Rails Controllers: Query String

Link to lesson

- A link to the lesson can be found here.

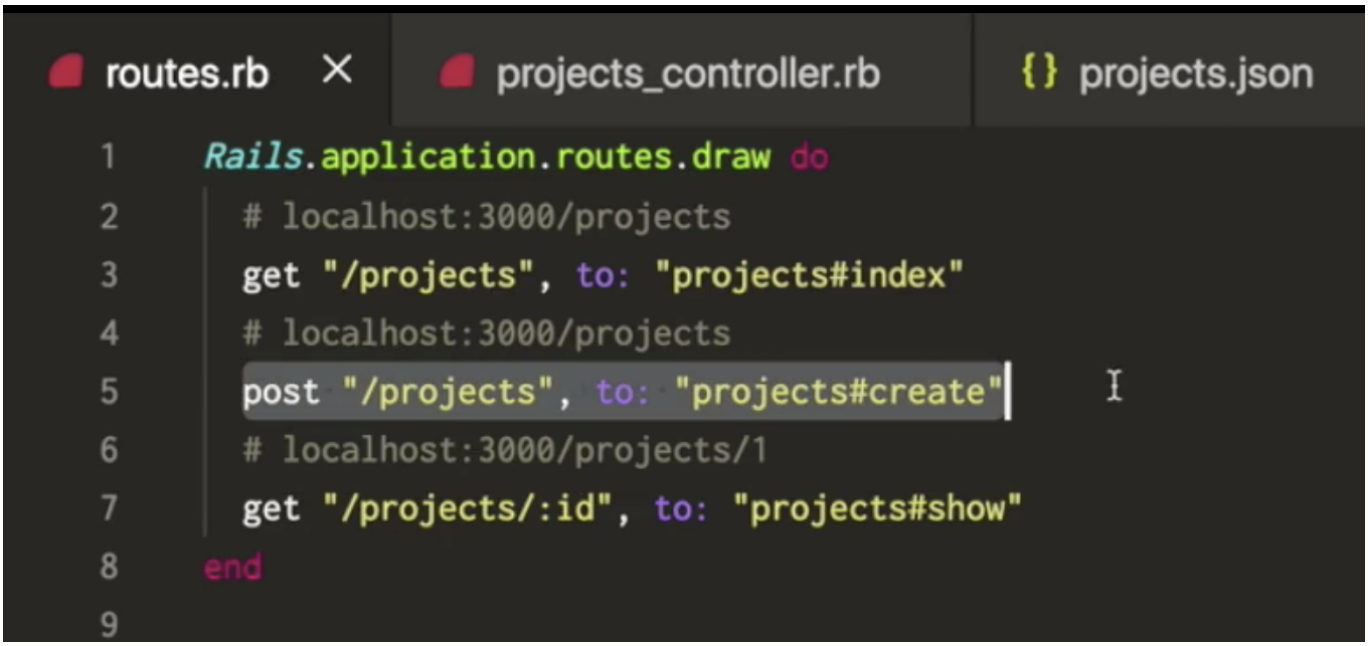
Create action

- Previously we set up a **Create action**

routes.rb | projects_controller.rb | projects.json

```ruby
class ProjectsController < ApplicationController
  before_action :read_projects
  skip_before_action :verify_authenticity_token

  def index
    # send back all of the resources to the client
    render json: @projects
  end

  def create
  end

  def show
    # send back 1 resource to the client
    found_project = @projects.find do |project|
      project["id"] == params[:id].to_i
    end

    render json: found_project
  end

  def read_projects
    @projects = JSON.parse(File.read(Rails.public_path.join("projects.json")))
  end
end
```

- And a **route** that **connected** to the **create action** through a **post request**.



- We found out we **couldn't test** this out in the **browser**, we had to test this out in **another app (postman):**
- In order to send a **post request** to our Rails app.

Sending data from client side to web sever/rails app

- Often you would do this through a **form like a html forms**
- We are currently NOT working with forms because we don't yet have a **view.**
- What we DO have instead is the **actual URL.**
  - We can send some data through the URL
  - Like sending an **ID in our params** to show one project.
- Before we were sending through a param

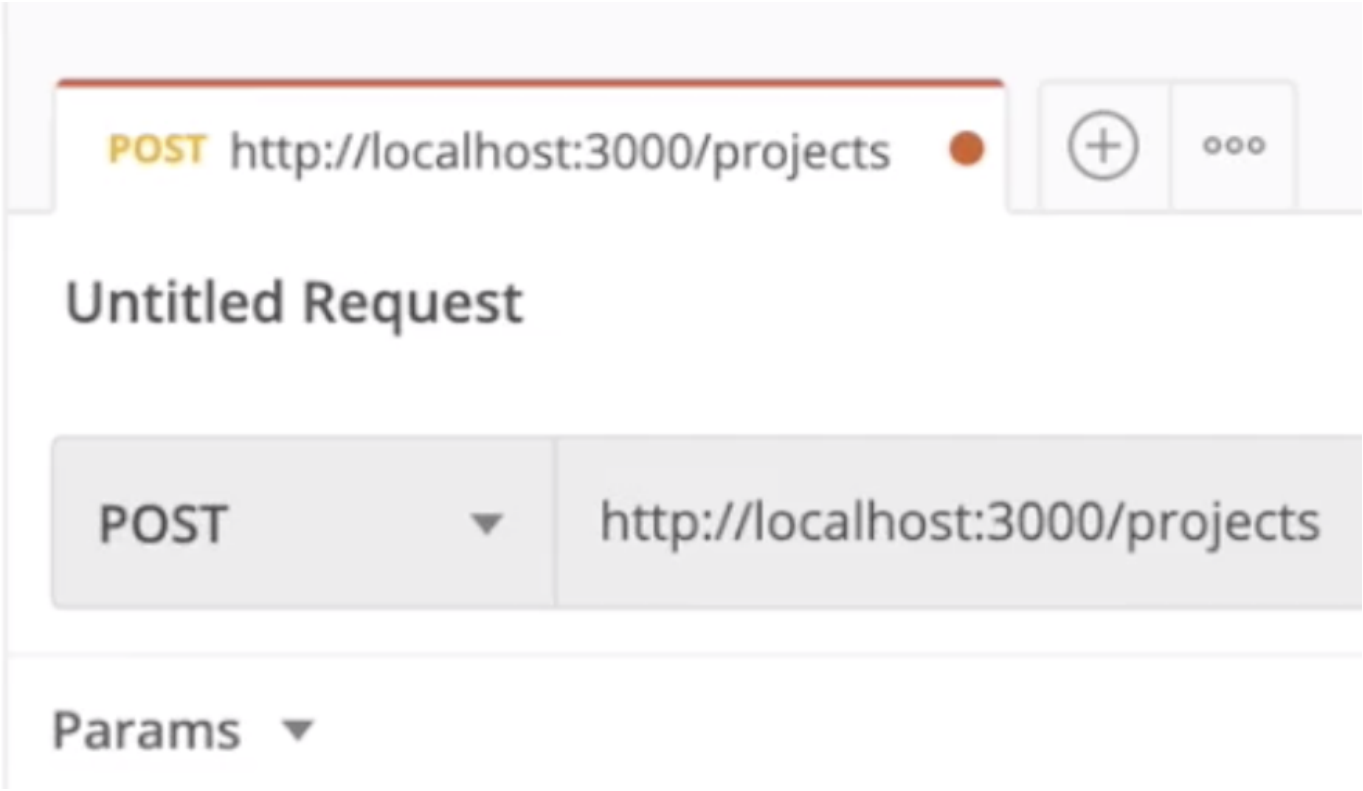
```
localhost:3000/projects/1
```

We will send our data differently this time.

- Instead we will use the **query string** to send some data from our **client side** to our Rails app.

