



*And welcome back*

# RECAP O'CLOCK

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- Remember Ruby?
- As a developer, you will frequently come against stuff that you have zero familiarity with in other people's code.
- Not everyone documents their code well.
- See how well you can figure out this code. Before you start researching the unfamiliar stuff, get as far as you can with what you do know.
- <https://gist.github.com/trivett/d629ba54ccd089032b4f>
- You got 15 minutes!



**and now it's time for something  
completely different**



# FILL OUT THE SURVEY IN YOUR EMAIL

*It's rather important*

*When you finish, start thinking about the various models and  
gems you will need in your final project.*

# OBJECTIVES

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- You will learn what a form is, and how to accept data from your users.
- You will learn how to store user typed information inside of your Database (using a model)

# FORMS

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- Forms are used to collect data from users on a webpage
- They commonly map directly to a model's attributes
- A common form you use all the time is “sign up” or “login”  
"new tweet" etc.

# FORMS (CONT)

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- Forms contain “fields”, a field maps to a single attribute
- There are many types of fields (password, text, select, textarea, ...)
- Rails contains helpers that allow you to create forms very easily

# FORMS (CONT)

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- When you go to an index or show page, you make one type of HTTP request.
- When you delete a record, you make another.
- What type of request happens when you submit a form?



# FORMS (CONT)

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- When you submit a form, it performs a different type of request.
- We've defined routes using "get ...", but forms will use the method "post" and "put"
- So you will have routes that are similar to "post '/create'" now

# RESOURCE ROUTES

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- `resources :something`
- Defines 7 routes in 1 line of code
- The routes that are defined are the most common routes you will use.

## routes.rb

```
1 Rails.application.routes.draw do
2   resources :photos
3 end
```

*Creates these routes:*

| localhost:3000/rails/info/routes            |           |   |                   |
|---|-----------|---|-------------------|
| Routes                                      |           |   |                   |
| Routes match in priority from top to bottom |           |   |                   |
| Helper                                      | HTTP Verb | Path                                    | Controller#Action |
| <u>Path / Url</u>                           |           | <input type="text" value="Path Match"/> |                   |
| photos_path                                 | GET       | /photos(.:format)                       | photos#index      |
|   | POST      | /photos(.:format)                       | photos#create     |
| new_photo_path                              | GET       | /photos/new(.:format)                   | photos#new        |
| edit_photo_path                             | GET       | /photos/:id/edit(.:format)              | photos#edit       |
| photo_path                                  | GET       | /photos/:id(.:format)                   | photos#show       |
|   | PATCH     | /photos/:id(.:format)                   | photos#update     |
|   | PUT       | /photos/:id(.:format)                   | photos#update     |
|   | DELETE    | /photos/:id(.:format)                   | photos#destroy    |

# QUICK START

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- In your class 11 folder
- Create a new rails app (rails new) called “amazing\_products”
- Declare your routes with the resources shortcut
- `cd products`
- Generate a model called “Product” with 2 attributes
  - `name:string`
  - `price:integer`
- Migrate your database
- When you finish, add at least three products with seeds or the rails controller.



# SHOW, INDEX

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- Give the products controller an index and show action.
- Link the products on the index page to the appropriate show action with `link_to`
- We have already done this, nothing new so far. Look back at the slides from the last class for hints.

# ADDING A FORM

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- Forms are a part of your view
- They are the portal to interacting with a model (most of the time) from a browser.
- Which type of HTTP request will be required for the form?
- How might you check?

