

# Information Technologies

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## Lecture 3 – Overview

### **HTML Elements**

- Recap: Hierarchy of Tags | Block and Inline Elements
- **div | id | class**

### **Cascading Style Sheet = CSS**

- Formatting Rules
- Inline | Internal | External specification of CSS rules

### **CSS Demo**

### **Lectures – Week 3 Content**

<http://comminfo.rutgers.edu/~aspoerri/Teaching/InfoTech/Lectures.html#week3>

# Recap & **New** – Web Basics: HTML Elements & Tags

**HTML** is made up of **elements**

**<tag>Content</tag>**

(read as: open tag, content, close tag)

**Three major elements needed** on HTML page

**<html>** - container for **all of our HTML code**

**<head>** - **put data** for browser and other machines

**<body>** - **put content** to show to the user

**Block-level elements** → take up **own space vertically**

(**<p>**, **<h1-6>**, **<header>** **<nav>**, **<main>**, **<article>**, **<footer>**)

**<div>** page division and used style blocks of content

**Inline-level elements** → placed **inside** other elements

(**<a>**, **<img>**, **<strong>**, **<em>**, ...)

## Page Layout – DIVs

### **Two methods** for creating **Web Page Layout**

- Tables (last lecture)
- **HTML5, DIVs** and **CSS** (this lecture)

### **Structure Your Pages** URL

- Divide **logical sections** of documents into **div elements**

```
pageContent      <div>
  header          <div> header content </div>
  navigation      <div> navigation content </div>
  main content    <div> text/images/links </div>
  footer          <div> text/images/links </div>
                </div>
```

➔ Produces “**linear / natural flow**” of **elements**

# Page Structure – Hierarchy & Naming Elements

## **Hierarchical Structure** of Web pages = **DOM**

- Elements contained inside another element (latter = parent, former = child)

```
<html>
  <body>
    <div>
      page content
    </div>
  </body>
</html>
```

## **Naming Elements**

- **id="name"** can be applied only once → **unique**

**#idName {...}** define CSS rule

- **class="name"** can be applied **many times**

**.className {...}** define CSS rule

Useful with **div** (content blocks) and **span** (inline text) **elements**

# Page Layout – HTML5

## Structure Your Pages [URL](#)

- Use **tags** that **represent meaning** of content elements

<b>pageContent</b>	<b>&lt;div id="pageContent"&gt;</b>
<b>header</b>	<b>&lt;header&gt;</b> text/images/links <b>&lt;/header&gt;</b>
<b>navigation</b>	<b>&lt;nav&gt;</b> text/images/links <b>&lt;/nav&gt;</b>
<b>main content</b>	<b>&lt;main&gt;</b> text/images/links <b>&lt;/main&gt;</b>
<b>footer</b>	<b>&lt;footer&gt;</b> text/images/links <b>&lt;/footer&gt;</b>
	<b>&lt;/div&gt;</b>

# CSS

## **Cascading Style Sheets = CSS**

- Collection of **Formatting Rules**
- **Control Appearance** of web page: blocks and text
- **Ensure** a more **Consistent Treatment of Page Layout** and **Appearance** in **Browsers**
- **Separation** of **Content** from **Presentation**
  - **Easier to Maintain Appearance** since **Make Change** in **Single Location**
  - **Simpler and Cleaner HTML code** → shorter loading times

## CSS (cont.)

### **Cascading Style Sheets (CSS)**

- **Control Text properties**

Specific fonts and font sizes; bold, italics, underlining, and text shadows; text color and background color; link color and link underlining; etc.

- **Control Format & Position of Block-level Elements**

Set margins and borders for block-level elements; position them in a specific location; add background color; float text around them; etc.

- **Responsive Layouts:** based on Browser width.

- **Easy** to apply **Same Layout** to **Whole Site** and only need to **modify external CSS file**.



## CSS (cont.)

### **CSS Style Sheet** stored

#### **a) External** CSS style sheet

(.css file linked to page and using a link or an @import rule in the *head section* of a document).

#### **b) Internal** (or embedded) CSS style sheet

(included in style tag in *head portion* of an HTML document).

#### **c) Inline styles**

(defined within specific tag instance in HTML document)

Using Inline styles is **not recommended**.