Query String

- Query string looks like this (see image below):



- The route is:

```
/projects
```

- After the route we can add a question mark

```
/projects?
```

- The question mark is the **start** of the **query string.**
- Then we can **define key value pairs** in our **query string.**
- For example: We can send across an id:

```
/projects?id
```

- And we want that id to be equal to 3.

```
/projects?id=3
```

- We can also send across another key value pair
    - Key value pairs need to be separated with an &

```
http://localhost:3000/projects?id=3&
```

- The second key value pair will be the name of the project

```
http://localhost:3000/projects?id=3&name=portfolio app
```

- Then we want to send through the GitHub status

```
http://localhost:3000/projects?id=3&name=portfolio app&github_status
```

- And lets set that to true

```
  http://localhost:3000/projects?id=3&name=portfolio
app&github_status=true
```

Back to Create Action

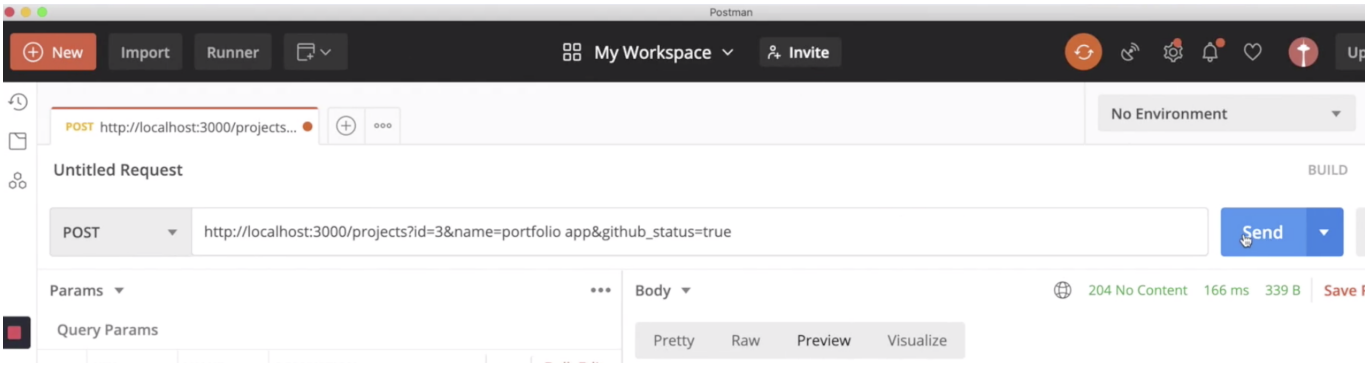
- Lets go back to our create action and *p params*:

```
def create
  p params
end
```

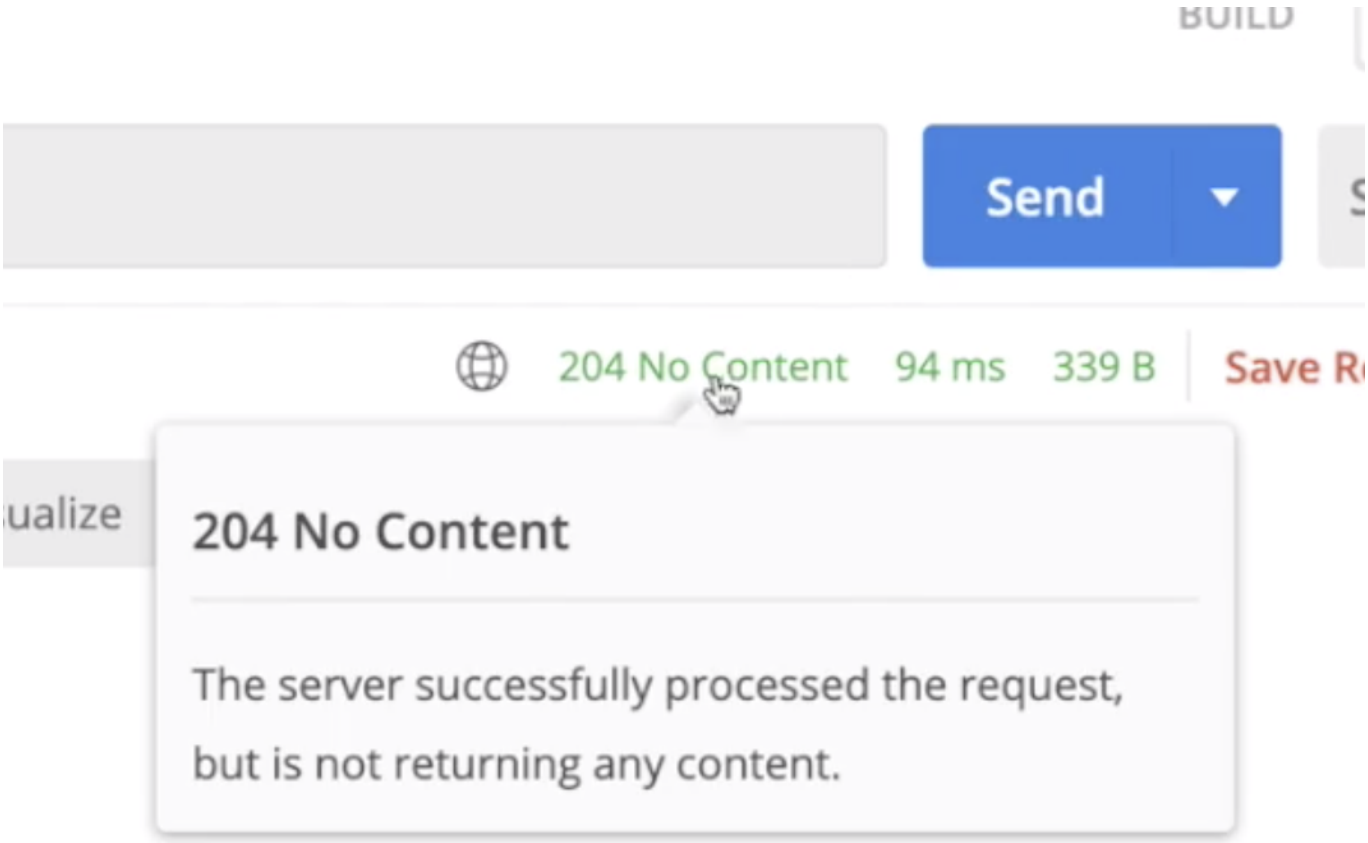
routes.rb | projects_controller.rb | projects.json

```ruby
class ProjectsController < ApplicationController
  before_action :read_projects
  skip_before_action :verify_authenticity_token

  def index
    # send back all of the resources to the client
    render json: @projects
  end

  def create
    p params
  end

  def show
    # send back 1 resource to the client
    found_project = @projects.find do |project|
      project["id"] == params[:id].to_i
    end

    render json: found_project
  end

  def read_projects
    @projects = JSON.parse(File.read(Rails.public_path.join("projects.json")))
  end
```

Now we can send a post request on postman:



We will still get back a no content:



But if we look at our logs and where we are printed our params, we will see that:

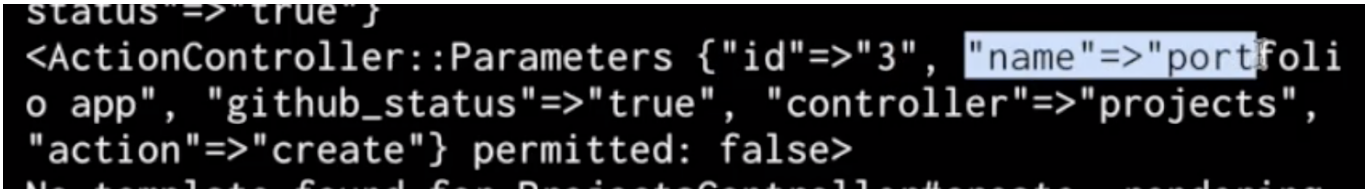
- We HAVE got some extra information in parameters now.

```
Started POST "/projects?id=3&name=portfolio%20app&github_st
atus=true" for ::1 at 2020-09-11 12:36:21 +1000
   (0.1ms)  SELECT sqlite_version(*)
Processing by ProjectsController#create as */*
  Parameters: {"id"=>"3", "name"=>"portfolio app", "github_
status"=>"true"}
<ActionController::Parameters {"id"=>"3", "name"=>"portfoli
o app", "github_status"=>"true", "controller"=>"projects",
"action"=>"create"} permitted: false>
No template found for ProjectsController#create, rendering
head :no_content
Completed 204 No Content in 4ms (ActiveRecord: 0.0ms | Allo
cations: 1835)
```

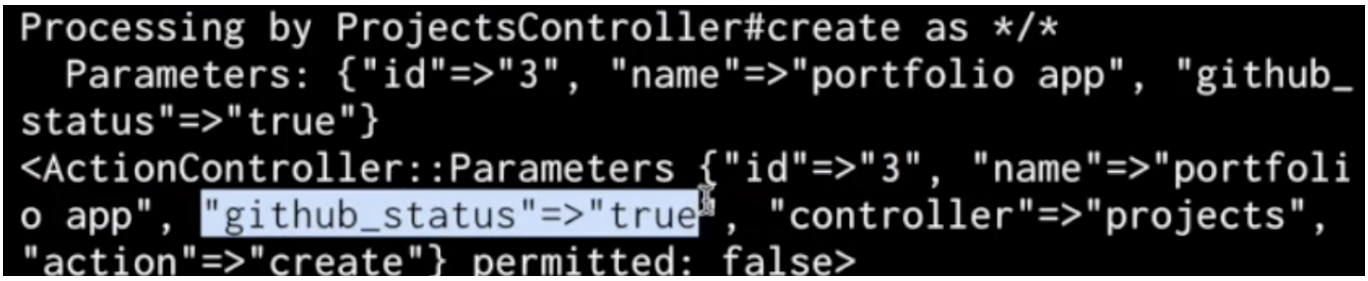
We now have:

- The id

- The name key value pair



- And we got the GitHub status



So ALL OF THE INFORMATION sent through on the query string:

```
    http://localhost:3000/projects?id=3&name=portfolio
app&github_status=true
```

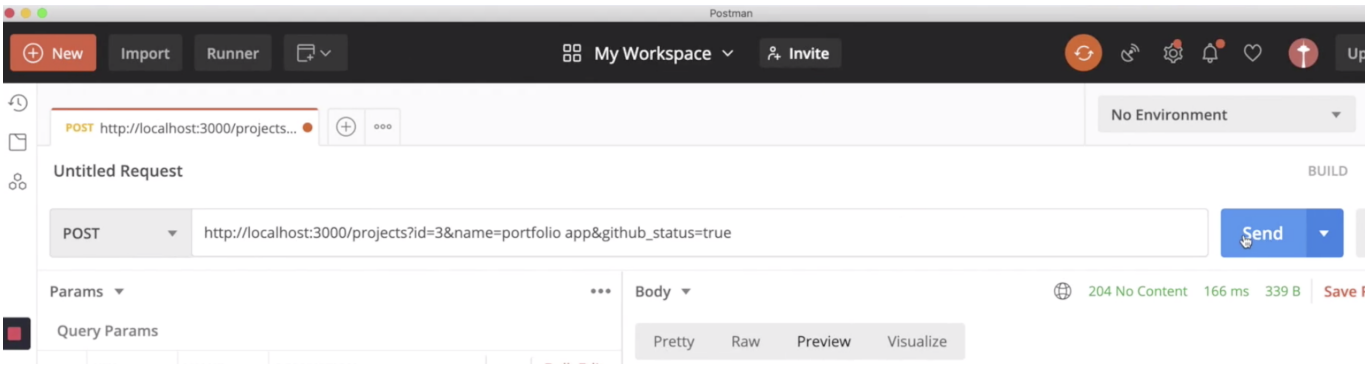
- Can be accessed through params

```
def create
  p params
end
```

Accessing name in the project from params

```
def create
  p params[:name]
end
```

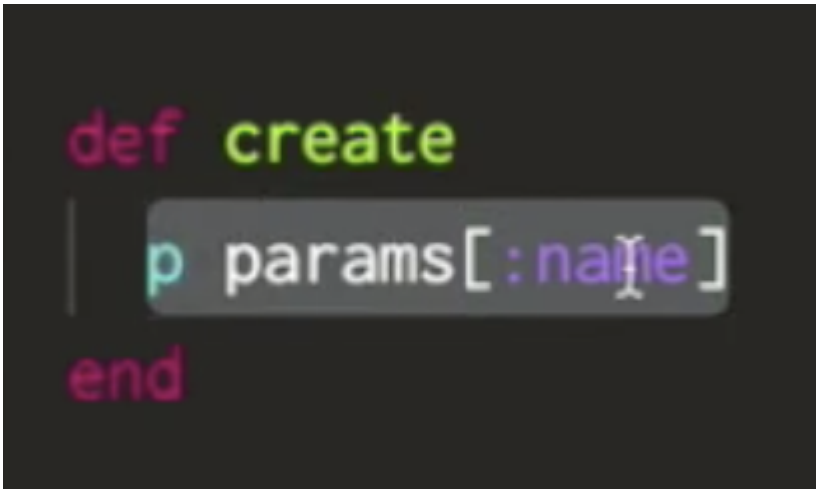
- To double check that works we can send a post request through postman:



Then take a look at our log and we can see that we are getting the name of the project (portfolio app)

```
Started POST "/projects?id=3&name=portfolio%20app&github_st
atus=true" for ::1 at 2020-09-11 12:37:10 +1000
   (0.1ms)  SELECT sqlite_version(*)
Processing by ProjectsController#create as */*
  Parameters: {"id"=>"3", "name"=>"portfolio app", "github_
status"=>"true"}
"portfolio app"
No template found for ProjectsController#create, rendering
head :no_content
Completed 204 No Content in 1ms (ActiveRecord: 0.0ms | Allo
```

Collect information from Param and store in a variable




```
def create
  new_project =
end
```

And we are going to pass a hash with the id that we get from params:

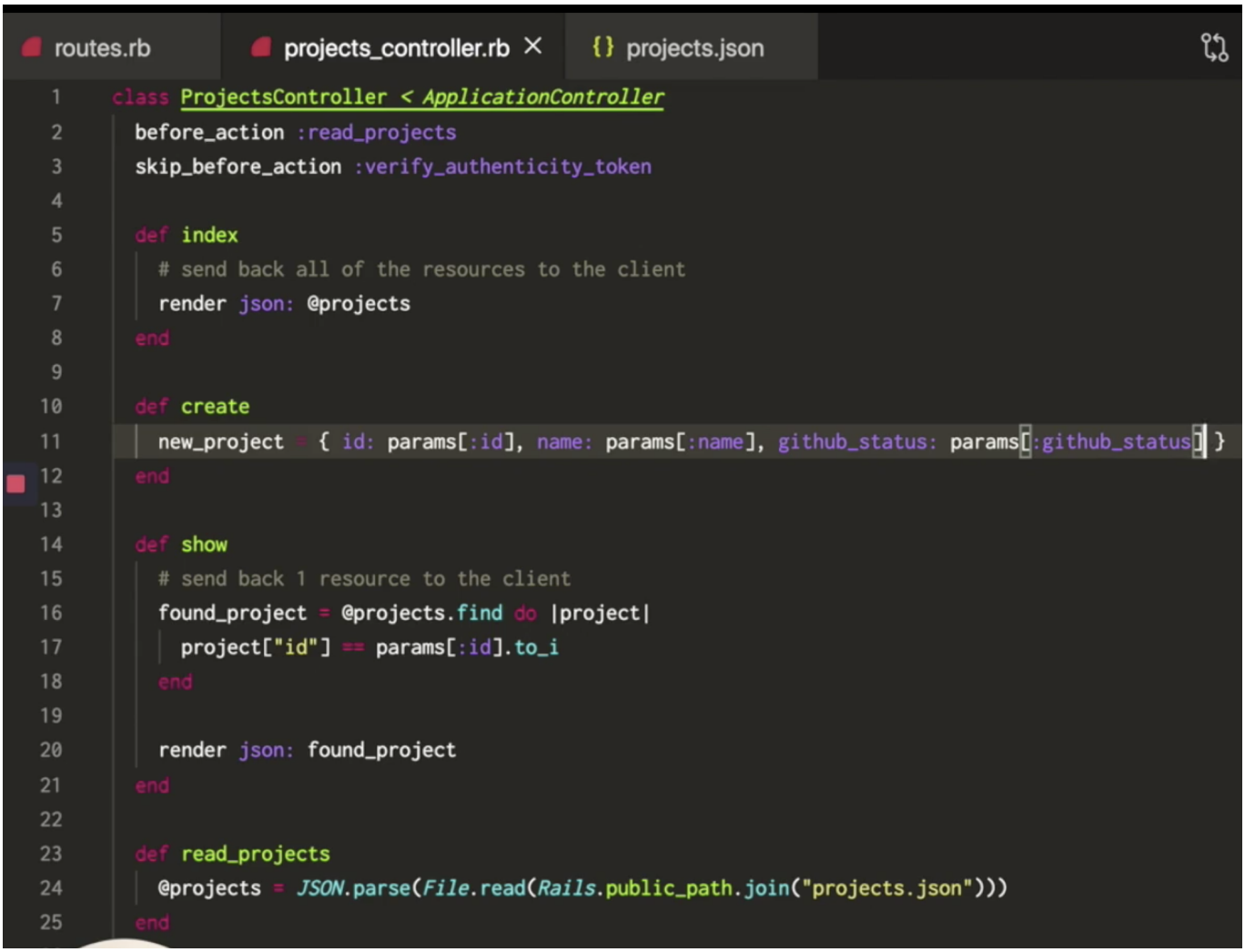
```
    def create
      new_project = {id: params[:id] }
    end
```

And we are also going to get params name of the project

```
    def create
      new_project = {id: params[:id], name: params[:name] }
    end
```

And we are also going to get our GitHub status

```
    def create
      new_project = {id: params[:id], name: params[:name], github_status:
params[:githubstatus }
    end
```



NOW LETS PRINT NEW_PROJECT

```
    def create
      new_project = {id: params[:id], name: params[:name], github_status:
params[:githubstatus }
      p new_project
    end
```