# CREATING DATA

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- All points of “creating” a new record in your database starts at the controller action “new”
- So the page for adding a product would be:
  - Controller: `ProductsController`
  - Action: `new`
  - View: `app/views/products/new.html.erb`

# CREATING DATA

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- The **new** action simply *displays* a form to the user. It does **not** actually create the data in the database.
- Not creating anything in the database.
- The **create** action is responsible for creating the data within our model.
- Look at rake routes
- Notice the different HTTP methods for **new** and **create**



# OUR CONTROLLER

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 **products\_controller.rb**

```
1  class ProductsController < ApplicationController
2    def new
3      @product = Product.new
4    end
5  end
```

- *Only initializes an empty model*
- *This means all of our attributes are **nil**. No **id**. No **created\_at**.  
**Nothing.***
- *This is simply to pass our view (and form) an empty model to “fill out”*

# OUR VIEW

---

## new.html.erb

```
1 <%=# app/views/products/new.html.erb %>
2
3 <%= form_for @product do |form| %>
4   Name: <%= form.text_field :name %>
5   <br>
6   Price: <%= form.text_field :price %>
7   <br>
8   <%= form.submit "Add Product" %>
9 <% end %>
```

*Create and display a form for @product  
(passed from our controller)*

*Display a text field for the “name”  
attribute on the Product model*

*Display a submit button that has the text  
“Add Product” inside of it*

# LAB

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- Add a “new” action that sets up the product form
- Add a form for a new product that displays fields for the name and price for the new controller and action.
- Include a submit button
- Put a link to the new action on the index view. Use the handy `new_product_path` path helper.
- Try it out in the browser. What happens when you hit submit?

**BREAK**





# COLLECTING THE DATA

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- Again, the **new** action only displays the form, it does **not** actually create the data.
- To create the data in our model / database. We need to add another action called **create**.

# PRESSING SUBMIT

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- The markup that the `form_for` code creates includes HTML `<input>` tags. Let's have a look at that in the Chrome developer tools.
- Run your server and right click on the form to inspect element. What's all this?
- When you press "submit" on the form, your browser performs a "POST" request to a URL in your rails application.
- The `form_for` helper will make the submit button send data to `/products` with a POST request type.

# THE CREATE ACTION

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- Sending POST /products routes to the **Products controller** and the **create action**.
- You can see this with rake routes, or /rails/info/routes in your browser

# DATA FORMAT

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- In your controller actions, you have access to a hash called “params” Yep. THOSE params.
- The params hash contains all details from the route, and any data passed to the controller (via POST).
- You use the params hash to collect data from a form and save it to a database using your model.



# DATA FORMAT

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- The params hash is also magical. Rails adds methods to “permit” data from being sent to your controller.
- This is used to prevent values being sent that aren’t allowed. For example:
  - Changing the availability of a product
  - Changing the users enabled / disabled status
  - Many others







IF YOU SEE THIS PERSON COVERED IN NUMBERS WITH A HOODIE PLEASE REPORT TO THE POLICE. THIS IS WHAT THEY LOOK LIKE. SI VES ALGO, DI ALGO.

# DATA FORMAT

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- If the controller doesn't specifically permit certain params a hacker can potentially inject his or her own parameters into the form by guessing attribute names.
- For instance, if you have a user model with name and is\_admin, the hacker can guess that if there is an is\_admin and it is set to true, passes that parameter, guess what.
- All your data belong to us. pwned. whatever the kids on 4chan are saying these days.

# STRONG PARAMETERS

.....

 **products\_controller.rb**

```
1  class ProductsController < ApplicationController
2    def new
3      @product = Product.new
4    end
5
6    def create
7      puts params.inspect
8      # => { "action" => "create", "controller" => "products", "product" => {
9      #       "name" => "user input", "price" => "user input" } }
10     product_params = params.require(:product).permit(:name, :price)
11
12     puts product_params.inspect
13     # => { "name" => "user input", "price" => "user input" }
14   end
15 end
```

# ALL RAILS MODELS CAN BE INITIALIZED WITH A HASH

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- Remember, you can always initialize a rails model with a hash:
  - `Product.new("name" => "Beats Studio", "price" => 400.50)`
- So if params is just a hash...



# INITIALIZING MODELS WITH PARAMS

.....

