**RoR Week 2 (6/17 & 6/19)**

**The Project App**

**------------------------------------------------------------TUESDAY 6/17-----------------------------------------------------------**

**Start a new project called ewb\_projects**

*>>rails new ewb\_projects*

**Generate a welcome controller**

*>>rails generate controller welcome index*

**Generate a products controller with the 7 RESTful functions & explore routing**

*>>rails generate controller products index create destroy edit update new show*

**Delete the products controller**

*>>rails destroy controller products index create destroy edit update new show*

**Create a “Project” model**

*>>rails generate model Project*

**Take a look at the migration file that was just created and add a title or type string and description of type text. OR you can use the migration command**

*>>rails generate migration AddTitleToProject title:string*

*>>rails generate migration AddDescriptionToProject description:text*

*The above two lines will generate two new migration files*

*Or you can modify the migration file directly with what is below and a new migration file won’t be created*

*t.string :title*

*t.text :description*

*\*\*Note: in order for your migration files to be executed and added to the database you must run your migration (the command is rake db:migrate)*

**Now that we created the model, we can play with it in console. This is how we can see what is in our database**

*>>rails console*

**Now you are in the ruby console inside of Rails. You can tell because of the irb>> prompt.**

**So now lets Create a few new projects and add them to our database.**

*Irb>>Project.all*

*Irb>>a = Project.new*

*Irb>>a.title = “Dominican Republic Sustainable Infrastructure”*

*Irb>>a.description = “The international project team is traveling to the DR this July to ….tbc”*

*Irb>>a.save*

*\*\*don’t forget to “a.save”! The object isn’t pushed to the database until you do so!*

**Exit the console**

*>>exit*

**Now we are back in the Rails console and we have the proejcts we just made in the database. Lets get them rendered on our website! This means we need to create controllers and views for what we want to display**

**Create the controller with no default actions (we will add the action and view associated with it manually this time so you know how. But know that rails will do all this for you if you say “rails g controller projects index”)**