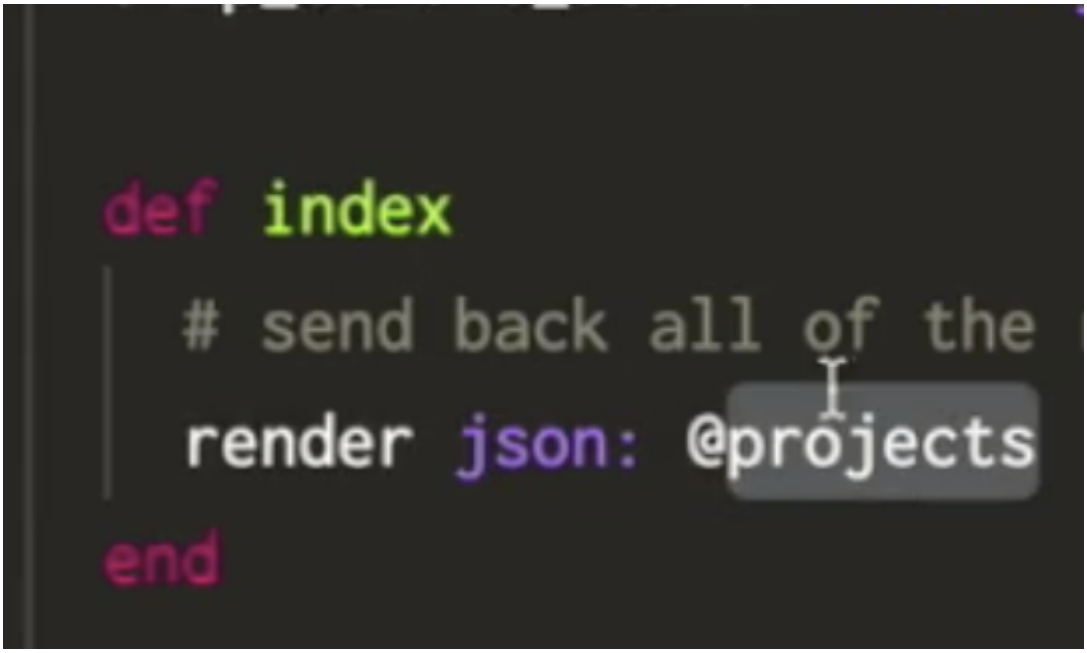
THEN SEND ANOTHER POST REQUEST

- With the same information in the query string.

```
Processing by ProjectsController#create as */*
  Parameters: {"id"=>"3", "name"=>"portfolio app", "github_stat
us"=>"true"}
{:id=>"3", :name=>"portfolio app", :github_status=>"true"}
No template found for ProjectsController#create, rendering head
 :no_content
Completed 204 No Content in 1ms (ActiveRecord: 0.0ms | Allocati
```

- We will see in our logs we have got:
    - A hash with ALL of the values we have sent through as parameters:

Now that we have this nicely formatted hash we can insert it into our projects array of hashes

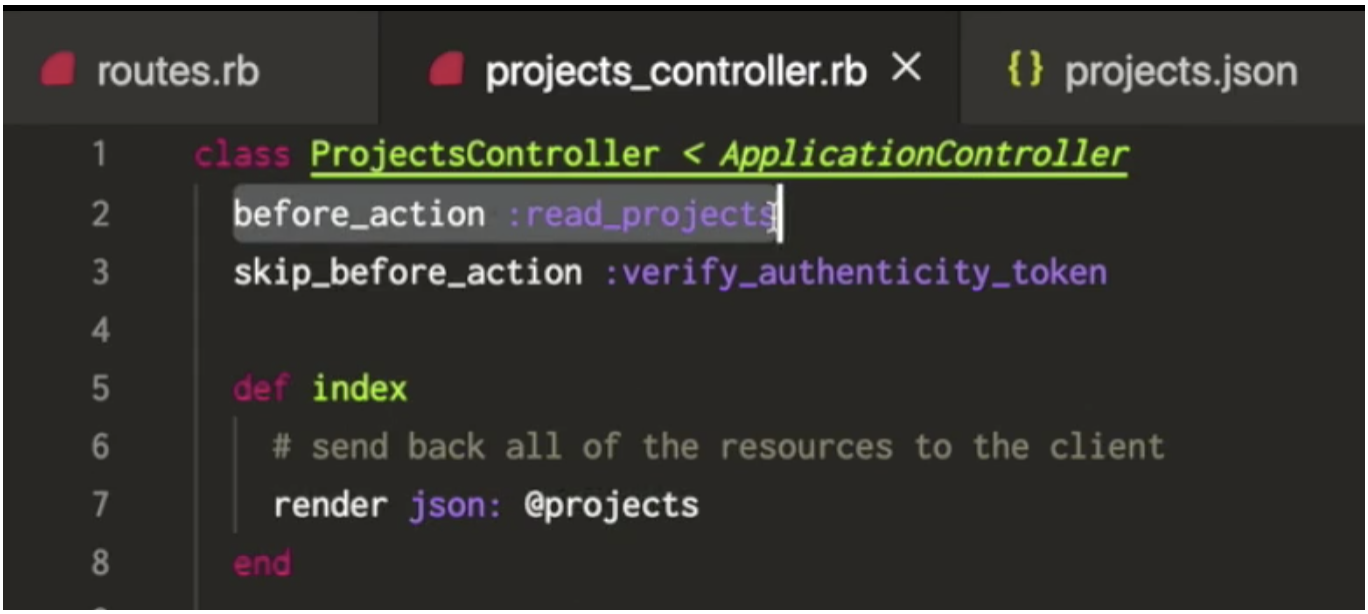


- We have access to the @projects instance variable in our create method because....

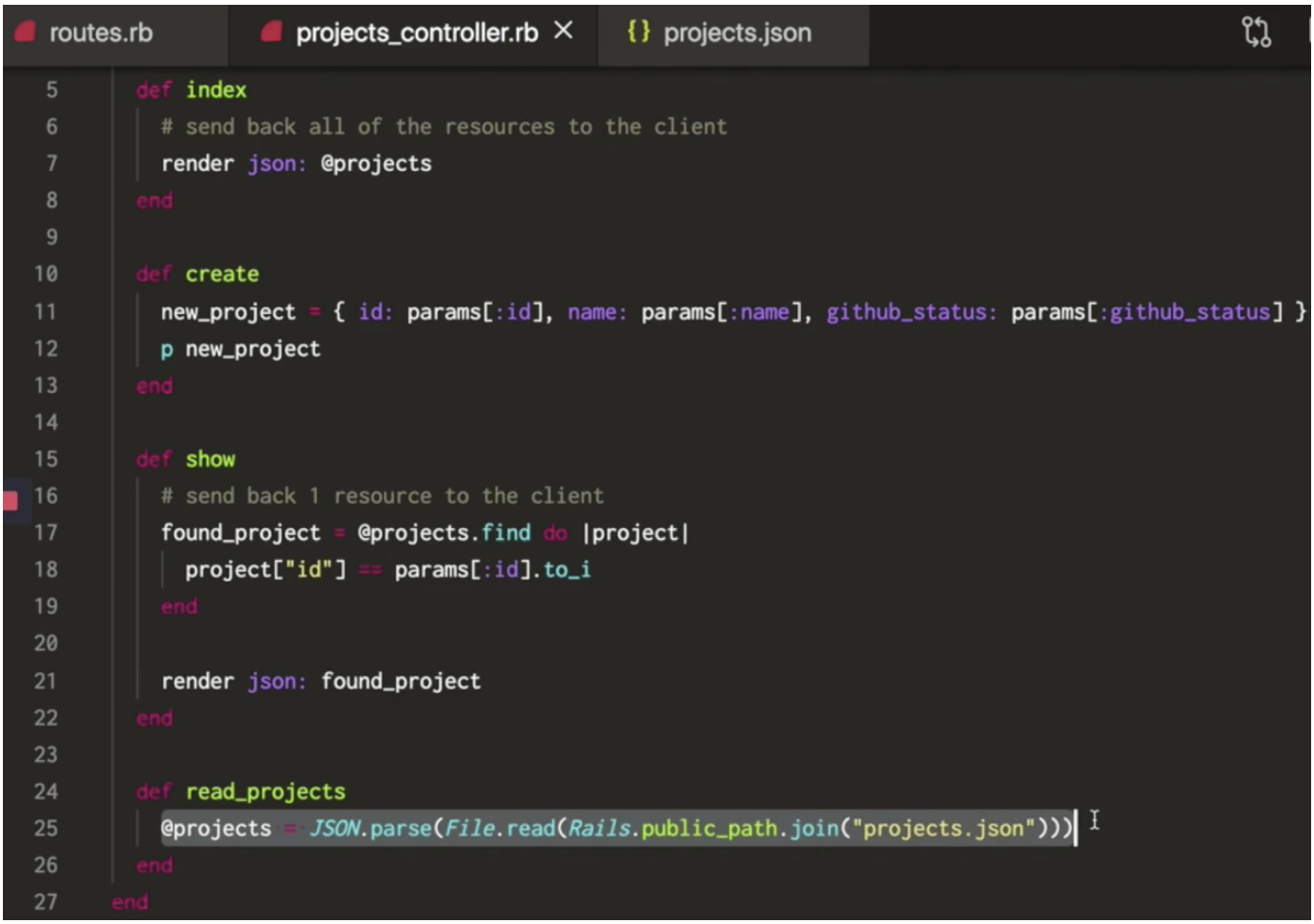
```
  def create
    new_project = {id: params[:id], name: params[:name],
github_status: params[:githubstatus }
    p new_project
  end
```