 **products\_controller.rb**

```
1  class ProductsController < ApplicationController
2    def new
3      @product = Product.new
4    end
5
6    def create
7      product_params = params.require(:product).permit(:name, :price)
8
9      @product = Product.new(product_params)
10     @product.save
11
12     render nothing: true
13   end
14 end
```

*(skip rendering a view file)*



# INITIALIZING MODELS WITH PARAMS

.....

 **products\_controller.rb**

```
1  class ProductsController < ApplicationController
2    def new
3      @product = Product.new
4    end
5
6    def create
7      product_params = params.require(:product).permit(:name, :price)
8
9      @product = Product.new(product_params)
10     @product.save
11
12     render nothing: true
13   end
14 end
```

*(skip rendering a view file)*

*Why render nothing??*

# RECAP

---

- All data submitted through a form is placed in the “params” hash in our controller actions
- We use the params hash to initialize and save models to our database. Hence creating data from our browser!

# CODE ALONG

---

- Accepting user data from our products form to create a product in our database!

**BREAK**



# REDIRECTS AND FLASHES

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- Rails provides 2 facilities that are very useful for creating and updating databases.
- Redirects
  - A controller can redirect the user's browser to another url (and another action at that)
- Flashes
  - A controller can set something called a “flash message” that is only displayed on the next page load.

# REDIRECTS

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- In a controller action, you can use:
  - `redirect_to “/hello_world”`
  - This make the users browser go to “/hello\_world” on the same domain.
  - this assumes that you have something at that route (or in the public folder)

# REDIRECTS

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- You use redirects commonly when you may not have a view, but still want to perform an action.
- For example, creating something in our database usually doesn't have a view to be rendered. You typically will redirect the user to another page, and inform them there that the item was created.



- So our **create action** that creates products, wouldn't actually have `"app/views/products/create.html.erb"` That doesn't make sense. We already saw this with the delete method.
- Instead, you would:
  - `redirect_to "/products"`
  - You can use the path helper that rails gives you
  - `redirect_to products_path`
- And display using a flash (coming up next) that the product was created.

# FLASHES

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- Another hash!
- Flash hash!
- Flashes are displayed only once on a page
- Typically used for displaying quick info messages in a view.  
Such as “Product created successfully!”

# FLASHES ARE ANOTHER SPECIAL HASH

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- Rails uses flashes like hashes.
- To define a flash message, you can set a key on the flash hash with the value you'd like.
- For example:
  - `flash[:notice] = "Product created!"`

.....

```
def create
  product_params = params.require(:product).permit(:name, :price)

  @product = Product.new(product_params)
  if @product.save
    flash[:notice] = "Product created!"
    redirect_to "/products"
  end
end
```

.....

```
def create
  product_params = params.require(:product).permit(:name, :price)

  @product = Product.new(product_params)
  if @product.save
    flash[:notice] = "Product created!"
    redirect_to "/products"
  end
end
```



*This if statement both SAVES the product and returns true if it worked.*

# DISPLAYING A FLASH

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- You can access the same flash hash in the view!
- Now where can I place the flash message where it will be visible on ALL views.....

# DISPLAYING A FLASH

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- That's right! `views/layouts/application.html.erb`. Maybe right above the `<%= yield %>` statement.
- The application layout is rendered on every page. The bread part of the burger.
- This allows you to not have to render the flash message in every single view file you have. A big time save.

# DISPLAYING A FLASH

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- Using erb, you can render a flash message with:
- `<%= flash[:notice] %>`
- On the next page load, this won't display anything. It is only displayed once.



# CODE ALONG

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- Making a flash message appear after our products are created.
- In our controller, make a flash message appear on the next page when a product is created successfully.
- Redirect the user to the products index page

# EXIT TICKETS

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- Remember to fill out exit tickets

# HOMEWORK / LAB

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- More work on the Movie app
- Spec
  - Resourceful routes. Set the root to the index route.
  - Index page displaying all movies. Each movie name should be a link to the show page for the movie.
  - Link to delete a movie on that movie's show page.
  - Link to new movie with a form.
  - When a movie is created, redirect to the index page with a message that it worked.
  - Header in application layout.