CSCI 165
Introduction to the Internet and the World Wide Web
Lecture 3: CSS

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Overview

- Focus: Course Introduction
- Architecture: WWW
- Core Ideas:
  1. Basic CSS
  2. Fonts, Colours, Text Styles
  3. Units
  4. Inheritance

P0
Tags

HTML

- Capable of Describing Content
  - `<html>`
    - `<head>`: meta data
    - `<body>`: main content
  - HTML itself doesn't handle styling options, i.e. how each piece of content should look like

Review

CSS

- Cascading Style Sheets
  - Language for providing styling information for HTML
  - HTML provides content, CSS describes what each should look like
  - Including but not limited to: font, font-size, colour, locations, etc.

Concept

CSS Files

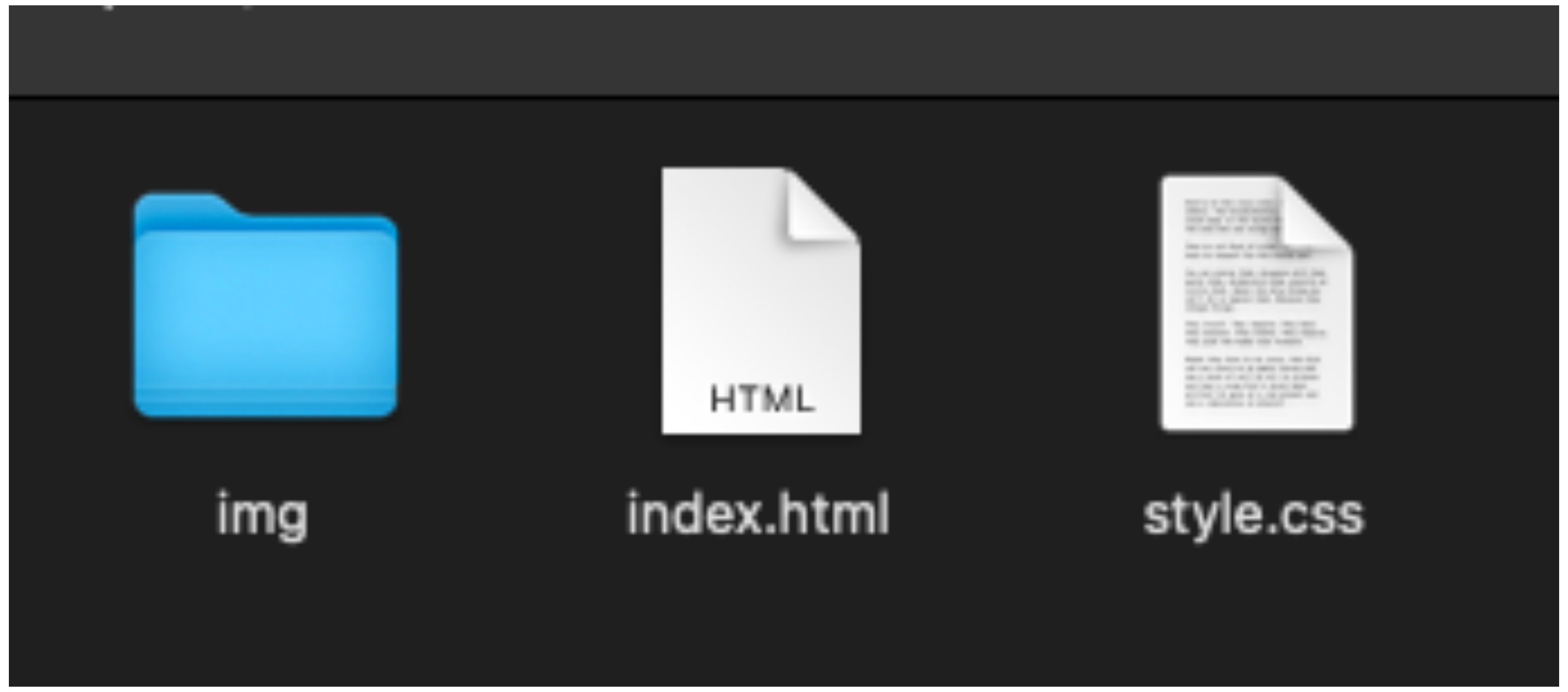
- CSS files like HTML files, are text files
  - HTML uses `.html` extension;
    CSS uses `.css` extension
  - HTML uses tags to describe different elements;
    CSS uses curly brackets