THE BEFORE ACTION IS RUNNING before our create method!

```
    before_action :read_projects
```



And it is **reading in the JSON file:**



Pushing new project into our array of hashes:

- In our **create method**:

```
  def create
    new_project = {id: params[:id], name: params[:name],
github_status: params[:githubstatus }
    p new_project
  end
```

- We can get rid of p new_project and push new_project into our array of hashes (JSON)

  def create new_project = {id: params[:id], name: params[:name], github_status: params[:githubstatus } @projects << new_project end

- Now we can print @projects

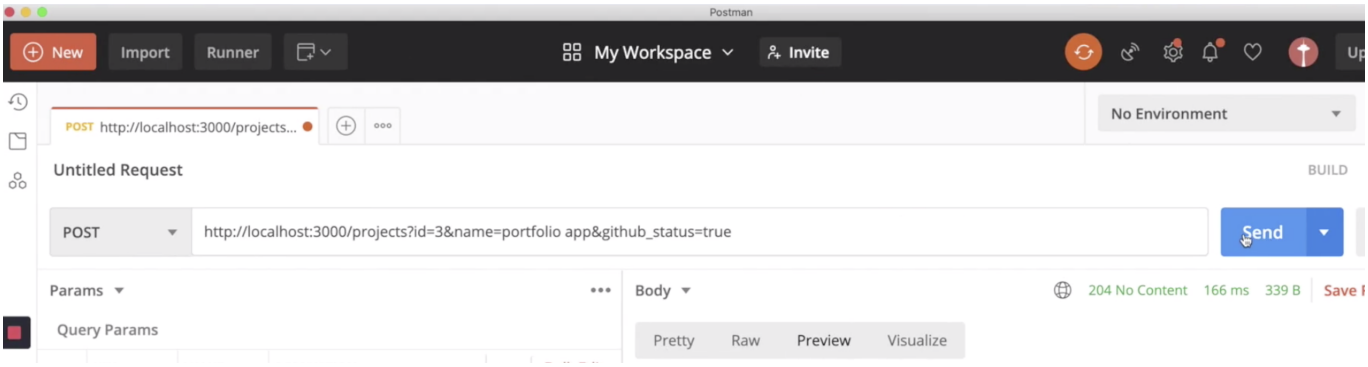
```
  def create
    new_project = {id: params[:id], name: params[:name],
github_status: params[:githubstatus }
    @projects << new_project
```

```
    p projects
  end
```

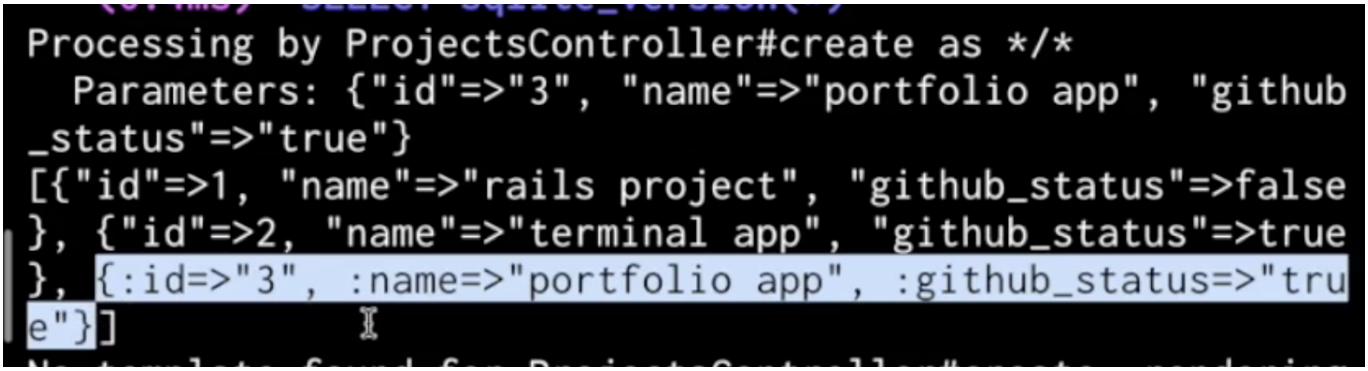
- Lets restart our rails server so we can actually see what's happening:

```
rails s
```

- Send a post request



- In our terminal response we can now see we have 3 hashes
- including our newly created hash



Write the newly created array to JSON file

- In order to write this new array into our JSON file we are going to define a new method

Note: Our array is @projects

```
    def write_projects(projects)


    end
```

- The method will take projects as an argument (which is our newly created array)

- The write method is going to be similar to the read JOSN method.
- Instead of File.read we are going to use File.write

```
File.write
```

- And write takes TWO arguments.

ARGUMENT ONE:

- It takes the file path (which is the same as what we had with File.read)
- Using the public_path.join notation

```
File.write(Rails.public_path.join("projects.json"))
```

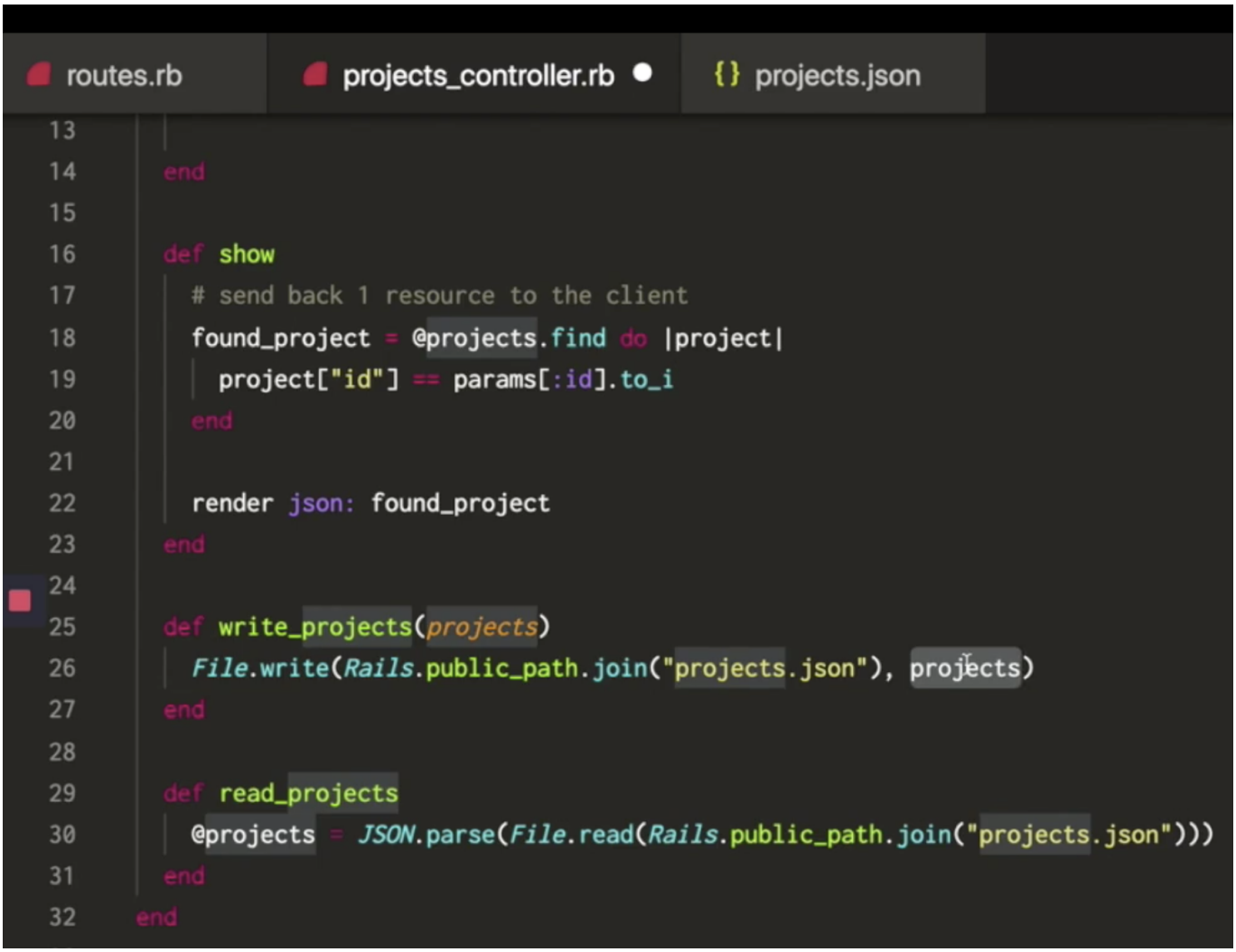
routes.rb | projects_controller.rb ● | {} projects.json

```
13
14    end
15
16    def show
17      # send back 1 resource to the client
18      found_project = @projects.find do |project|
19        project["id"] == params[:id].to_i
20      end
21
22      render json: found_project
23    end
24
25    def write_projects(projects)
26      File.write(Rails.public_path.join("projects.json"))
27    end
28
29    def read_projects
30      @projects = JSON.parse(File.read(Rails.public_path.join("projects.json")))
31    end
32  end
```

