CS3220 Web and Internet Programming
CSS Basics

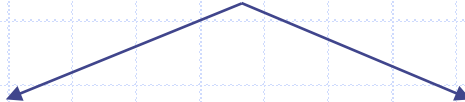Chengyu Sun

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CSS

- Cascading Style Sheets
- A language to describe how HTML elements should be displayed

HTML The Old Way
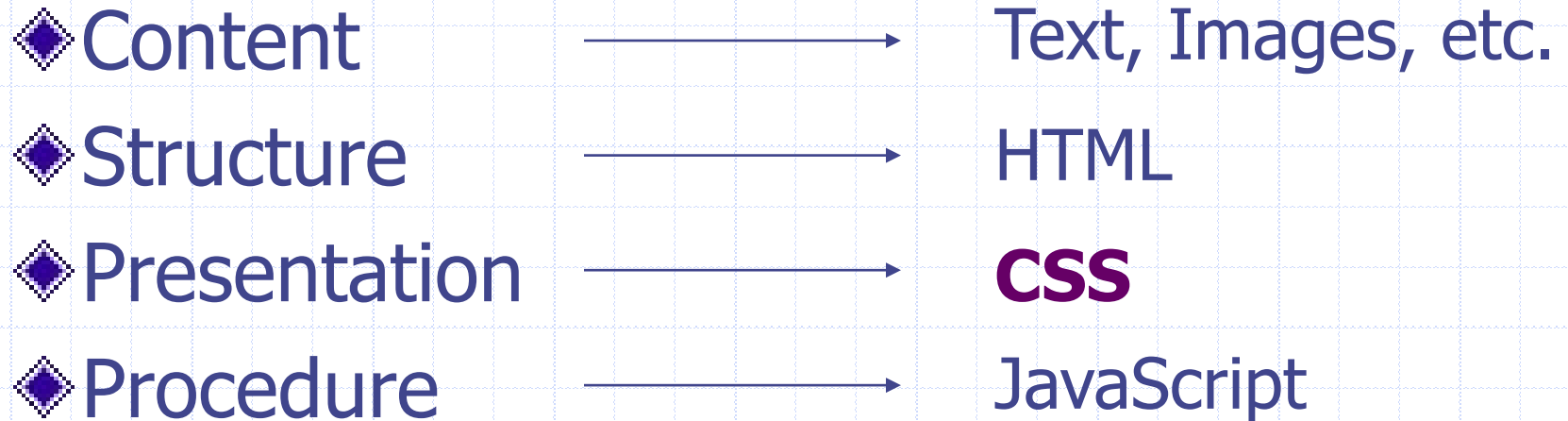
Structural
Element

Presentation
Information

```
<table border="1" cellpadding="2">
```

◆ What if your website has 100 tables?

◆ What if you want to change the look of all the tables?

◆ What if you want the tables to be displayed differently on mobile devices?

Separate Different Aspects of a Web Page

◆ Content   ——————→   Text, Images, etc.

◆ Structure   ——————→   HTML

◆ Presentation   ——————→   **CSS**

◆ Procedure   ——————→   JavaScript

The Benefits of CSS

- It's much easier to create and maintain a consistent style for a website
- It's much easier to adapt the presentation of a website on different media/devices
- Smaller documents lead to faster download and better user experience

A Simple CSS Example

◆ HTML

```
<p>This is a paragraph.</p>
```

◆ CSS Ruleset

```
p {color: red; font-size: 200%;}
```

Anatomy of a CSS Ruleset

Selector   Declaration

```
p {
    color: red;

    font-size: 200%;
}
```

Declaration
Block

Property   Property Value

Three Ways to Include CSS in a Web Page

◆ External stylesheet ⟶ Recommended

◆ Internal stylesheet ⎤
◆ Inline style ⎦ Structure and presentation are not properly separated

Inline Style

```
<p style="color: red; font-size: 200%;">

    Some text.

</p>
```

Internal and External Stylesheet

- ◆ Internal stylesheet

  ```
  <style>
      p {color: red; font-size: 200%;}
  </style>
  ```

- ◆ External stylesheet

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

  Both <link> and <style> should be inside <head>.

Basic Selectors

- By element name
  - p
- By ID
  - #p1
- By Class
  - .blue
- By attribute
  - [name]
  - [type="text"]

- Combining selectors
  - p.blue
  - input[type="text"]
- Multiple selectors
  - h1,h2,h3
  - p,#p1,.blue
- The Universal Selector
  - *

What Happens When Multiple Style Rules Apply? ...

CSS

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

HTML

```
<p class="blue">A paragraph.</p>
```

↑

Red or Blue??

… What Happens When Multiple Style Rules Apply?

- The *Cascading* part of *CSS* determines which rule "wins"
  - Importance
  - Specificity
  - Source order
- The easy way to check is to use the Developer Tools provide by browsers like Chrome and Firefox

Styling Text

- Font and color
- Indentation and alignment
- Transformation and decoration

Font Family

```
font-family: Helvetica, Arial, sans-serif;

font-family: "Courier New", Courier, monospace;
```

- ◆ `font-family` usually includes a list of fonts, and the browser will use the first available font on the list
- ◆ The general convention is to specify a preferred font, a [web-safe font](), and a generic font

Generic Fonts

`serif`	Fonts that have serifs
`sans-serif`	Fonts that don't have serifs
`monospace`	Fonts where every character has the same width
`cursive`	Fonts that are intended to emulate handwriting
`fantasy`	Fonts that are intended to be decorative.

Font Size

Comments in CSS (only /* */, no //)

```
font-size: 16px; /* in pixels */

font-size: 12pt; /* in points */

font-size: 150%; /* as a percent of the parent
                    element's font size */

font-size: 1.5em; /* same as 150% */
```

◆ And some pre-defined font sizes, e.g. small,
medium, large

Common Units of Measure

- `px`: pixels
- `pt`: points; one point is 1/72 of an inch
- `%`: percent relative to the current font
- `em`: one em is equal to the font size for the current font

Colors

```
color: red;  /* using color names */

color: rgb(128, 64, 64);  /* using RGB values */

color: #cd5c5c; /* using hexadecimal value */
```

- `color` is for foreground, `background-color` is for background

About Colors

- More color names in https://www.w3.org/TR/css3-color/
- RGB values are between 0-255
- Hexadecimal values are between 00-FF
- There could be an additional A value for transparency between 0.0 (fully transparent) to 1.0 (fully opaque)

Other Font Properties

- `font-style`: normal, italic, oblique
- `font-weight`: normal, bold, 100-900
- `font-variant`: normal, small-caps
- `line-height`
- `font`: [style] [weight] [variant] size[/line-height] family;

Indentation and Alignment

- `text-indent`: indentation of the first line
- `text-align`: horizontal alignment
  - left, center, right, justify
- `vertical-align`: vertical alignment
  - baseline, top, middle, bottom

Text Transformation and Decoration

- ◆ `text-transform`
  - ■ uppercase, lowercase, capitalize, none
- ◆ `text-decoration`
  - ■ underline, overline, line-through, none