COM 1001

Introduction to Software Engineering

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The Web Application Front-End

Views in Sinatra

What is a “View”?

Ideally, Sinatra blocks should **not** contain any HTML, or any code for constructing the front-end of a web application.

Instead, the front-end of a Sinatra web application consists of **Views**.

Views are templates for constructing the HTML of a web page.

Views live in separate files to other files, including the main Sinatra file.

Views ensure that front-end presentation code is separated out from the rest of the web application. **Why do you think this might be important?**

A Very Simple View

```ruby
require "sinatra"

get "/" do
  # ... app code ...
  erb :index
end
```

views/simple_view/app.rb

```html
<html>
<head>
    <title>A Simple View</title>
    <link rel="stylesheet" href="style/style.css">
</head>
<body>
    <h1>Simple View Example</h1>

    <img src="images/tuos.png" width="200" />

    <p>Showing how to incorporate CSS and images into the
    pages of your web application.</p>
</body>
</html>
```

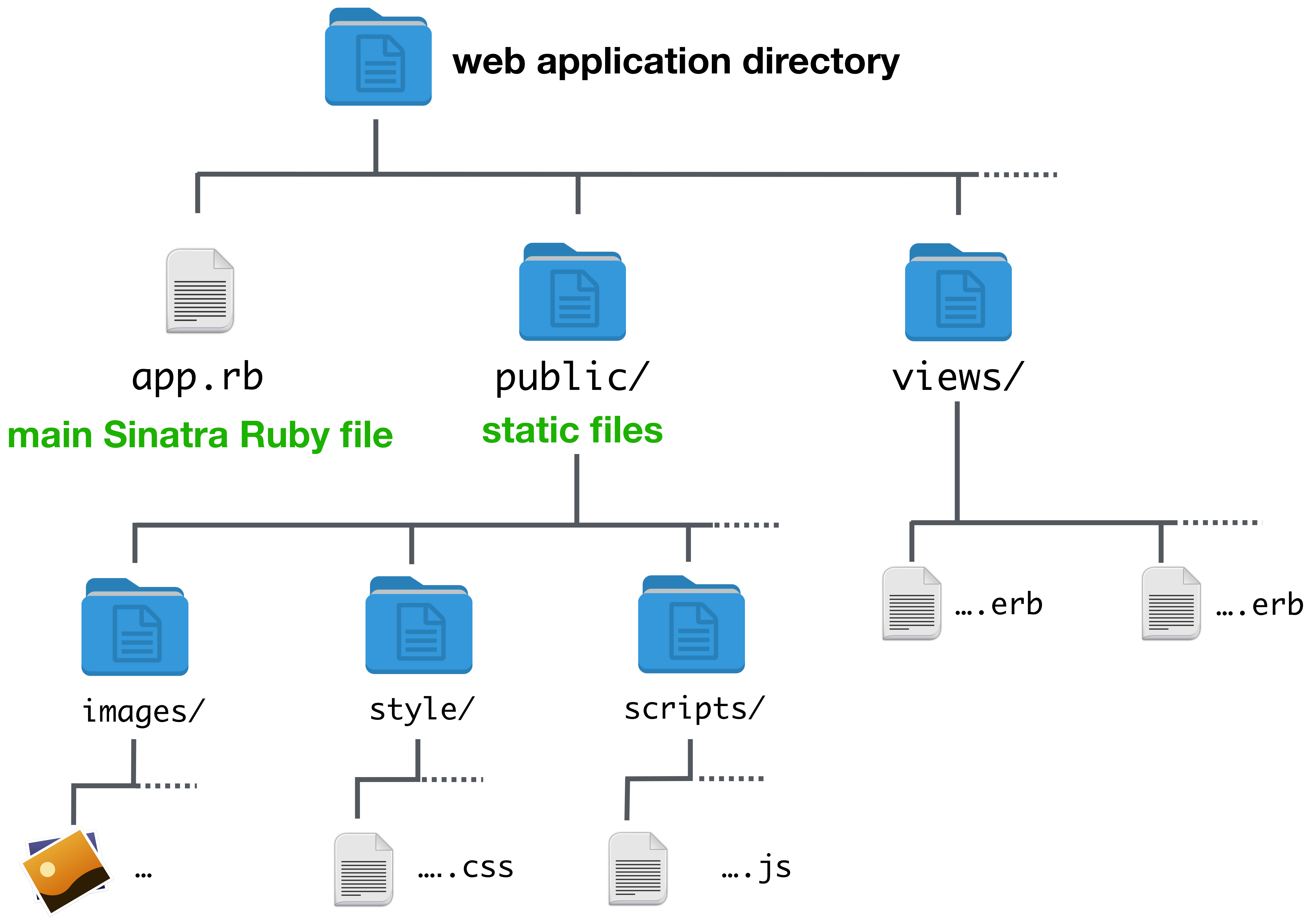
views/simple_view/views/index.erb

The erb method reads in the contents of the the view and returns it as a string.