ARGUMENT TWO:

- Which is whatever you want to actually write to (that particular file - this in case it is projects).

```
File.write(Rails.public_path.join(“projects.json”)), projects)
```

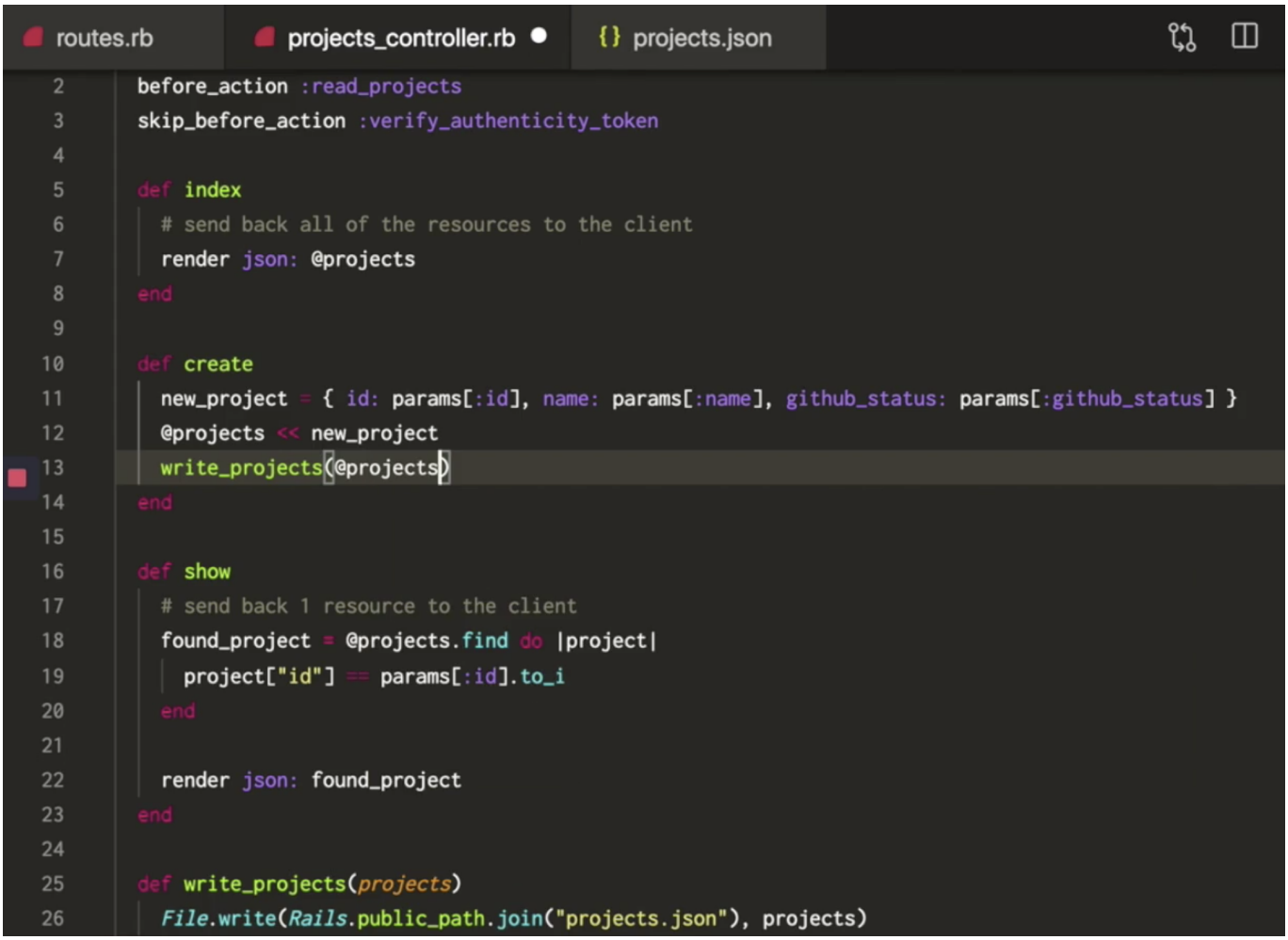


- **NOTE projects is an array of hashes**

Calling the write_projects method

- Let’s call our write_projects method inside of our create method.

```
  def create
    new_project = {id: params[:id], name: params[:name],
github_status: params[:githubstatus] }
    @projects << new_project
    write_project(@project)
  end
```



So in our create method we are: pushing the new project into our array of hashes:

```
@projects << new_project
```

- Then we are parsing that particular array of hashes (@projects):
- To our write_projects method as an argument

```
write_projects(@projects)
```

One more thing to do to @projects

- Currently @projects is just an array of hashes.
- But that won't work with JSON format.

Formatting @projects

- We need to call the json.generate method in our write projects method

```
  def write_projects(projects)
    File.write(Rails.public_path.join("projects.json")),
JSON.generate(projects)
  end
```

```
def create
  new_project = { id: params[:id], name: params[:name], github_status: params[:github_status] }
  @projects << new_project
  write_projects(@projects)
end
```

Render plain text

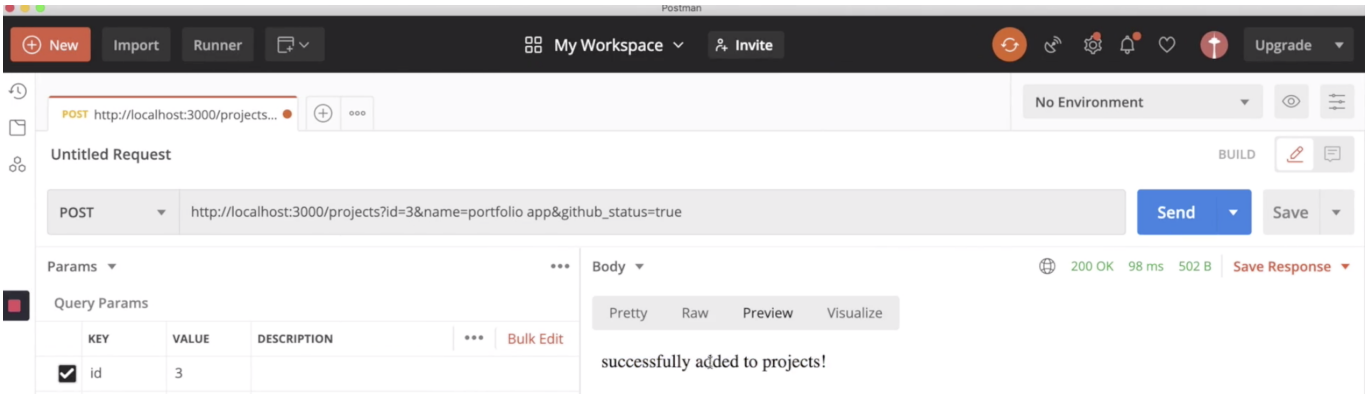
- Lets go to our create method and render some plain text

```
  def create
    new_project = {id: params[:id], name: params[:name],
github_status: params[:githubstatus }
    @projects << new_project
    write_project(@project)
    render plain "successfully added to projects!"
  end
```

```
def create
  new_project = { id: params[:id], name: params[:name], github_status: params[:github_status] }
  @projects << new_project
  write_projects(@projects)
  render plain: "successfully added to projects!"
end
```

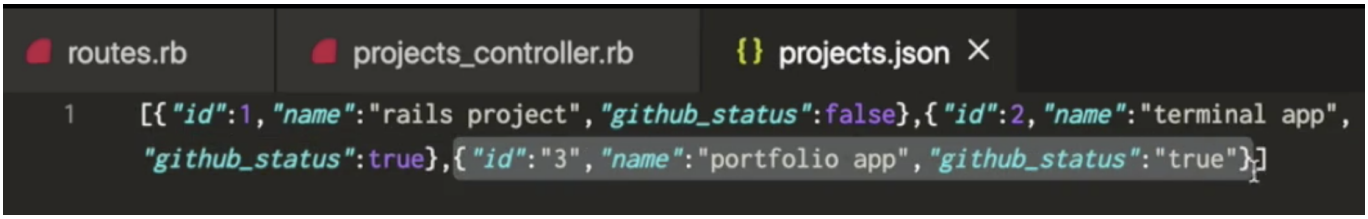
Run this again!