*>>rails g controller projects*

**Modify your routes file such that the projects resource is there now**

*resources :projects*

**Add an index action to your controller such that you can access your model with a variable from your view**

*def index*

*@projects = Project.all*

*end*

**Now go to your view and print the project titles in your database**

*<p>This is a list of EWB Projects</p>*

*<ul>*

*<% @projects.each do |proj| %>*

*<li><%= link\_to proj.title, project\_path(proj)%></li>*

*<% end %>*

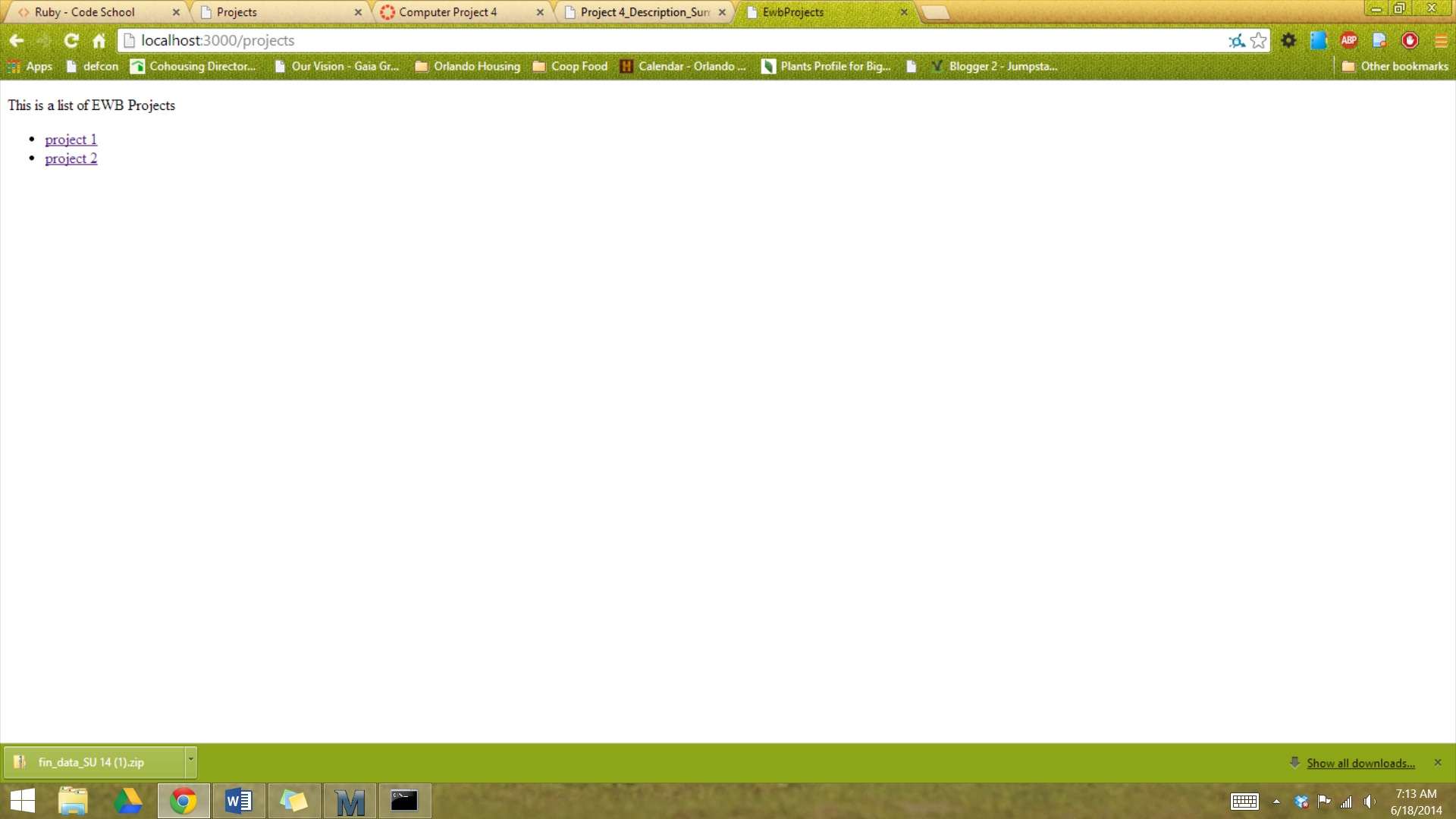
*</ul>*

*\*\*Whats going on here? @projects is the variable that is holding all the projects because in the controller we set it equal to “Project.all”. So just like we did in the ruby console we can access the projects. So we write a loop to loop through all the projects and create a link to the project with the project title as the clickable link.*

*“project” is the prefix that shows up when we rake routes and we append path to it and feed it the proj*

*“link\_to” is a rails helper function for linking to things. Look up its documentation.*

**Now start your server and you should see a list of projects on the index page of projects!**



**THIS IS WHERE WE STOPPED TUESDAY. ERASE YOUR PROJECT AND REDO IT! :D You need to be fast at procedurally creating everything above and understand what it all means.**

**You should now understand:**

* **How to generate and destroy controllers with empty actions**
* **What the 7 RESTful actions are**
* **What “resources :projects” does in our routes file**
* **How to create and destroy a model**
* **How to add columns to your database by generating a new migration or by editing the migration file directly**
* **How to write a loop in ruby**
* **How to access what is in your database through your view via @variable that you assigned in your controller**

**----------------------------------------------------------THURSDAY 6/19----------------------------------------------------------**

**Brief review. Answer questions. Recreate the project quickly.**

**Starting where we left off from the project above. Add a show action to your controller such that you can access your model with a variable from your view**