This is an example of a Ruby **symbol**. A symbol is like a string, except it does not need to be enclosed in quotes and is prefixed with a colon. Symbols help simplify code.

The erb method uses a symbol to look up the file containing the view. Here symbol `:index` tells it to find the file “`views/index.erb`”. Rather than writing the whole filename in the code, we just provide the part that it needs (i.e., “index”), in the form of a symbol.

Views – Where Different Files Live

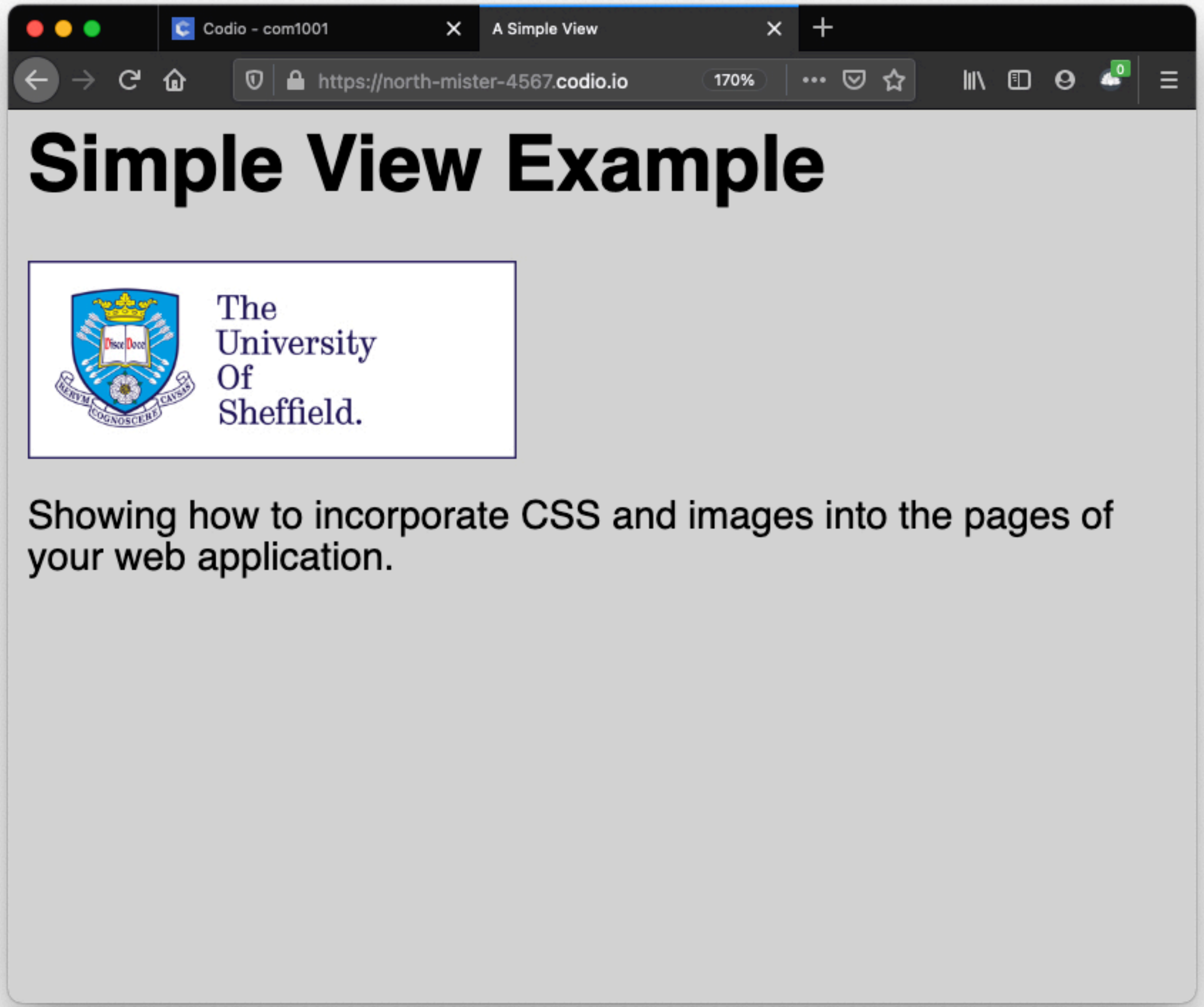


```html
<html>
<head>
    <title>A Simple View</title>
    <link rel="stylesheet" href="style/style.css">
</head>
<body>
    <h1>Simple View Example</h1>

    <img src="images/tuos.png" width="200" />

    <p>Showing how to incorporate CSS and images into the
    pages of your web application.</p>
</body>
</html>
```

