SOEN 287
WEB PROGRAMMING

Cascading
Style
Sheets

Topics

- **What is CSS?**
- Levels of CSS
- Selectors
- Property Values
  - Fonts/Colors
  - Links
  - Lists
  - Alignment of text
  - Box Model
  - `<span>` vs `<div>`
- Web Design Strategies

Cascading Style Sheet (CSS)

- Style language to describe look and format of a document

- Allows for separation of document content from document presentation

- Can specify presentation styles and associate them with markup elements in webpage

- HTML
  - Was not intended to contain tags for formatting
  - Was designed to define content of a document (h1, p, …)

Cascading Style Sheet (CSS) ...

- HTML 3.2 - tags like <fonts>, and color attributes were added (nightmare for web developers)

- HTML 4.0 - creation of CSS, so all formatting could be removed from the HTML document & stored in a separate file (.css)

- Can change the appearance and layout of all pages in a Web site by editing one file.

Webpage = HTML5 code + CSS code

Benefits of Using CSS

- Code will be reused, as the same style may apply to many elements in many pages

- You can create multiple style sheets and hence have different skins for your website that can change how the website looks and even behaves.

- Editing styles and/or finding and fixing styling errors will be easier, as styles are centralized .

- Content and display are separated so the data becomes easier to read automatically.
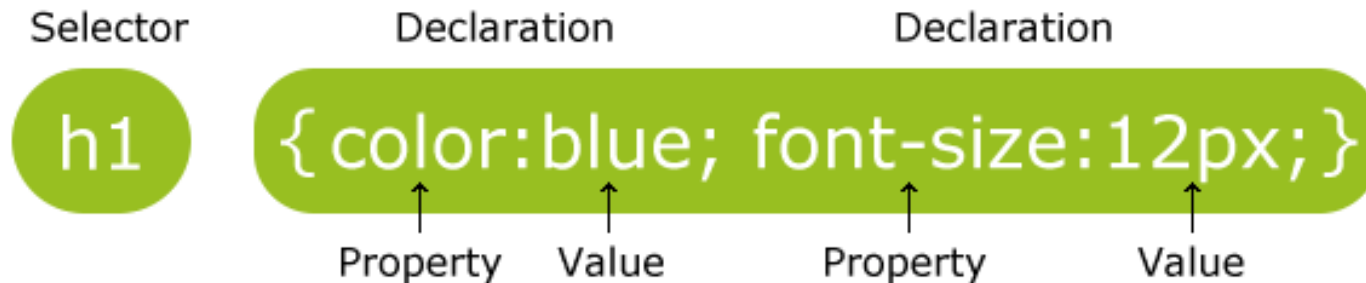
Topics

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CSS
Cascading Style Sheet

Levels of Style Sheets

- Inline
  - Given for a specific occurrence of a tag and apply only to that tag
  - defeats the purpose of style sheets - uniform style
  - W3C deprecated inline style in 2001

- Document-level style sheets
  - apply to the whole document in which they appear
  - Styles defined in the head section

- External style sheets
  - can be applied to any number of documents
  - Specify style sheet to use in the head section
- An external style sheet can be written in any text editor. The file must not contain any HTML code, and must be saved with a .css extension.

CSS Syntax

Selector — h1

Declaration — { color:blue; font-size:12px;}

Declaration

Property — color   Value — blue   Property — font-size   Value — 12px

- Selector = HTML element want to style

- Declaration
  - property and value
  - Always ends with a semicolon (;)
  - Example: CSS_Ex1.html

- CSS Comments in the form /* ….. */

Examples

1. Inline

   Use this method sparingly

   ```
   <p style="color:red;margin-left:20px;">This is a
   paragraph.</p>
   ```

2. Document level

   Selector

   ```
   <head>
   <style type="text/css">
   h1 {color:red;}
   p {margin-left:20px;}
   body {background-image:url("images/back40.gif");}
   </style>
   </head>
   ```

Example (Continued)