*def show*

*@project = Project.find(params[:id])*

*end*

*\*\*What is this?*

*@project is how we will access the project in our view*

*Project.find() is a function to get a specific project from our database*

*params[] returns a hash of the request parameters. Here we request the project ID which gives us access to the project with id = <whatever ID is passed from the view>*

**Now we should have access to that specific project in our show view. Go to your view and print the project titles in your database like below**

*<p>This page shows the project in more detail</p>*

*<p><%= @project.description %></p>*

*<%= link\_to ‘<<Back to all projects’, projects\_path%>*

Extra Challenges for practice if you want

1. Edit the routes file so that the root path points to your list of projects
2. Stylize your page

**We will now allow users to create, edit and destroy projects and later allow only privileged users to create, edit and destroy projects but all users to view them.**

**Following RESTful conventions we will write a form in the view associated with the projects#new action. This uses the form helper form\_for**

*<%= form\_for(@project) do |p| %>*

*<ul> <% @project.errors.full\_messages.each do |error| %>*

*<li><%= error %></li>*

*<% end %>*

*</ul>*

*<p>*

*<%= p.label :title %><br />*

*<%= p.text\_field :title %>*

*</p>*

*<p>*

*<%= p.label :description %><br />*

*<%= p.text\_area :description %>*

*</p>*

*<p>*

*<%= p.submit %>*

*</p>*

*<% end %>*

**Now we have to make this @project variable accessible to the show view via our controller just like we created a new project in the irb>> console**

*@project = Project.new*

**We also need the create action to process the “new” form. Check out the params available using “fail”**

*def create*

*fail*

*end*

**Now change the create function to save what the user entered**

*def create*

*@project = Project.new*

*@project.title = params[:project][:title]*

*@project.description = params[:project][:description]*

*@project.save*

*redirect\_to project\_path(@project)*

*end*

**Realistically we don’t want to blindly pass params like this into our database so we use what are called “Strong Parameters” via “require” and “permit”. Permit returns the hash while require returns the hash.**

**Your projects helper should look like this:**

*def project\_params*

*params.require(:project).permit(:title, :description)*

*end*

**Your projects controller should now look like this:**

*def create*

*@project = Project.new(project\_params)*

*@project.save*

*redirect\_to project\_path(@project)*

*end*

*PS—don’t forget to include the projects helper in your controller*

**Now we want people to be able to edit a project so we have to add an edit view.**

*<h1>Edit an Event</h1>*

*<%= render partial: 'form' %>*

**When the user submits the edit form it goes to an action in the controller called update. Then lets add to our update action in the controller. Add:**

*@project = Project.find(params[:id])*

*@project.update(project\_params)*

*redirect\_to project\_path(@project)*

**Now you should understand:**

* **How to create a form using rails form\_helper**
* **How to use strong parameters for security**
* **How to use “redirect\_to” in rails**
* **Be able to access any part of your models in your views.**

**REMOVE THE ENTIRE PROJECT AND DO IT AGAIN….@ least twice. You should be fast at doing these simple things so you can move to more complex things and not have to think about to hard about these things.**

**------------------------------------------------------------TUESDAY 6/24-----------------------------------------------------------**

**Last time we added index, show, new, create, edit, update.**

**Questions from last time:**

1. **When do you use single vs double quotes?**
2. **Do you need to create two objects when you pass new to create or edit to update?**
   1. **No.**
3. **What is update for? Why is it needed?**
   1. **Similar to New🡪Create, Edit🡪Update**
4. **How can you change “/project/1/bla” to “/project/myProjectName/bla”?**
   1. **Friendly ID**

**Review. Answer questions.**

**Today, we will add the destroy action and then get into using a gem called paperclip for adding an image to our project.**

**If we add this link to the show view, it will do to the destroy action in our controller.**

*>>* *<%=link\_to "Delete Project", project\_path(@project), method: :delete, data: {confirm: "Really delete the project?"}%></br>*