Concept

CSS Files

- Inside your HTML file, inside `<head>`, you will need to add the code on the right
- `<link>` is a tag used to add external resources to an HTML webpage
  - `rel`: relationship
  - `href`: specify the URL of the resource

```
<link rel="stylesheet"
href="style.css"/>
```



Technical

P1
CSS

CSS Files

- Unlike HTML, CSS doesn't need complicated structures
- Individual pieces like tags are described one after another
- In this example, we are changing the `font-style` and `color` of `<h1>` and `<p>`

```
h1 {
   color: red;
}

p {
   font-style: italic;
   color: grey;
}
```

Technical

CSS Files

- `h1`, `p`: selector
  - What are we changing the appearance of?
- `h1 {…}`
  Selects and changes all `<h1>` elements
- `p {…}`
  Selects and changes all `<p>` elements

```
h1 {
    color: red;
}

p {
    font-style: italic;
    color: grey;
}
```

CSS Files

- Inside the bracket
  - property-value pairs are separated by semicolons (and usually newlines)
  - `color` is here a property, for text
  - Indentation: 2 or 4 whitespaces
  - Empty line between selectors
    In this case tag names

```
h1 {
  color: red;
}

p {
  font-style: italic;
  color: grey;
}
```

P2
Text

CSS Text

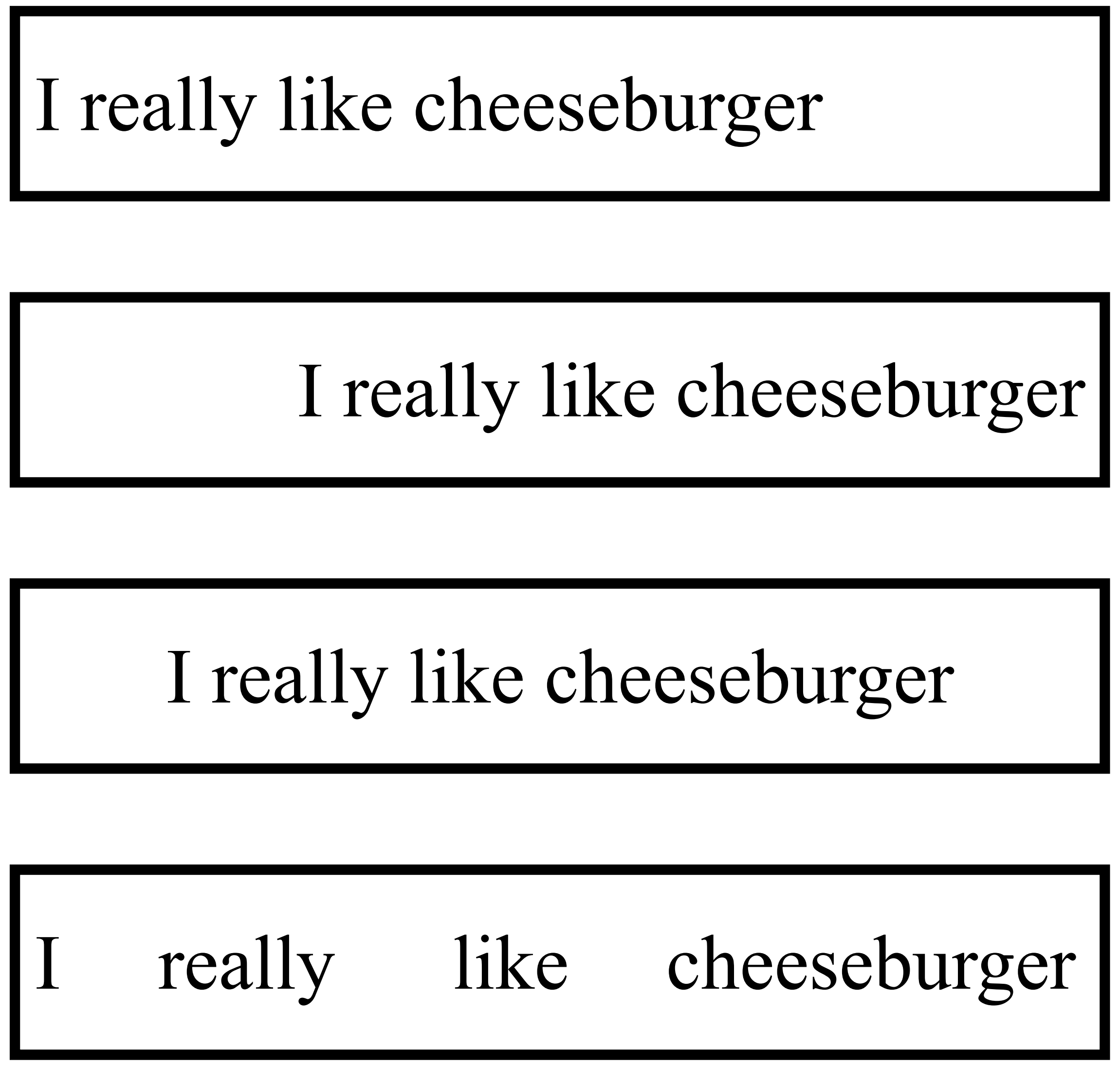
- Properties covered here
  - `font-style`[1]: `normal` or *`italic`*
  - `font-weight`[2]: `normal` or **`bold`**
  - `text-align`[3]: `left`, `right`, `center`, `justify`
  - `font-family`
  - `color`: CSS colour values, colours of text
  - `background-color`: CSS colour values, colours of background