### **CSS Rule = Selector and Block of Declarations**

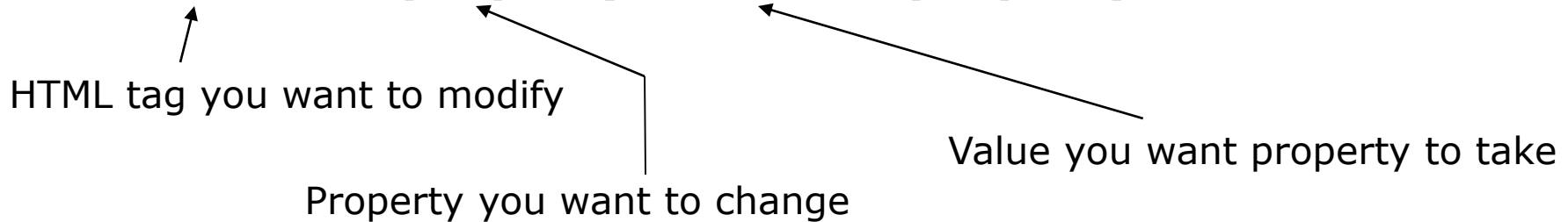
Enclosed by **{...}** brackets and separated by **;**

### **Declaration = Property: Value;**

# CSS – General Structure of CSS Rule

## **Basic syntax** for Internal and External CSS:

**selector {property1: value1; property2: value 2;}**



**p { text-align: left;  
color: black;  
font-family: Arial; }**

causes

Font to be **left-aligned**

Font to be **Arial and black**

# CSS Rules – **id** and **class** Rules in **Internal Style Sheet**

```
<head>
```

```
<style>
```

```
/* Comment: pageContent ID and define font to use for page and the top  
and left margins as well page width. This pageContent div contains all the  
other divs */
```

```
#pageContent {
```

```
font-family: Verdana, Geneva, sans-serif;
```

```
font-size: 12px;
```

```
margin-top: 10px;
```

```
margin-left: 50px;
```

```
width: 500px;
```

```
}
```

```
/* blue text class */
```

```
.blueText {
```

```
color: #009;
```

```
}
```

```
</style>
```

```
</head>
```

## CSS Rules – **id** and **class** Rules Applied in <body>

```
<body>
```

```
  <div id="pageContent">
```

```
    <div id="content">
```

```
      <h1>Heading1</h1>
```

```
      <p class="blueText">Open paragraph</p>
```

```
    </div>
```

```
  </div>
```

```
</body>
```

## Location of CSS Style Definition

**Inline style** (causes only the tag to have desired properties)

```
<p style="font-family:Arial; color:blue">Something blue </p>
```

**Internal stylesheet** (specific to a document)

- Causes **all tags** in document to have property
- **<style>** tag **inside <head>** tag of document

```
<head>  
  <style>  
    p { font-family:Arial; color:blue;}  
  </style>  
</head>
```

**External stylesheet** (can control multiple documents)

- Ensure **consistent appearance** of website

```
<head>  
  <link rel="stylesheet" href="mystyle.css" type="text/css" />  
</head>
```

CSS – Cascade of How Rules are Applied

## **Style Rules “Cascade” from broad to narrow:**

- **Browser’s** Default Behavior
  - **External** Style Sheet
    - **Internal** Style Sheet
      - **Inline** Style

# CSS Demo – Step 1

## Step 1

- **Download “startPage.html”** from <http://comminfo.rutgers.edu/~aspoerri/Teaching/InfoTech/Lectures/Lec3/Steps>
- **Save “startPage” as “page1.html”** in folder “week3”
- Create **div structure** and Assign **id name** to div  
pageContent
- Create **html5 structure**  
header, nav, main, footer

# CSS Demo – Step 2

## Step 2

- **Create Internal CSS Style Sheet**

```
<style>
```

- **Create CSS Rule for id="pageContent"**

```
font-family: Verdana, Geneva, sans-serif;
```

```
font-size: 12px;
```

```
margin-top: 10px;
```

```
margin-left: 50px;
```

```
width: 500px;
```

- **Create CSS Rule for class="blueText"**

```
color: #009;
```



# CSS Demo – Step 3

## Step 3

- **Create CSS Rule <header>**

```
font-size: 9px;  
border-bottom-width: thin;  
border-bottom-style: solid;  
border-bottom-color: #333;
```

- **Create CSS Rule <nav>**

```
font-size: 14px;  
background-color: #E1E3F7;  
padding: 5px;  
margin-top: 5px;
```

# CSS Demo – Step 4

## Step 4

- **Create CSS Rule** for **<main>**

font-size: 12px;

- **Apply class="blueText"**

<p> tag inside main element

- **Create CSS Rule** for **<footer>**

font-size: 10px;  
border-top-width: thin;  
border-top-style: solid;  
border-top-color: #666;