**Then we have to actually tell the controller destroy method how to delete it.**

*def destroy*

*@project = Project.find(params[:id])*

*@project.destroy*

*redirect\_to projects\_path*

*end*

**Test your modifications.**

**STOP: At this point all of your 7 Restful actions should be working.**

**🡪 What is RubyGems?**

**Just another package manager (like apt-get, yum, etc)**

**>>gem install <gemName>**

[**.gemspec files**](http://jeffkreeftmeijer.com/2010/be-awesome-write-your-gemspec-yourself/) **as YAML files which we’ve seen**

**“Yes Another Markup Language” … “YAML Aint Markup Language”**

**The gems we’ll utilize will be:**

[**paperclip**](https://rubygems.org/gems/paperclip)**—a simple file attachment library**

[**sorcery**](https://rubygems.org/gems/sorcery)**—a simple authentication library**

[**cancan**](https://rubygems.org/gems/cancan)**—adds authorization via “Ability class”**

[**devise**](https://rubygems.org/gems/devise)**—more sophisticated authentication (optional)**

[**active merchant**](https://rubygems.org/gems/activemerchant)**—for making payments, donations, etc**

**The Paperclip Gem**

**Add the ‘paperclip’ gem**

*>>gem install paperclip*

**Check and make sure its there**

*>>gem list paperclip*

**Now add it to your Gemfile and run bundler**

*#Paperclip Gem for file attachments*

*gem ‘ paperclip’*

*>>bundle install*

*>>bundle show paperclip*

**Now we have to add the proper fields in our database for the attachment**

*>>rails g migration add\_paperclip\_to\_project*

**Now edit the migration file you just created and run your migration**

*def change*

*add\_column :project, :image\_file\_name, :string*

*add\_column :project, :image\_content\_type, :string*

*add\_column :project, :image\_file\_size, :integer*

*add\_column :project, :image\_updated\_at, :datetime*

*end*

**\*Alternatively how could you have generated this migration shorthand?**

*>>rails g migration add\_paperclip\_to\_project image\_file\_name:string image\_content\_type:string etc etc*

**Now we have to tell our model it has an attachment**

*has\_attached\_file :image*

*validates\_attachment\_content\_type :image, :content\_type => [“image/jpeg”,”image/png”,”image/jpg”]*

*What is this?*

*<has\_attached\_file> is part of the paperclip library and looks for attachments starting with ‘image\_’*

*<validates\_content\_type> is required in 4.0 to validate the attachment*

**How do we have to edit our helper file? We have to whitelist the image to come through. Add the :image to your params helper file**

*params.require(:project).permit(:bla, :bla, :bla, :image)*

**Add the image tag to your show view also**

*<p><%= image\_tag @project.image.url %></p>*

**What if we only want to show the image if there is an image attached to the project?**

*<% if @project.image\_file\_name != nil %>*

*<p><%= image\_tag @project.image.url %></p>*

*<% end %>*

*OR we could use*

*if @project.image.exists?*

*.*

*.*

*.*

*end*

**Also add it to your form**

*<p>*

*<%= p.label :image, "Attach an image" %><br />*

*<%= p.file\_field :image %>*

*</p>*

**\*\*Challenge: play with paperclip to control the size of the image (look up documentation)**

**Now you should understand:**

* **What gems are and how to use them in your project**
* **How to use paperclip gem to add an attachment**
* **How to add validations for content type**
* **How to use conditionals in your view**

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**The Sorcery Gem**

**Install it just like we did for paperclip and check to make sure it’s there.**

**Create**

*>>rails g sorcery:install*

**Add username column in the new migration file just generated.**

**Migrate your DB.**

**Rails generate a user’s scaffold:**

*>>rails g scaffold\_controller user username:string email:string password:password password\_confirmation:password*

**Add a validation to your user model**

*validates\_confirmation\_of :password, message: "passwords should match", if: :password*

**Add the users resource to your routes file and test the validation you just added to your model (ie. Enter different passwords)**