3. Using an external Style Sheet

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

Relationship: link to an external sheet

• Inside the style sheet: mystyle.css

```
h1 {color:red;}
p {margin-left:20px;}
body {background-image:url("images/back40.gif");}
```

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CSS
Cascading Style Sheet

Simple/Element Selector

- tag names {property_1: value_1; property_2:value_2; …}

  `ex: h1 {color: white;}`

selector	h1
declaration	`{color:white;}`
property	color
value	white

- Selectors can be grouped as in

  `h1, h2, h3 {color: green;}`

- Declarations can be grouped as in

  `h1 {color: white; background-color: black;}`

Class selectors

```
p.normal {property-value list}
p.warning {property-value list}
```

```
<p class = "normal">
 A paragraph in 'normal' presentation style
</p>
```

```
<p class = "warning">
 A paragraph in 'warning' presentation style
</p>
```

```
<p>
   A paragraph with no style
</p>
```

Generic selectors

```
.sale {property-value list}
```

```
<h1 class = "sale"> Weekend Sale </h1>
<p class = "sale"> … </p>
```

http://www.w3schools.com/Css/tryit.asp?filename=trycss_syntax_class

id selectors

```
#section14 {font-size: 20;} ✔

h2#section14 {font-size: 20;} ✔

p#section14 {font-size: 20;} ✗
```

```
<h2 id = "section14"> 1.4 Calico Cats </h2>
```

http://www.w3schools.com/Css/tryit.asp?filename=trycss_syntax_id

Selectors: on their own, generic & id

```
<style>
   ……..
   h1    {font-size:XX-large;color:yellow;text-align:center;}
   h2    {font-size:x-large;color:purple;}
   p     {margin-left:10px;}
   .warning {color:red;}
   #section14 {color:white;}
</style>
```

CSS_Ex3.html

```
<body>
    <h1>This header is xx-large pt</h1>
    <h2>This header is x-large & purple</h2>
    <h2 id = "section14"> section 14  with id</h2>
    <h2 class = "warning"> section 14  with
warning</h2>
    <p>This paragraph has a left margin of 100
pixels</p>
    </body>
```

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How to give property values

- *Length* - numbers, maybe with decimal points

  - Units:
    - ○ Not Scalable:
      - ▪ `px` – pixels
      - ▪ `pt` – points

	body { font-size: 100%; }	body { font-size: 120%; }
font-size: 1em	The quick brown fox	The quick brown
font-size: 12pt	The quick brown fox	The quick brown fox
font-size: 16px	The quick brown fox	The quick brown fox
font-size: 100%	The quick brown fox	The quick brown

© KyleSchaeffer.com

    - ○ Scalable
      - ▪ `em` – 1em is equal to the current font size.
      - ▪ `%` - % of the current font size

Note: No space between the number & the unit

`1.5em` ✔   `1.5 em` ✘

How to give property values …

- Colors:
  1. Color name: `red green pink` …

  2. `rgb(`n1, n2, n3`)`
     Numbers can be decimal or percentages

  3. Hexadecimal form: #XXXXXX

- Handy Sites for colors:
  - http://www.w3schools.com/cssref/css_colors.asp
  - http://paletton.com/#uid=14B110klHm3kb8Clzg2lLrYmDCO

Example

```
<!DOCTYPE html>
<html>
<head>
<style>
#p1 {background-color:#ff0000;}   //Red
#p2 {background-color:#00ff00;}  //Green
#p3 {background-color:#0000ff;}  //Blue
#p4 {background-color:#ffff00;}    //Yellow
#p5 {background-color:rgb(255,0,255);}</style>

</head>

<body>
<p>HEX colors:</p>
<p id="p1">Red</p>
<p id="p2">Green</p>
<p id="p3">Blue</p>
<p id="p4">Yellow</p>
<p id="p5">Cerise</p>
</body>
</html>
```

Font Property: `font-family`

```
font-family: Arial, "Arial Black", Futura, serif
```

