

HTML Templates

The Problem

- We want to serve custom HTML
- In HW3 you're sending different content based on a cookie being set or not
 - You're doing this using 2 different HTML files
 - What if you wanted to add the value of the cookie to the page itself? Million+ files for each different value?
- In HW3 you're sending different content based on the values sent in a query string
 - Respond with a hard-coded plain text response
 - What if you wanted to send HTML containing these values?

HTML Templates

- Instead of writing complete HTML files
 - Write an HTML template
- AN HTML template is an "incomplete" HTML file that is use to generate complete pages
- Use additional markup to add placeholders in the HTML
- Replace the placeholders with data at runtime

HTML Templates

- Example template with 3 placeholders
- The title, description, and image_filename will be replaced later
 - Provide values for these 3 placeholders to serve a response

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>This page was generated from a template</title>
</head>
<body>

<h1>{{title}}</h1>

<p>{{description}}</p>



</body>
</html>
```

HTML Templates

- To substitute the placeholders
 - Use any string manipulation that gets the job done
 - Find/replace is the simplest solution
 - May want more advanced approaches if you want to add more functionality

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</body>
</html>
```

HW4 Template

- You need a page that will display all uploaded files
 - Add each image as the src in its own img element
- HTML templating is recommended
 - However you can accomplish this is ok for HW4
 - If you build your own template engine with a few features it will serve you well on future assignments!
- General strategy:
 - Write an HTML template with a loop containing an img element with a variable for the src attribute
 - Navigate all the files in your image directory and use the filenames as the content for the loop

Common Template Features

- Loops
- To add loops to your templates
 - Choose syntax for the start and end of the loop

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>This page was generated from a template</title>
</head>
<body>

  {{loop}}
  <h6>{{content_from_data_structure}}</h6>
  {{end_loop}}

</body>
</html>
```

Common Template Features

- Use string manipulation to find the start and end tags
- Iterate over your data
 - Add the contained HTML with the placeholder replaced for each value of your data

```
<!DOCTYPE html>
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<body>

  {{loop}}
  <h6>{{content_from_data_structure}}</h6>
  {{end_loop}}

</body>
</html>
```


Common Template Features

- Conditionals
- Can use similar approach as loops
- Choose syntax for the start and end of each block in the conditional

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <title>This page was generated from a template</title>
</head>
<body>

  {{if cookie_set}}
  <h6>Welcome back!</h6>
  {{else}}
  <h6>Welcome!</h6>
  {{end_if}}

</body>
</html>
```

Common Template Features

- Search for your tags
- Extract and evaluate the conditional
 - Choose how this will be evaluated
- Add the appropriate block of HTML to the page

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</head>
<body>

  {{if cookie_set}}
  <h6>Welcome back!</h6>
  {{else}}
  <h6>Welcome!</h6>
  {{end_if}}

</body>
</html>
```