**Edit your layouts file to add flash and if logged in.**

*<h6>*

*<% if logged\_in? %>*

*<%= "Logged in as #{current\_user.email}" %>*

*<%= link\_to "(logout)", logout\_path %>*

*<% else %>*

*<%= link\_to "(login)", login\_path %>*

*<% end %>*

*</h6>*

**Now we need new, create and destroy to login.**

*>>rails g controller UserSessions*

*def new*

*end*

*def create*

*if login(params[:email], params[:password])*

*redirect\_back\_or\_to(projects\_path, message: 'Logged in successfully.')*

*else*

*flash.now.alert = "Login failed."*

*render action: :new*

*end*

*end*

*def destroy*

*logout*

*redirect\_to(:users, message: 'Logged out!')*

*end*

**Add this to your routes**

*resources :user\_sessions, only: [ :new, :create, :destroy ]*

*get 'login' => 'user\_sessions#new'*

*get 'logout' => 'user\_sessions#destroy'*

*\*\*Why do we create a separate sessions controller for our users with new, create, destroy actions?*

*\*\*So when do you create a new controller in general? When you think about putting non RESTful actions in an existing one, when you need a separate resource*

**Now we want to be able to restrict certain users to have access to certain pages right? Well, Rails gives us this handy thing called ‘before\_filter’. We can now ‘filter’ our users very easily.**

**For example, at the top of our projects controller if we only want the logged in user to be able to edit, destroy etc, then we can require login for all pages except index and show.**

*before\_filter :require\_login, except: [:index, :show]*

**Alternatively we can use “only” to show only edit, destroy, etc for users that are logged in.**

*before\_filter :require\_login, only: [:edit, :update, :destroy, :new, :create]*

*\*\*Try adding a custom filter with ‘except’ or ‘only’ keywords.*

*\*\*Test it (ie. Try accessing these actions when you are/aren’t logged in).*

**----------------------------------------------------------THURSDAY 6/26---------------------------------------------------------**

**Finish up with paperclip and sorcery.**

**Design a project from scratch—moving on Tuesday.**

**Project Ideas:**

**🡪create blog page**

**🡪articles**

**🡪personal site**

**🡪Recreate a basic project site from scratch then add events and a photo gallery.**

**------------------------------------------------------------TUESDAY 7/1-----------------------------------------------------------**

**Last time:**

* **Got all 7 RESTful actions working with two gems (paperclip and**
* **Questions:**
  + **Add stars to password**
  + **Add verifications to password entries, etc.**

**Today:**

* **Advanced routing and scope**
* **CanCan Gem**
* **Mailers**

**Advanced Routing**

***Creates a plural Provides all 7 RESTful actions for each controller***

resources :photos, :books, :videos

resource :geocoder

***Matches localhost:3000/profile to the users controller with show action***

match "profile" => "users#show"

**Types of Associations**

* belongs\_to
* has\_one
* has\_many
* has\_many :through
* has\_one :through
* has\_and\_belongs\_to\_many

**CanCan Gem**

**Mailers (confirmation emails, etc)**

**-----------------------------------------------------------THURSDAY 7/3-----------------------------------------------------------**

**Twitter Bootstrap Gem**

**Secure Payments with**

**------------------------------------------------------------TUESDAY 7/8-----------------------------------------------------------**

**Changing environments—development, deployment**

**-----------------------------------------------------------THURSDAY 7/10---------------------------------------------------------**

**NO CLASS!!!!**

**------------------------------------------------------------TUESDAY 7/15-----------------------------------------------------------**

**AWS and EC2**

**-----------------------------------------------------------THURSDAY 7/17---------------------------------------------------------**

**AWS and EC2**

**----------------------------------------------------SECURITY WEEK 7/22-24-----------------------------------------------------**

**Security Week—Brute forcing WEP demo, using NMAP, modern “hacking”**