- Value is a list of font names - browser uses the first in the list it has

- Generic fonts: `serif`, `sans-serif` and `monospace` (defined in CSS)
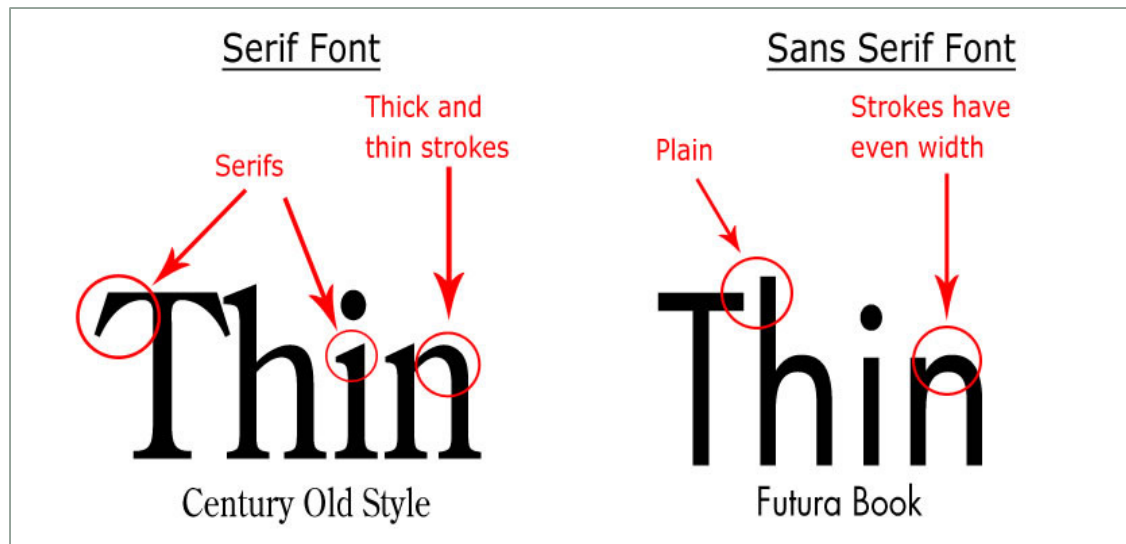
font-family:serif
font-family:sans-serif
font-family:cursive
font-family:fantasy
`font-family:monospace`

http://www.yourinspirationweb.com/en/why-typographically-thinking-ruins-your-site-second-part/

Font-family: Examples

- Samples of [serif](#) typefaces
- Samples of [sans-serif](#) typefaces
- Samples of cursive typefaces (let you play ...)
- Samples of [monospaced](#) typefaces

http://www.gngcreative.com/newsletters/nl9.html

Font Property: `font-size`

```
font-size: 10pt
```

- Possible values: a length number (px, pt), a %, an em or a name, such as `xx-small, x-small, small,` `medium, large,` `x-large` and `xx-large,` etc

Font Property: `font-variant`

```
font-variant: small-caps
```

- Default is `normal,` but can be set to `small-caps`

Font Property: `font-style`

```
font-style: italic
```

- Possible values: `italic, oblique (useless), normal`

Font Property: `font-weight`

```
font-weight: bolder
```

- Possible values: `bolder, lighter, bold, normal`
- Could specify as a multiple of 100 (100 – 900)
  (400 is normal, 700 is bold)

Font Shorthand: `font`

```
font:  italic  bolder  14pt  Arial,serif
```

- Order must be: style, weight, **size, name(s)**

Font Property: `text-decoration`

```
text-decoration: line-through
```

- **Possible values:** `line-through, overline, underline, none`

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CSS

Cascading Style Sheet

Link Styles

- Can style links differently depending of state in (color, background etc…)

- Link states:
  - `a:link` - a normal, unvisited link
  - `a:visited` - a link the user has visited
  - `a:hover` - a link when the user hovers over it
  - `a:active` - a link the moment it is clicked