[1] https://developer.mozilla.org/en-US/docs/Web/CSS/font-style
[2] https://developer.mozilla.org/en-US/docs/Web/CSS/font-weight
[3] https://developer.mozilla.org/en-US/docs/Web/CSS/text-align

Concept

`text-align`

- `text-align`: sets horizontal alignment for text
  - `start`, `left`: align to the left
  - `end`, `right`: align to the right
  - `center`: centre alignment
  - `justify`[1]: spread left and right


I really like cheeseburger

I really like cheeseburger

I really like cheeseburger

I really like cheeseburger

[1] Except for the last line

font-family

- This is where you specify the font to use
  - Problem: different computers may have different fonts installed on their system
  - Solution:
    1. Use generic font, supported by all systems and browsers
    2. Use `@font-face`[1] to add custom font from URL

Concept

[1] Not covered in lecture. For reference: https://developer.mozilla.org/en-US/docs/Web/CSS/@font-face

P2
Text

font-family

- Generic `font-family` options
  - This is NOT a complete list
  - Individual system varies[1]
  - Checkout web fonts[2] for more

font-family	example text
serif	example text
sans-serif	example text
monospace	example text
cursive	example text
fantasy	example text

Technical

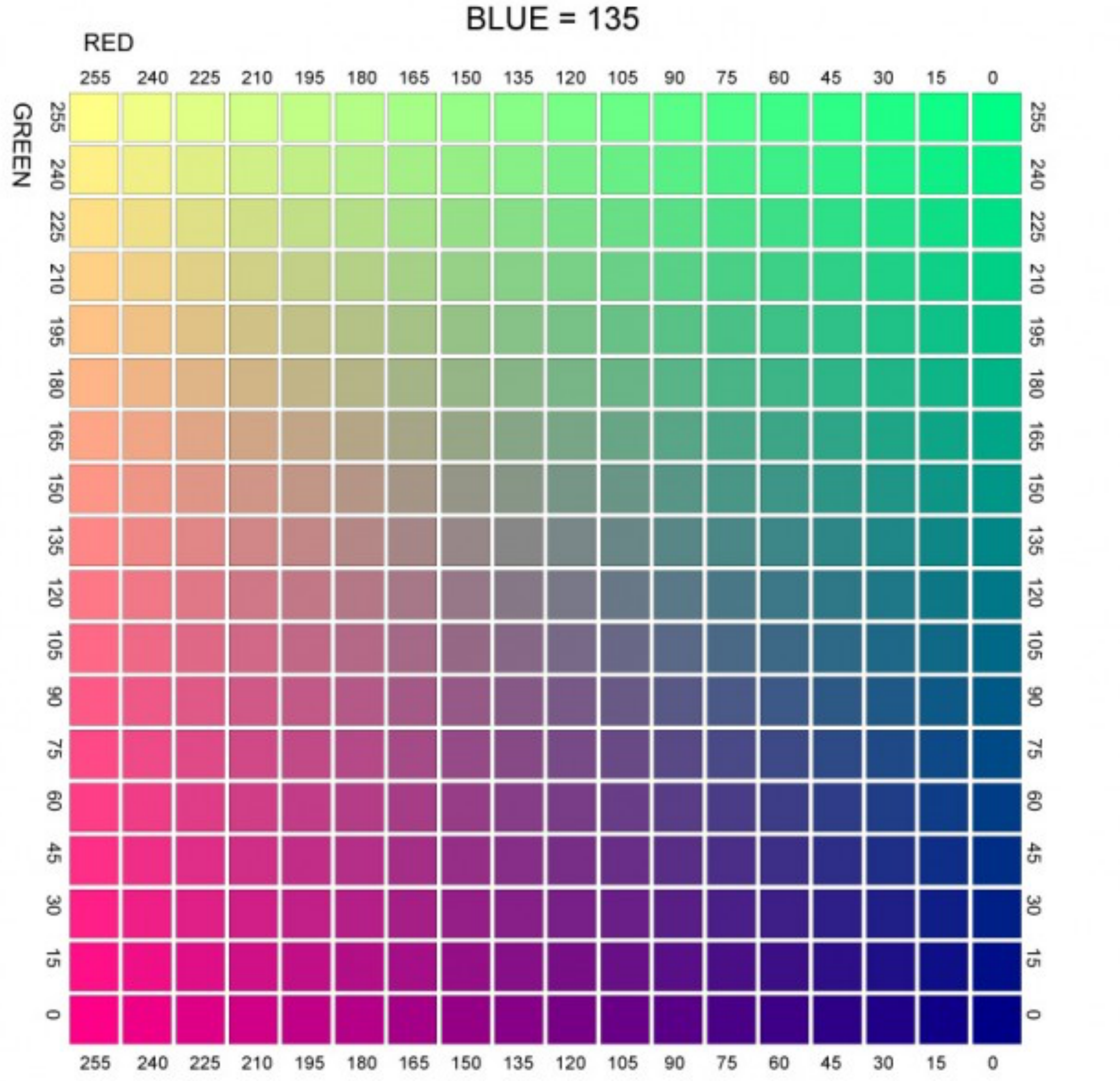
[1] http://fontfamily.io

[2] https://developer.mozilla.org/en-US/docs/Learn/CSS/Styling_text/Web_fonts

P2
Text

Colours

- There are more than a few ways to give colours to `color` and `background-color`
    - Named colours: e.g. `red`, `green`, `aliceblue`, etc.
    - RGB values: e.g. `rgb(255 0 155)`, `#f07`
    - Others: e.g. `light-dark(white, black)`
    - Checkout references to learn more



Technical

1. https://developer.mozilla.org/en-US/docs/Web/CSS/color_value
2. https://dyetrans.com/images/pages/192/192-using-the-rgb-color-palette.jpg

