are your best friends for the next few weeks.

Note: We will use Rails 5 for our training process.

Week 1 - Day 1

1. Learn Ruby on Rails framework – go through the page
   1. http://guides.rubyonrails.org/getting_started.html
   2. https://www.youtube.com/watch?v=2gUbteh54RM&list=PL23ZvcdS3XPKnwg3lMv-JGNCn08kB0wsA
2. Don't try to remember everything just go along. By the end you will create your first ROR application.
3. Go through the new created project directory and feel how ROR works.
4. What are Gems? Explore Gemfile and Gemfile.lock files in project
   1. http://railscasts.com/episodes/201-bundler-revised

Week 1 - Day 2

1. Learn About MVC – How ROR implements MVC?
2. https://www.youtube.com/watch?v=zppMfm4fuxM&list=PL23ZvcdS3XPKnwg3lMv-JGNCn08kB0wsA&index=2
3. Learn about general Rails naming conventions (controller names, Model names, variable names).
   1. https://rubymonk.com/learning/books/1-ruby-primer/
   2. http://www.tutorialspoint.com/ruby/
   3. http://www.compileonline.com/execute_ruby_online.php
   4. https://www.ruby-lang.org/en/documentation/quickstart/
   5. https://www.youtube.com/watch?v=sAi1r8tzzS4&list=PL23ZvcdS3XPKnwg3lMv-JGNCn08kB0wsA&index=3
4. Learn about the Directory Structure for Rails
5. https://www.youtube.com/watch?v=fP64Wvz13AM&list=PL23ZvcdS3XPKnwg3lMv-JGNCn08kB0wsA&index=4
6. Explore controllers (Action definition)
   1. http://guides.rubyonrails.org/action_controller_overview.html

Week 1 - Day 3

1. Explore basic routes - Routes mapping to controller actions
    1. https://www.youtube.com/watch?v=pfBxS-AgyQY&list=PL23ZvcdS3XPKnwg3lMv-JGNCn08kB0wsA&index=6
    2. https://www.youtube.com/watch?v=-GQmC-8k09c
    3. http://railscasts.com/episodes/224-controllers-in-rails-3?view=asciicast
    4. http://railscasts.com/episodes/203-routing-in-rails-3
2. More Help
    1. https://www.youtube.com/watch?v=IYaYxxBTbDg
    2. https://www.youtube.com/watch?v=zUeHUoc3jfg
    3. https://www.youtube.com/watch?v=unq1yubL6lQ
    4. https://www.youtube.com/watch?v=iH3TMiRi7as
    5. https://www.youtube.com/watch?v=wdXgDwk6UO8

Week 1 - Day 4

1. Restful rails routes
    1. http://guides.rubyonrails.org/routing.html
2. Explore views
3. Learn about partials
4. Use of helpers in views

Week 1 - Day 5

1. Models
2. Model callbacks
3. Activerecord Validations

Help:

http://guides.rubyonrails.org/active_record_validations.html
http://railscasts.com/episodes/219-active-model
http://railscasts.com/episodes/211-validations-in-rails-3
http://api.rubyonrails.org/classes/ActiveRecord/Callbacks.html
https://www.youtube.com/watch?v=azH9IFUvjb0

Week 2 - Day 1

1. Activerecord Associations
2. Activerecord Associations (Advanced)
    1. http://guides.rubyonrails.org/association_basics.html
    2. http://railscasts.com/episodes/154-polymorphic-association
3. More Help
    1. http://api.rubyonrails.org/classes/ActiveRecord/Associations/ClassMethods.html
    2. http://railscasts.com/episodes/47-two-many-to-many
    3. http://railscasts.com/episodes/3-find-through-association
    4. http://railscasts.com/episodes/163-self-referential-association

Week 2 - Day 2

1. ActiveRecord Queries
2. Query conditions
3. Find by SQL, Joins, Groups, Order
    1. http://guides.rubyonrails.org/active_record_querying.html
    More help
    1. http://railscasts.com/episodes/202-active-record-queries-in-rails-3
    2. http://asciicasts.com/episodes/215-advanced-queries-in-rails-3

Week 2 - Day 3

1. Advance routes Nested routes
    1. http://guides.rubyonrails.org/routing.html#nested-resources
2. Migrations
    1. http://api.rubyonrails.org/classes/ActiveRecord/Migration.html
3. Asset Pipeline
    1. http://railscasts.com/episodes/279-understanding-the-asset-pipeline
    2. http://guides.rubyonrails.org/asset_pipeline.html

Week 2 - Day 4

1. Scaffolding
2. Configurations
3. Directory Structure

Week 2 - Day 5

1. Learn about usage of Git.
2. Explore different Git commands and their usage.
3. Practice Git and previous learned concepts about ROR
4. Create a github account, create a dummy repository and play with it if possible.