- Send our post request and will receive a response.

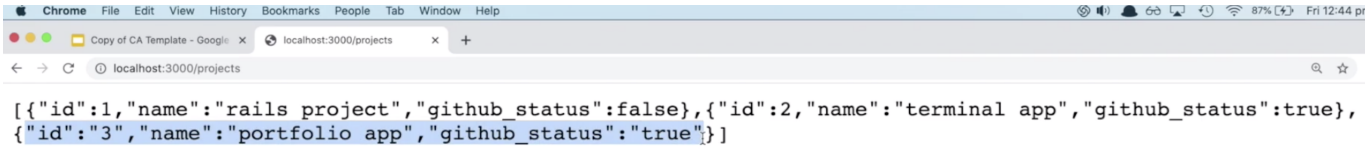


Double checking it added to our json file

- lets go to our projects.json file
- We can see that it our projects.json has been written to and received this object/this hash with:
    - The id
    - The name
    - The GitHub status



- If we go back to the browser and refresh
- We are now getting the project we just created:



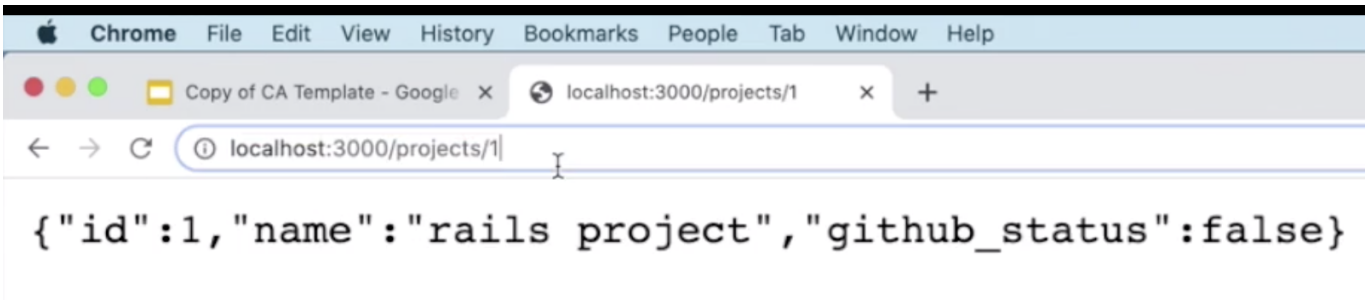
- Because it is a part of the json file, it is now included in this response.

Individual projects

- We can find projects 1

```
localhost:3000/projects/1
```

- And we will get the first project

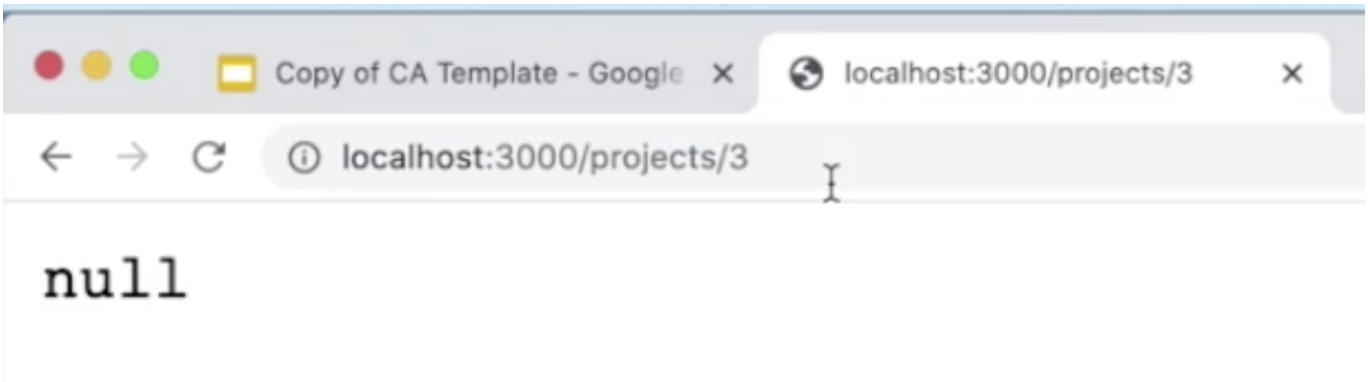


- We can do the same for the second project

```
localhost:3000/projects/2
```

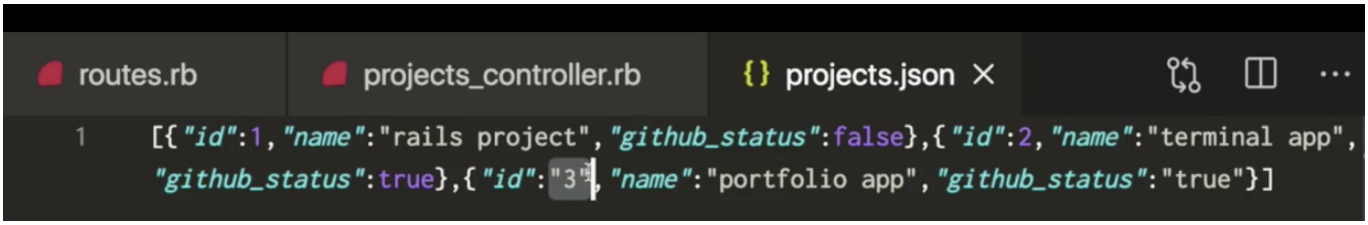
- BUT we get null when we try the third project

```
localhost:3000/projects/3
```

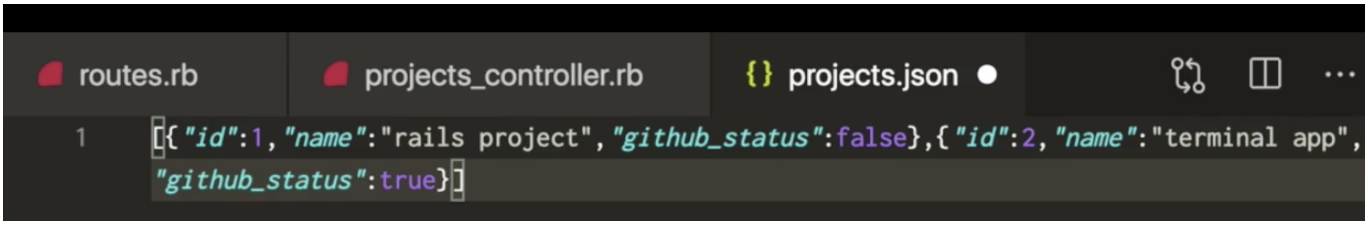


Why null?

- The problem is we are writing the id to our json file as a string.