CSS Units

- Physical Length Units: `cm`, `mm`, `in`, `pt`
  - Don’t use these
- Pixels: `px`
  - Works well
- Relative to Window: `vh`, `vw`
  - Measured in percentages, works well
- Relative to font-size: `em`, `rem`

```
h1 {
    font-size: 5vw;
}

p {
    font-size: 17px;
}
```

1. https://developer.mozilla.org/en-US/docs/Learn/CSS/Building_blocks/Values_and_units

Concept

CSS Inheritance

- When no values are explicitly specified for a property
  - **inherited property**: default set to computed value of parent element
  - **non-inherited property**: default set to initial value of the property

Concept

CSS Inheritance

- Here’s an example
  - `<p>` and `<em>` are two different elemtns
  - This `<em>` has a parent element `<p>`
  - `<em>` uses inherited property value for `color` here

style.css

```
p {
  color: red;
}
```

index.html

```
<p>
  a <em>generic</em> sentence
</p>
```

rendered

a *generic* sentence

Technical

CSS Inheritance

- Inheritance can be overwritten
  - You can explicitly overwrite inherited values

style.css (addition)

```
em {
  color: green;
}
```

index.html

```
<p>
  a <em>generic</em> sentence
</p>
```

rendered

a *generic* sentence

Technical

CSS Inheritance

- Inheritance is a complicated issue
  - Next week we'll discuss selectors, which will make things more confusing
  - What can we do to better understand CSS inheritance?
    - Or CSS in general?
      - Use Developer tools!
      - All Developer tools will support showing how CSS gets processed, including inheritance

Concept

P4
Inheritance

Exercise

- The four bigs: Apple, Amazon, Google, Facebook
  - What unit do these companies use to measure font-sizes?
  - What fonts do these companies use?
  - How do these companies define colours for their fext and back-ground colours?

Technical