Week 3 - Day 1

1. Practice following tasks
   1. Generating Models
   2. Generating Controllers
   3. Generating Migrations
   4. Rails Scaffolding
   5. Data Seeding
   6. Rake Tasks (e.g rake db:create, rake db:migrate, rake db:seed)
   7. Gems (Try to implement devise gem)

Week 3 - Day 2

1. Implement Bootstrap and Javascript/Coffeescript
   1. http://getbootstrap.com/
   2. http://www.w3schools.com/bootstrap/
   3. https://learn.jquery.com/
   4. http://railscasts.com/episodes/390-turbolinks

Week 3 - Day 3 to Day 5

1. Revise all concepts regarding Rails.
2. Add bootstrap gem and do some working on CSS and JS.
3. Fun

List of modules to focus on

1 - Models

- ActiveRecord Basics
http://guides.rubyonrails.org/active_record_basics.html

- Rails Database Migrations
 http://api.rubyonrails.org/classes/ActiveRecord/Migration.html
http://guides.rubyonrails.org/migrations.html

- ActiveRecord Validations
http://guides.rubyonrails.org/active_record_validations.html
http://railscasts.com/episodes/211-validations-in-rails-3

- ActiveRecord Callbacks
http://guides.rubyonrails.org/active_record_callbacks.html
http://api.rubyonrails.org/classes/ActiveRecord/Callbacks.html

- ActiveRecord Associations
http://railscasts.com/episodes/154-polymorphic-association-revised
http://railscasts.com/episodes/394-sti-and-polymorphic-associations
http://railscasts.com/episodes/163-self-referential-association
http://railscasts.com/episodes/47-two-many-to-many
http://railscasts.com/episodes/3-find-through-association
 http://api.rubyonrails.org/classes/ActiveRecord/Associations/ClassMethods.html

- ActiveRecord Query Interface
 http://railscasts.com/episodes/202-active-record-queries-in-rails-3
 http://railscasts.com/episodes/215-advanced-queries-in-rails-3

http://guides.rubyonrails.org/active_record_querying.html

2 - Controllers

http://railscasts.com/episodes/224-controllers-in-rails-3
http://railscasts.com/episodes/395-action-controller-walkthrough
- Rails Routing
  http://railscasts.com/episodes/203-routing-in-rails-3

3 - Views

- Layouts and Rendering in Rails
  http://guides.rubyonrails.org/layouts_and_rendering.html

- Action View Form Helpers
  http://guides.rubyonrails.org/form_helpers.html

4 - The Asset Pipeline
- http://guides.rubyonrails.org/v4.1/asset_pipeline.html
- http://railscasts.com/episodes/279-understanding-the-asset-pipeline

5 - Action Mailer
- http://railscasts.com/episodes/206-action-mailer-in-rails-3
- http://guides.rubyonrails.org/action_mailer_basics.html

6 - Devise
- http://railscasts.com/episodes/209-introducing-devise
- http://railscasts.com/episodes/210-customizing-devise

7 - Pagination with Kaminari
- http://railscasts.com/episodes/254-pagination-with-kaminari

8 - Rails Bundler

- http://railscasts.com/episodes/201-bundler

9 - Sass Basics

- http://railscasts.com/episodes/268-sass-basics

10 - CoffeeScript Basics

- http://railscasts.com/episodes/267-coffeescript-basics

Rails Architecture

1. MVC Model View Controller (Explain each one in detail and explore all features for each one)
2. ORM (object relational mapping)
3. ERB (Embedded Ruby)
4. Application Walk Through (Explore files in rails 5 project directory and purpose)
5. Explore Gemfile and Gemfile.lock and its purpose
6. Routes (Explore routes.rb file and grasp all related concepts e.g nested routes, Restful rails, Route types, namespaces)
7. Restful Rails
8. Assets precompile (Explore purpose of this feature and benefits)
9. Naming Conventions (controller, model and views names)
10. Rails 5 configuration for different environments
11. Database and Migrations (Explore how to create database and tables in rails 5 project)
12. Activerecord associations