This view isn't a template at all, it's more like a regular static HTML file – it doesn't interact with the application code at all. But it can…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A Simple View
https://north-mister-4567.codio.io
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Simple View Example

Showing how to incorporate CSS and images into the pages of your web application.

Advanced Views 1: Variables

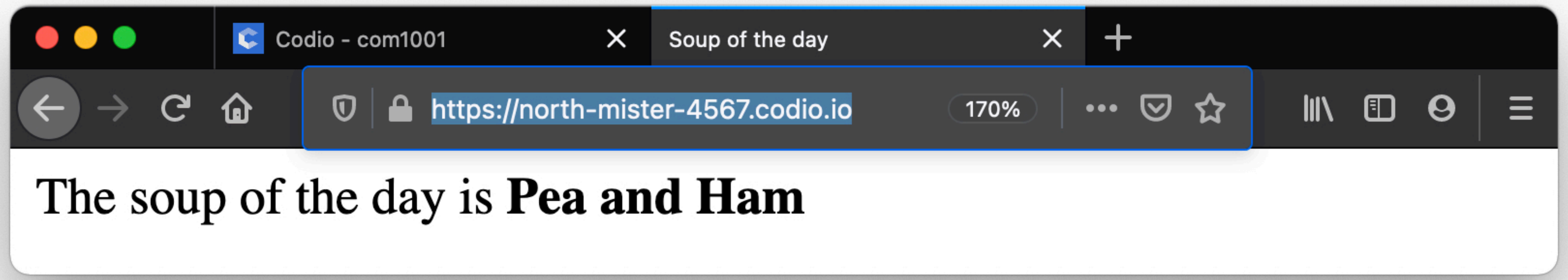
```ruby
require "sinatra"

get "/" do
  @soup = "Pea and Ham"
  erb :index
end
```

views/view_with_variables/app.rb

```erb
<html>
<head>
    <title>Soup of the day</title>
</head>
<body>
    <p>The soup of the day is
    <strong><%= @soup %></strong></p>
</body>
```

