Ruby on Rails I

CSEN 704/DMET 706; Lab 4

Plan
Updated

Week	Date	Material	Project
01	06/09	Lectures Week	No Labs
02	13/09	HTML, CSS, & JS	Description
03	20/09	PHP & MySQL	Proposals Submission + Teams
04	27/09	Introduction to Ruby	Mini-Project Submission
05	04/10	Eid Vacation	No Labs
06	11/10	Ruby on Rails I	
07	18/10	Ruby on Rails II	
	25/10	Midterm Exams	

Plan
Updated

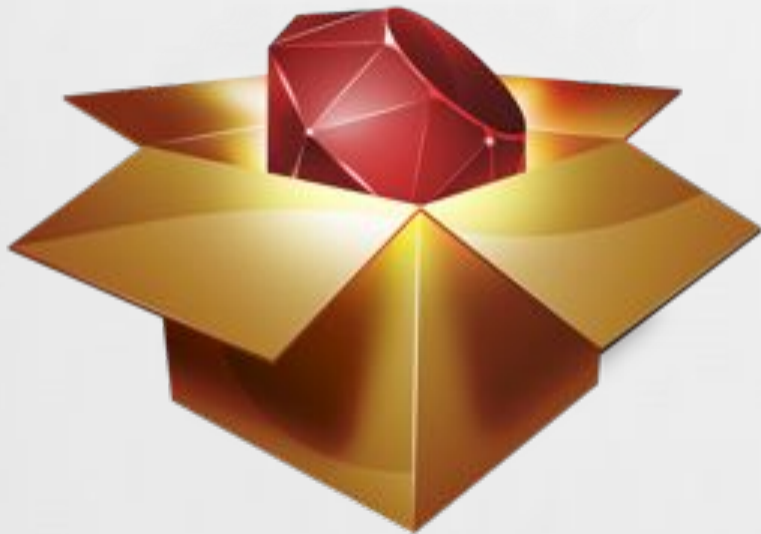| Week	Date	Material	Project
10	08/11	Android I	Milestone 1 Submission
11	15/11	Android II	
12	22/11	API	Milestone 2 Submission
13	29/11	Integration + UI/UX	
14	06/12	Entrepreneurship	Milestone 3 Submission
	11/12	Last Teaching Day	
15	13/12	Revision Week	Pitching Day
	20/12	Final Exams	

Ruby on Rails

- **Ruby on Rails** is an open source web application framework written in Ruby.

- **Ruby on Rails** is a full-stack framework that emphasizes the use of well-known software engineering patterns and paradigms, including CoC, DRY, and MVC.

- http://guides.rubyonrails.org

RubyGems

RubyGems is a package manager for the Ruby programming language that provides a standard format for distributing Ruby programs and libraries in a self-contained format called a "gem".
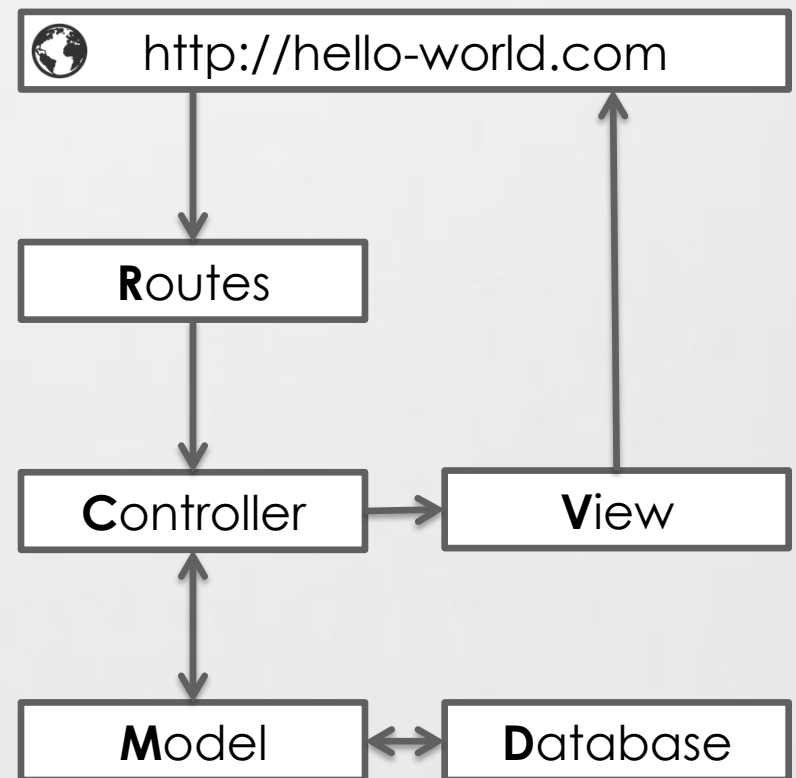
http://rubygems.org