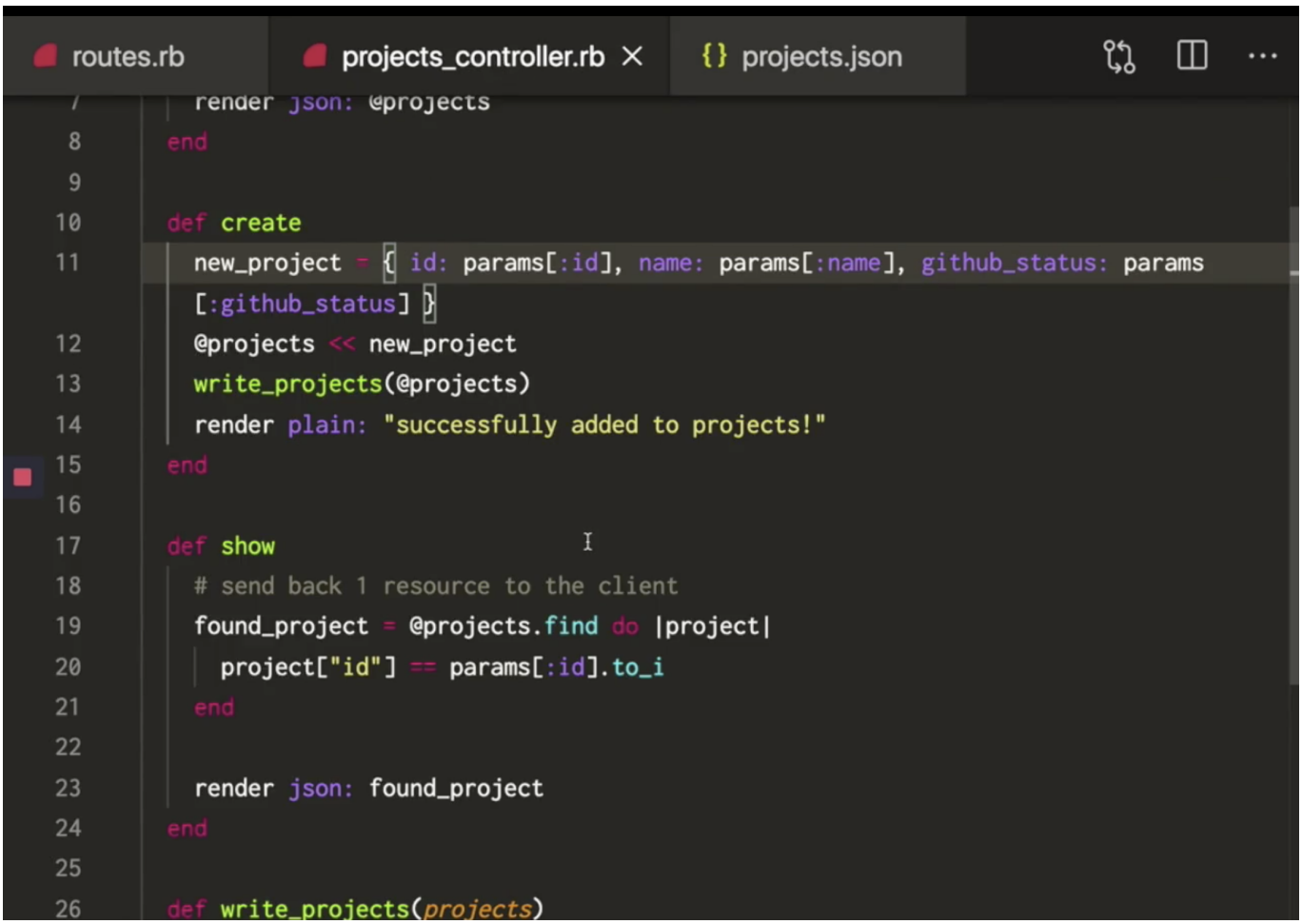


- To overcome this, lets first manually delete this project from our json file.



Fixing null?

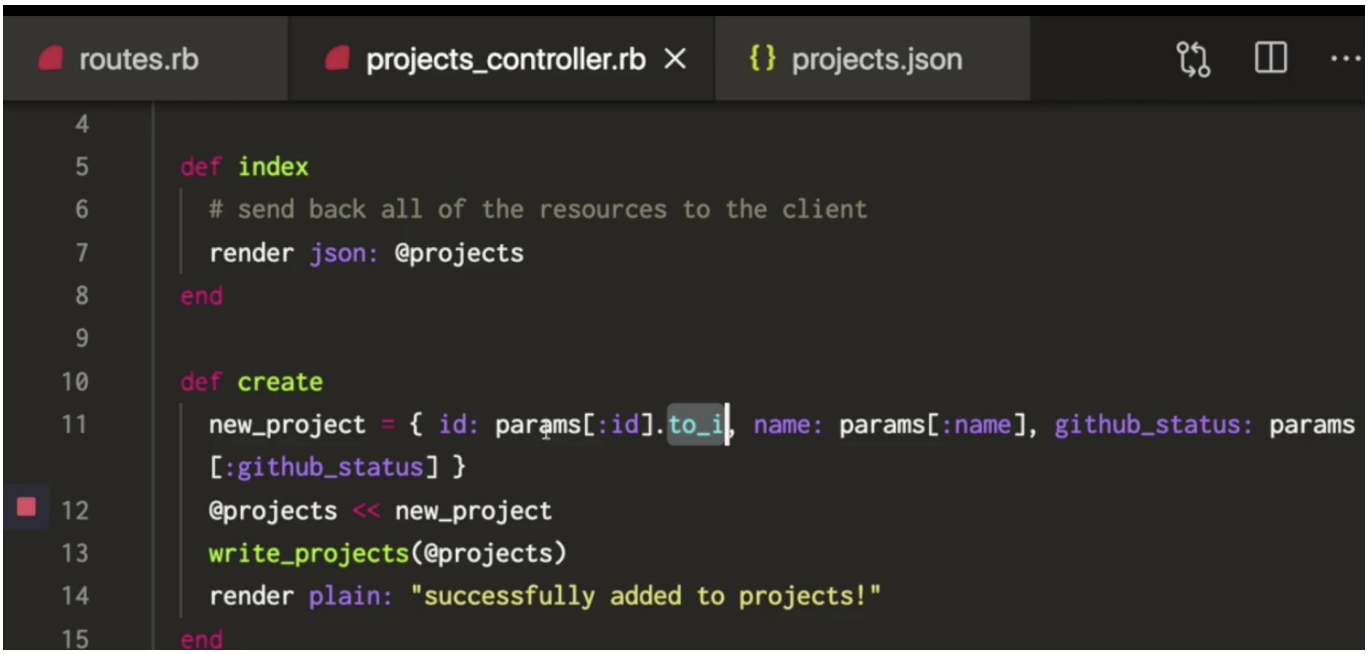
- And lets go back to our controller (projects_controller.rb)



What we are going to have to do is:

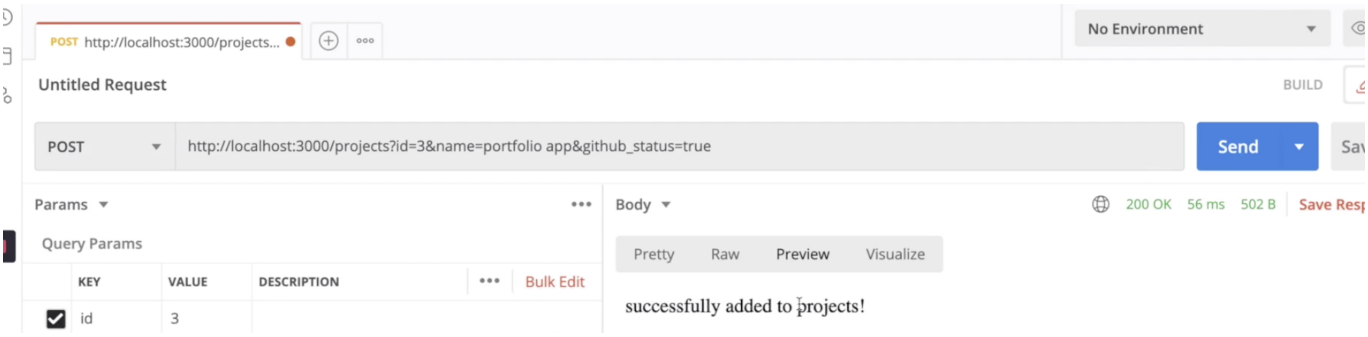
- Convert the id that is passed through params to an integer

```
 def create
   new_project = {id: params[:id].to_i, name: params[:name],
github_status: params[:githubstatus }
   @projects << new_project
   write_project(@project)
 end
```

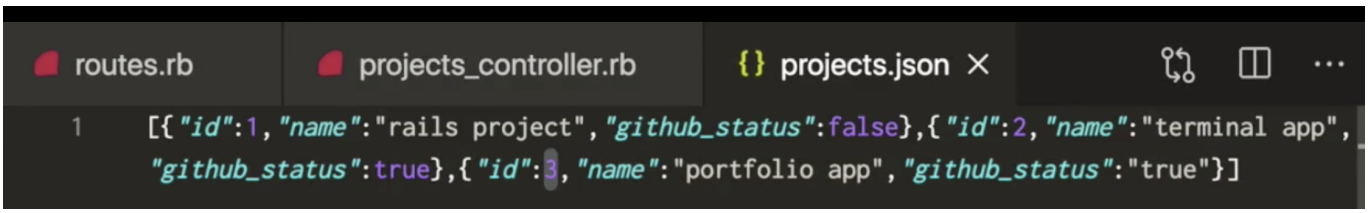


Save and send post request again to check for reading project 3

- Save project and send a post request
- Will see we have a response “successfully added to projects!”



- Now lets look at the json file
- And id is now an integer



- Then we can come back to the browser and check if we get project 3

```
localhost:3000/projects/3
```

- And you can now access project 3