views/view_with_variables/views/index.erb



The soup of the day is **Pea and Ham**

Advanced Views 2: Control Structures

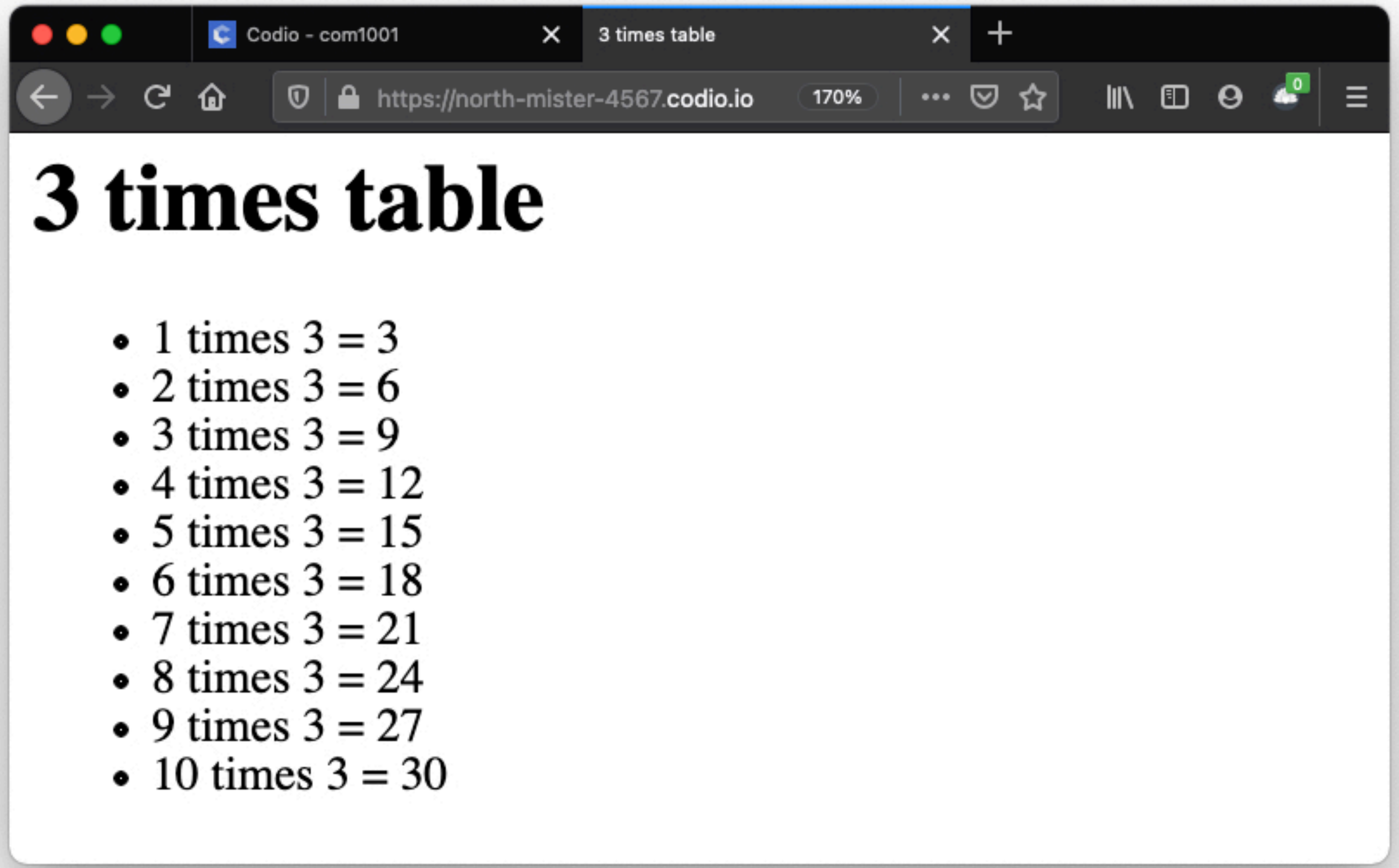
```ruby
require "sinatra"

get "/" do
  @times_table = 3
  @limit = 10
  erb :index
end
```

views/view_with_control_structures/
app.rb

```erb
<% title = "#{@times_table} times table" %>
<html>
<head>
    <title><%= title %></title>
</head>
<body>
    <h1><%= title %></h1>
    <ul>
    <% (1..@limit).each do |i| %>
        <% result = i * @times_table %>
        <li>
            <%= i %> times <%= @times_table %> = <%= result %>
        </li>
    <% end %>
    </ul>
</body>
</html>
```

views/view_with_control_structures/views/index.erb



3 times table

- 1 times 3 = 3
- 2 times 3 = 6
- 3 times 3 = 9
- 4 times 3 = 12
- 5 times 3 = 15
- 6 times 3 = 18
- 7 times 3 = 21
- 8 times 3 = 24
- 9 times 3 = 27
- 10 times 3 = 30

Advanced Views 3:
Views of Views

```
<html>
<head>
    <title><%= @title %></title>
    <link rel="stylesheet" href="style/style.css">
</head>
<body>
    <h1><%= @title %></h1>
    <hr />
```

views/views_of_views/views/common/header.erb

```
require "sinatra"

get "/" do
  @title = "The Current Date and Time"
  erb :index
end
```

views/views_of_views/app.rb

```
<%= erb :"common/header" %>
<p>
  <%= Time.now.strftime("%a %b %d, %I:%M:%S %p") %>
</p>
<%= erb :"common/footer" %>
```

