

# **INFO 2310**

Topics in Web Programming  
Ruby on Rails

# Last week on INFO2310

- Added our first ActiveRecord relation
- Discussed the application.css file
- Used ActiveRecord callbacks and a conditional validator to add a password field to our User Model
- You wrote the User.authenticate function

# My Solution\*

```
def has_password?(raw_password)
  hashed_password == encrypt(raw_password)
end
```

```
def self.authenticate(email, plain_text_password)
  user = User.find_by_email(email)
  user && user.has_password?(plain_text_password) ? user : nil
end
```

```
# Ternary operator, as seen in PHP and Java
# (boolean ? value_if_true : value_if_false)
```

Also Professor Williamson's from the previous offering and Michael Hartl's from the online tutorial...

# Week 5

Signing in/out  
&& Customizations

Go ahead and login to Amazon and start your  
EC2 instances

# Hold the phone!!

You told us using a web framework would save us from rewriting components that are common to many websites...

So why are we writing a *login* system?

Most popular existing solution (from what I can tell):

\* <https://github.com/plataformatec/devise>

# Login to PuTTY

- open PuTTY
- On the left panel, navigate to Connection->SSH->Auth
  - Next to "Private key file for authentication:", click "Browse", and select the \*.ppk file you created on the previous step.
- Then, navigate to Connection->Data
  - For "Auto-login username", type "ec2-user"
- Navigate to "Session" (the very top)
  - Copy the "Public Domain Name" of your EC2 instance; you can see this on the instances page of the Amazon console, when an instance is selected
  - Paste it into the "Host Name (or IP address)" field
- Click "Open"

# Login to WinSCP

- Open WinSCP
  - Paste in your domain to "Host name", as you did in PuTTY
  - Type "ec2-user" for the "User name"
  - Click "..." to select your private key file
  - Click "Login"
- Set Notepad++ as the default editor.
  - Click Options->Preferences
  - Select "Editors" from the left tab
  - Click Add
  - Select "External Editor"
  - Find Notepad++ (C:\Program Files (x86)\Notepad++)
  - Click "Open", then "Okay"
  - Drag it to the top of the editor list

# Today's branch

Since we are working on a new feature today,  
let's start on a feature branch

git status

# should display nothing to commit

git checkout -b login

# checkout a new branch

git branch

# view branches



# Specs

We will spend today working through the **spec/requests/session\_spec.rb** file, so let's copy that over from lecture\_5.txt.

As we progress today you will get more and more of the specs in this file to pass.

With luck, by the end of today, all of them will be passing and you will have implemented a working login system!

# Remembering Logins

Now we have a function to checks a user's credentials

=> `User.authenticate`

What do we do with it?

We want a user to login, and then begin a session, which persists until they log out.

# Our Strategy

- Show users a login form
- When they submit the form
  - If their information is accurate, save their user\_id in a cookie.
  - Subsequent requests we will determine the authenticated user by looking up that user\_id in our database

# Let's be RESTful

While we won't actually be storing any session data in the database (we'll use cookies), we will model logins in a RESTful manner just the same.

We will think of logging in as *creating* a Session *resource*. Logging out is *destroying* that resource.

# Remember?

*config/routes.rb*

resources :users

HTTP Verb	Path	Action	used for
GET	/users	index	lists all the users
GET	/users/new	new	displays an HTML form for creating a new user
POST	/users	create	creates a new user
GET	/users/:id	show	display a specific user
GET	/users/:id/edit	edit	displays an HTML form for editing a user
PUT	/users/:id	update	updates a specific user
DELETE	/users/:id	destroy	delete a specific user

# We don't quite need all that

*config/routes.rb*

resources :sessions, only: [:new, :create, :destroy]

HTTP Verb	Path	Action	used for
GET	/sessions/new	new	displays an HTML form for creating a new session
POST	/sessions	create	creates a new session
DELETE	/sessions/:id	destroy	delete a specific user

Along with the mappings from URL to controller and function, this gives us some helper functions to access these URLs in other parts of our app.

new_session_path	=> "/sessions/new"
sessions_path	=> "/sessions"
session_path(id: 5)	=> "/sessions/5"

# And the controller

## **app/controllers/sessions\_controller.rb**

```
class SessionsController < ApplicationController
```

```
  def new  
  end
```

```
  def create  
  end
```

```
  def destroy  
  end
```

```
end
```

# Login Form Step 1

1. Create a new file at **app/views/sessions/new.html.erb**
  - a. You can use the template in `lecture_5.txt` to start
2. Change the "Logout" link in the header to be a "Login" link which points to your new login form. You can edit this in **app/views/layouts/\_header.html.erb**. After you do this, you should be able to click "Login" and view the file you just created.

Here's how you can run just the specs relevant to this task:

**bundle exec rspec spec/requests/session\_spec.rb -e "login form link should be displayed in the header"**

Once this is passing, you're ready to move on.



# A login form

the **form\_for** helper is used to produce the HTML for a form.

We've seen it before in

**app/views/users/\_form.html.erb**

**app/views/micro\_posts/\_form.html.erb**

**form\_for** produces the HTML for a web form. If you pass it an instance of an ActiveRecord class, as we did in the two partials above, it will infer the appropriate URL and action (POST/PUT) for the form.

However, unlike before, we don't have a Session ActiveRecord model. We can still use **form\_for**, we just have to pass it more information; specifically, the model the form is for, and the url it should submit to.