WIKIPEDIA
The Free Encyclopedia

Rails; MVC…RD

- **M**odels

- **V**iews

- **C**ontrollers

- **R**outes

- **D**atabase Migrations

rails

```
$ rails new
$ rails generate
$ rails destroy
$ rails server
$ rails console

$ rake

$ bundle
```

```
.                       |
|____app                |____public
| |____assets           |
| |____controllers      |____vendor
| |____models           | |____assets
| |____views            |
|                       |____Gemfile
|____config
| |____database.yml
| |____routes.rb
|
|____db
| |____migrate
|
|____lib
| |____assets
| |____tasks
```

Rails; Routes

- RESTful
  - Client–server
  - Stateless
  - Cacheable
  - Uniform interface
    - CRUD
    - Nesting

```
$ rake routes
```

```
GET        /users
GET        /users/1

POST       /users

PUT        /users/1
PATCH      /users/1

DELETE     /users/1
```

Rails; Routes
config/routes.rb

```ruby
Rails.application.routes.draw do

  get    'users'     => 'users#index'
  get    'users/:id' => 'users#show'

  post   'users'     => 'users#create'

  put    'users/:id' => 'users#update'
  patch  'users/:id' => 'users#update'

  delete 'users/:id' => 'users#destroy'

end
```

Rails; Routes
config/routes.rb

```ruby
Rails.application.routes.draw do

  resources :users



end
```

Rails; Routes
config/routes.rb

```ruby
Rails.application.routes.draw do

  resources :users do

    collection { }
    member     { }

    resources :tasks

  end


end
```

Rails; Controllers
app/controllers

```ruby
class UsersController < ApplicationController

  def index
  end

  def show
  end



  def create
  end



  def update
  end

  def destroy
  end

end
```

Rails; Controllers
app/controllers

```
class UsersController < ApplicationController

  def index
  end

  def show
  end

  def new
  end

  def create
  end

  def edit
  end

  def update
  end

  def destroy
  end

end
```

Rails; Models
app/models

```ruby
class User < ActiveRecord::Base

end
```

```ruby
u = User.new          # => #<User id: nil ...>
u = User.find(1)      # => #<User id: 1 ...>
u = User.where(...)   # => [#<User ...>, #<User ...>]
u = User.all          # => [#<User ...>, #<User ...>]

u.save
u.update
u.destroy
```

Rails; Database Migrations
db/migrate

```
$ rails g model user name born_on:date
```

```ruby
class CreateUsers < ActiveRecord::Migration
  def change
    create_table :users do |t|
      t.string :name
      t.date   :born_on

      t.timestamps
    end
  end
end
```

```
$ rake db:migrate
```

Rails; Controllers
app/controllers

```
class UsersController < ApplicationController

  def index
  end


  def show
  end


  def create
  end


  ...

  ...

  ...


end
```

Rails; Controllers
app/controllers

```ruby
class UsersController < ApplicationController

  def index  # app/views/users/index.html.erb
    @users = User.all
  end

  def show   # app/views/users/show.html.erb
    @user = User.find(params[:id])
  end

  def create # redirect_to @user
    @user = User.create(user_params)
  end

  ...

protected

  def user_params
    params.require(:user).permit(:name, :born_on)
  end

end
```

Rails; Views
app/views

```
# app/views/users/index.html.erb
<h1>Users</h1>
<ul>
  <% @users.each do |user| %>
    <li>
      <%= user.name %>
    </li>
  <% end %>
</ul>
```

```
# http://localhost:3000/users
```
Users
- Ramy
- Youmna
- ...

```
# app/views/users/show.html.erb
<h1>User #<%= @user.id %></h1>
<dl>
  <dt>Name:</dt>
  <dd><%= @user.name %></dd>
</dl>
```

```
# http://localhost:3000/users/1
```
User #1

Name:
   Ramy

References

   ও   BerkeleyX's "CS169.1x Engineering Software as a Service" online course. https://courses.edx.org/courses/BerkeleyX/CS_CS169.1x/1T2014/info.

Thank you

Announcements:

o   Read more about Ruby on Rails.