Help

1. http://adrianmejia.com/blog/2011/08/11/ruby-on-rails-architectural-design/
2. http://api.rubyonrails.org/classes/ActiveRecord/Migration.html
3. http://railscasts.com/episodes/279-understanding-the-asset-pipeline
4. http://guides.rubyonrails.org/action_controller_overview.html

Rails Tools

1. Rails Generators
2. Generating Models

3. Generating Controllers
4. Generating Migrations
5. Rails Scaffolding
6. Data Seeding
7. Rake Tasks (e.g rake db:create, rake db:migrate, rake db:seed)
8. Rails Bundler
9. Libraries
10. Gems

Help
1. http://railscasts.com/episodes/216-generators-in-rails-3?view=asciicast
2. http://railscasts.com/episodes/201-bundler
3. http://railscasts.com/episodes/384-exploring-rubygems
4. http://railscasts.com/episodes/66-custom-rake-tasks

Rails Controllers and Views
1. Controller Filters
2. Views
3. partials
4. Controller request handling concept
5. Routes mapping to controller actions
6. Nested Routes
7. Use of helpers in views
8. Layouts and Rendering in Rails

Help
1. https://www.youtube.com/watch?v=pfBxS-AgyQY&list=PL23ZvcdS3XPKnwg3lM v-JGNCn08kB0wsA&index=6
2. http://railscasts.com/episodes/231-routing-walkthrough?view=asciicast
3. http://railscasts.com/episodes/139-nested-resources

Rails Models and ActiveRecord
1. Model callbacks
2. ActiveRecord Basics
3. ActiveRecord Validations

4. ActiveRecord Associations
5. ActiveRecord Query
6. Retrieving Data
7. Query conditions
8. Find by SQL, Joins, Groups, Order

Help
1. http://railscasts.com/episodes/219-active-model
2. http://railscasts.com/episodes/211-validations-in-rails-3
3. http://api.rubyonrails.org/classes/ActiveRecord/Callbacks.html
4. http://railscasts.com/episodes/202-active-record-queries-in-rails-3
5. http://asciicasts.com/episodes/215-advanced-queries-in-rails-3
6. http://guides.rubyonrails.org/association_basics.html
7. http://railscasts.com/episodes/154-polymorphic-association

Code Management
1. Version Control
2. Git and Rails
3. Feature of Git
4. Usage of git in practice project
5. Discussion of Git with mentors.

Help
1. http://railscasts.com/episodes/96-git-on-rails
2. https://confluence.atlassian.com/display/STASH/Basic+Git+commands

The Ruby Programming Language
1. Ruby Background
2. Classes and Inheritance
3. Objects and Variables
4. Strings, Regular Expressions and Symbols
5. Expressions and Control Structures
6. Collections and Blocks

Help

1. http://railscasts.com/episodes/230-inherited-resources
2. http://railscasts.com/episodes/394-sti-and-polymorphic-associations?view=comments
3. http://phrogz.net/programmingruby/tut_classes.html
4. http://ruby-doc.org/core-2.1.1/Regexp.html

Presentation/User Interface
1. HTML – Basic Syntax
2. HTML – Document Structure
3. HTML – Forms
4. Dynamic Content
5. Cascading Style Sheets (CSS)
6. JavaScript and jQuery
7. Ajax

First Evaluation

Your first evaluation will be conducted on your progress during initial 3 weeks of training and you will receive feedback from your mentors based upon following criteria;

Evaluation Criteria

Productivity
- Given tasks completed by accepting challenges
- Code quality improvement (lower factor in this phase of training)

Responsibility
- Taking ownership of the work
- Reliability & dependability under pressure

Time management
- Whether given tasks are divided into their ideal time span

Innovation
- New ideas
- Creative approach towards a problem

Learning
- Learning new things everyday
- Sharing your knowledge with others

Work Ethics
- Proper office discipline is observed while working under workload

Upcoming Goal - Creating Your First Rails Application

1. A demo application will be assigned to you.
2. Requirements will be provided by your Project Manager.
3. Your Project Manager will act as client for you.
4. You have to clarify all the requirements from your Project Manager.
5. You have to follow the deadline for giving requirements.
6. You are supposed to implement all concepts in this application according to best of you knowledge
7. Your code will be reviewed frequently by your Project Manager.
8. When you are done with this demo application then you will have a discussion with your Project Manager about this application.

Best of Luck!