# form\_for

```
<%= form_for(:document, url: documents_path) do |f| %>
```

```
<div class="field">
```

```
<%= f.label :title %><br />
```

```
<%= f.text_field :title %>
```

```
</div>
```

```
<div class="field">
```

```
<%= f.label :content %><br />
```

```
<%= f.text_area :content %>
```

```
</div>
```

```
<div class="actions">
```

```
<%= f.submit "Create Document" %>
```

```
</div>
```

```
<% end %>
```

# Login Form Step 2

1. Fill in **app/views/sessions/new.html.erb** with the code needed to create an HTML form.
  - a. Set the resource and correct path
  - b. add a `text_field` for email
  - c. add a `password_field` for password
  - d. a button to "Login"
2. The form should POST to `"/sessions"`, but don't worry about it working yet. In fact, it's fine if it crashes when you submit it.

Here's how you can run just the specs relevant to this task:

```
bundle exec rspec spec/requests/session_spec.rb -e "login form elements"
```

Once this is passing, you're ready to move on.

# Flash Variables

Are great ways to display notification or error messages.

Rails persists them to the subsequent request and then deletes them.

# Here's one in action

```
def set_user_name_to_matt
  user = User.find_by_id(params[:id])

  if user && user.update_attributes(name: "matt")
    flash[:notice] = "Updated name to Matt"
    redirect_to user_path(user)
  else
    flash[:error] = "Unable to update name to Matt"
    redirect_to root_path
  end
end
```

# Adding flash variables to our layout

`app/views/layouts/application.html.erb`

```
<div class="container">
```

```
  <% flash.each do |key, value| %>
```

```
    <div class="alert alert-<%= key %>"><%= value %></div>
```

```
  <% end %>
```

```
  <%= yield %>
```

```
  <hr />
```

```
  <%= render 'layouts/footer' %>
```

```
</div>
```

See full file in `lecture_5.txt`

# SessionsController

Fill in the code for the **create** function in **app/controllers/session\_controller.rb**

Use your **User.authenticate** function that you wrote for HW

1. Inside the controller function you can use
  - a. **params[:session][:email]** and
  - b. **params[:session][:password]** to get the form inputs.
2. If **User.authenticate** returns a user
  - a. set a flash :notice of "Welcome, <their email address>!"
  - b. redirect to the users profile page
    - i. if you have a user object, **user\_path(user)** will be the path to their profile page
3. If **User.authenticate** returns **nil**
  - a. set a flash :error of "Invalid email/password combination"
  - b. redirect back to the login form

Here's how you can run just the specs relevant to this task:

**bundle exec rspec spec/requests/session\_spec.rb -e "login form submission"**

Once this is passing, you're ready to move on. We still aren't *actually* logging them in yet; that's next.

# Cookies!

Finally, we are at a spot to actually log people in. Let's use a cookie to remember who the current user is.

In Rails, we can write cookies by setting keys on the **cookies** hash.

```
cookies[:current_user_id] = user.id
```

Then in subsequent requests we can read them back:

```
current_user_id = cookies[:current_user_id]
```



# Logging in

Let's remember the current user id on successful logins using a cookie\*.

Next we need some helper methods to facilitate working with the currently authenticated user.

We'll have several, so lets start a new module, at **app/helpers/session\_helper.rb**

\*this is silly and horrifically insecure; I could become any user I want by just sending a cookie with their user\_id.

# What's a module?

A set of functions with a common purpose that can be included in other Ruby classes.

Unlike inheritance, a Ruby class may include many modules (but may only inherit from one parent class).

Sometimes they are called "mixins" because they "mixin" functionality to a class. This is a very powerful tool for reusing code.

```
def sign_in(user)
  cookies[:current_user_id] = user.id
  self.current_user = user
end
```

```
def sign_out_user
  cookies.delete :current_user_id
end
```

```
def current_user=(user)
  @current_user = user
end
```

```
def current_user
  @current_user ||= User.find_by_id(cookies[:current_user_id])
end
```

```
def signed_in?
  !current_user.nil?
end
end
```

# Helpers

Helpers are automatically included for us to use in views, but we will need to include our helper ourselves if we wish to use the functions in controllers. Which we do.

```
app/controllers/application_controller.rb  
class ApplicationController < ActionController::Base  
  protect_from_forgery  
  include SessionHelper  
end
```

Including the SessionHelper module is effectively the same as defining the methods *on* the ApplicationController class; but it's much cleaner to keep them in a separate module

# Customize our header

Using our new **SessionHelper** functions, lets make the following changes to our header:

- Add a call to **sign\_in(user)** to your **create** function, after a user successfully authenticates
- Using the **signed\_in?** and **current\_user** helpers, add logic to **app/views/layouts/\_header.html.erb** such that if someone is logged in:
  - Display a "Logout" link instead of a "Login" link
  - Set the link for "My Profile" to point to the **current\_user**'s profile page
  - Set the link for "My Account" to point the page for editing the **current\_user**
  - Hide the "Sign Up" button on the home page
- If someone is not logged in
  - Display a "Login" link instead of a "Logout" link
  - Hide the links for "My Profile" and "My Account"

When you're done, more specs should be passing:

```
bundle exec rspec spec/requests/session_spec.rb -e "customized header"
```

# Logging out

In our `sessions_controller`, implement the **destroy** function.

The destroy function should

- logout the current user (we already have the function to do this in our **SessionHelper** module).
- set a flash notice on the page that reads "Logged out <email>"
- redirect to the home page.

Once these are passing, you got it

**bundle exec rspec spec/requests/session\_spec.rb -e "logging out"**

Once those pass, all your tests should be passing :)

**bundle exec rspec**

# Commit time

git status # see what we modified

git add -A # add all the changes

git commit -m "authentication"

git checkout master # merge it back into master

git merge login

git push origin master # github

git push heroku master # heroku

# Today we...

- Created the login form
- Used a cookie to remember who the current user is
- Customized our layout for the current user
- Implemented logging out

OH

Now until 4pm

Monday from 7-8pm