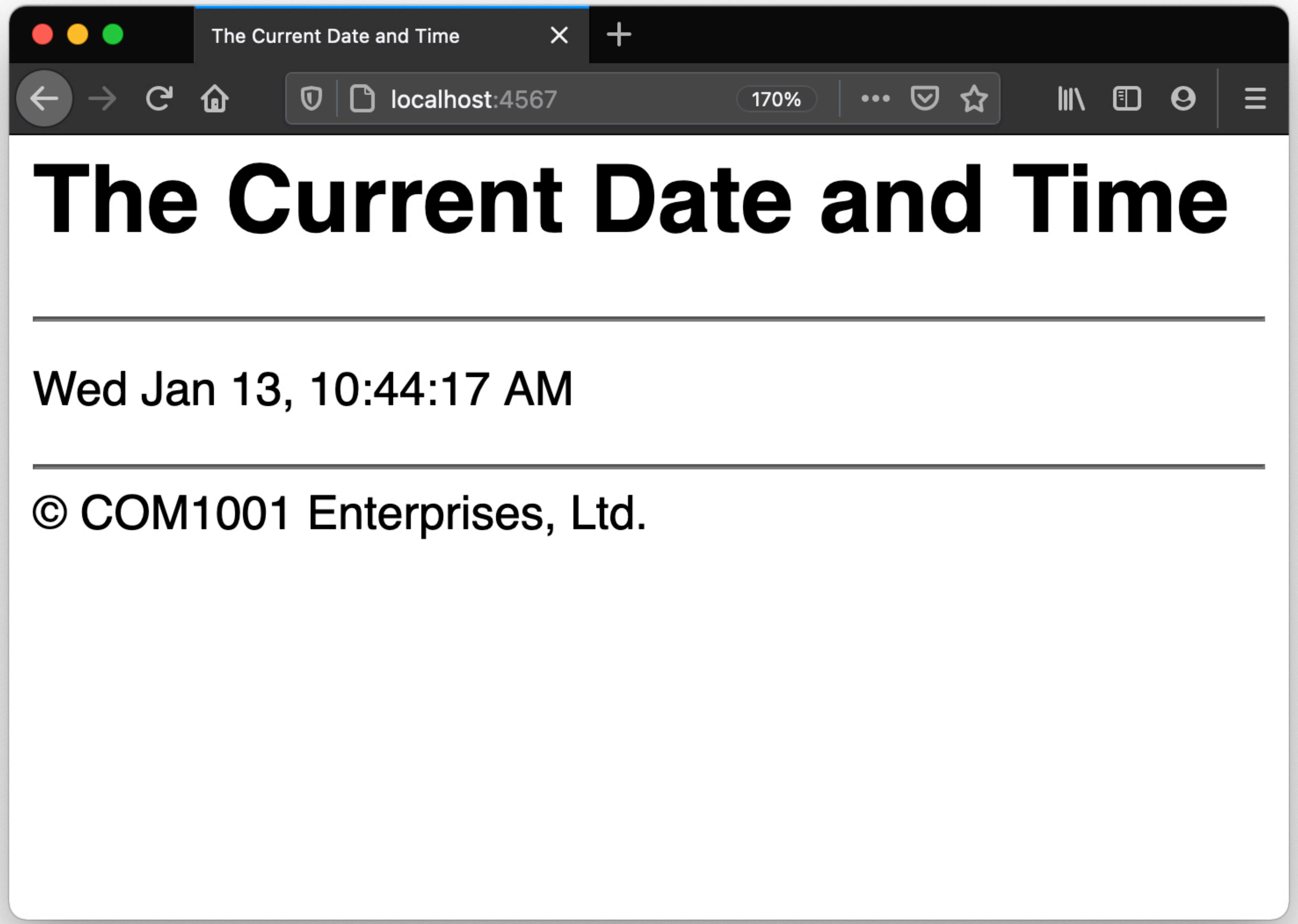
views/views_of_views/views/index.erb

```
<hr />
&copy; COM1001 Enterprises, Ltd.

</body>
</html>
```

views/views_of_views/views/common/footer.erb

This approach allows common elements or widgets to be re-used across an application, rather than copying and pasting the same code. For example, as here, with a standard header and footer. Remember – **Don't Repeat Yourself!**



The Current Date and Time

Wed Jan 13, 10:44:17 AM

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HTML Templating Systems

We’re using **ERB** (which stands for “**E**mbedded **R**u**B**y”)

Other templating systems exist:

- **HAML** (**H**TML **A**bstraction **M**arkup **L**anguage)
- **Liquid** (used by Jekyll, a popular static website generator)
- **Slim**

There’s not much to choose between them, but ERB is arguably the most intuitive, especially if you already know Ruby and HTML.