Link Style: Example 1

```
<head>
  <style>
    a:link {color:#FF0000;}    /* unvisited link */
    a:visited {color:#00FF00;} /* visited link */
    a:hover {color:#FF00FF;}   /* mouse over link */
    a:active {color:#0000FF;}  /* selected link */
  </style>
</head>
```

LinkDemo.html

Note:
1. `a: hover` MUST come after `a:link` and `a:visited`
2. `a:active` MUST come after `a:hover`

Link Style: Example 2

- To remove the underline:

```
a:link {text-decoration:none;}
```

- A more elaborate example:

http://www.w3schools.com/css/tryit.asp?filename=trycss_link2

What is color & style of head header?

colors.css

```
h1 {color:blue; font-style:italic;}
```

color.html

```
<link rel="stylesheet" type="text/css" href="colors.css" />
    <style type="text/css" >
        h1.pink {color:hotpink;}
        h1.normal{font-style:normal}
    </style>
<body>
    <h1> Heading 1 </h1>
    <h1 class="pink"> Heading 2</h1>
    <h1 class="normal"> Heading 3</h1>

</body>
```

What is color & style of head header?

colors.css

```
h1 {color:blue; font-style:italic;}
```

color.html

```
<link rel="stylesheet" type="text/css" href="colors.css" />
    <style type="text/css" >
        h1 {color:limegreen;}
        h1.pink {color:hotpink;}
        h1.normal{font-style:normal}
    </style>
<body>
    <h1> Heading 1 </h1>
    <h1 class="pink"> Heading 2</h1>
    <h1 class="normal"> Heading 3</h1>

</body>
```

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List Properties: `list-style-type`

- Possible values for <u>unordered</u> lists: `disc, square, circle` or `none`

```
<style type = "text/css">
     ul {list-style-type: square;}
</style>
```

http://www.w3schools.com/cssref/playit.asp?filename=playcss ul list-style-type&preval=disc

https://www.w3schools.com/css/tryit.asp?filename=trycss list-style-type_ex

List Properties: `list-style-type`

- Possible values for <u>ordered</u> lists: `decimal, decimal-leading-zero, lower-alpha, upper-alpha, ...`

```
<style type = "text/css">
      ol {list-style-type: upper-roman;}
</style>
```

http://www.w3schools.com/cssref/playit.asp?filename=play
css ol list-style-type&preval=armenian

What do you think…?

```
<style type = "text/css">
ol {list-style-type: upper-roman;}
___ {list-style-type: upper-alpha;}
___ {list-style-type: decimal;}
</style>
```

- Fill the first blank line with a proper selector
  - A. ol
  - B. li
  - C. ol ol
  - D. ol, li
  - E. ol ol ol

I. First level list - item 1
   A. Second level list - item 1
      1. 3rd level list - item 1
      2. 3rd level list - item 2
   B. Second level list - item 2
      1. 3rd level list - item 1
      2. 3rd level list - item 2
II. First level list - item 2
   A. Second level list - item 1
      1. 3rd level list - item 1
      2. 3rd level list - item 2
   B. Second level list - item 2
      1. 3rd level list - item 1
      2. 3rd level list - item 2

What do you think…?

```
<style type = "text/css">
ol {list-style-type: upper-roman;}
___ {list-style-type: upper-alpha;}
___ {list-style-type: decimal;}
</style>
```

I. First level list - item 1
  A. Second level list - item 1
    1. 3rd level list - item 1
    2. 3rd level list - item 2
  B. Second level list - item 2
    1. 3rd level list - item 1
    2. 3rd level list - item 2
II. First level list - item 2
  A. Second level list - item 1
    1. 3rd level list - item 1
    2. 3rd level list - item 2
  B. Second level list - item 2
    1. 3rd level list - item 1
    2. 3rd level list - item 2

- Fill the second blank line with a proper selector

  A. ol
  B. ol ol
  C. ol, li
  D. li li
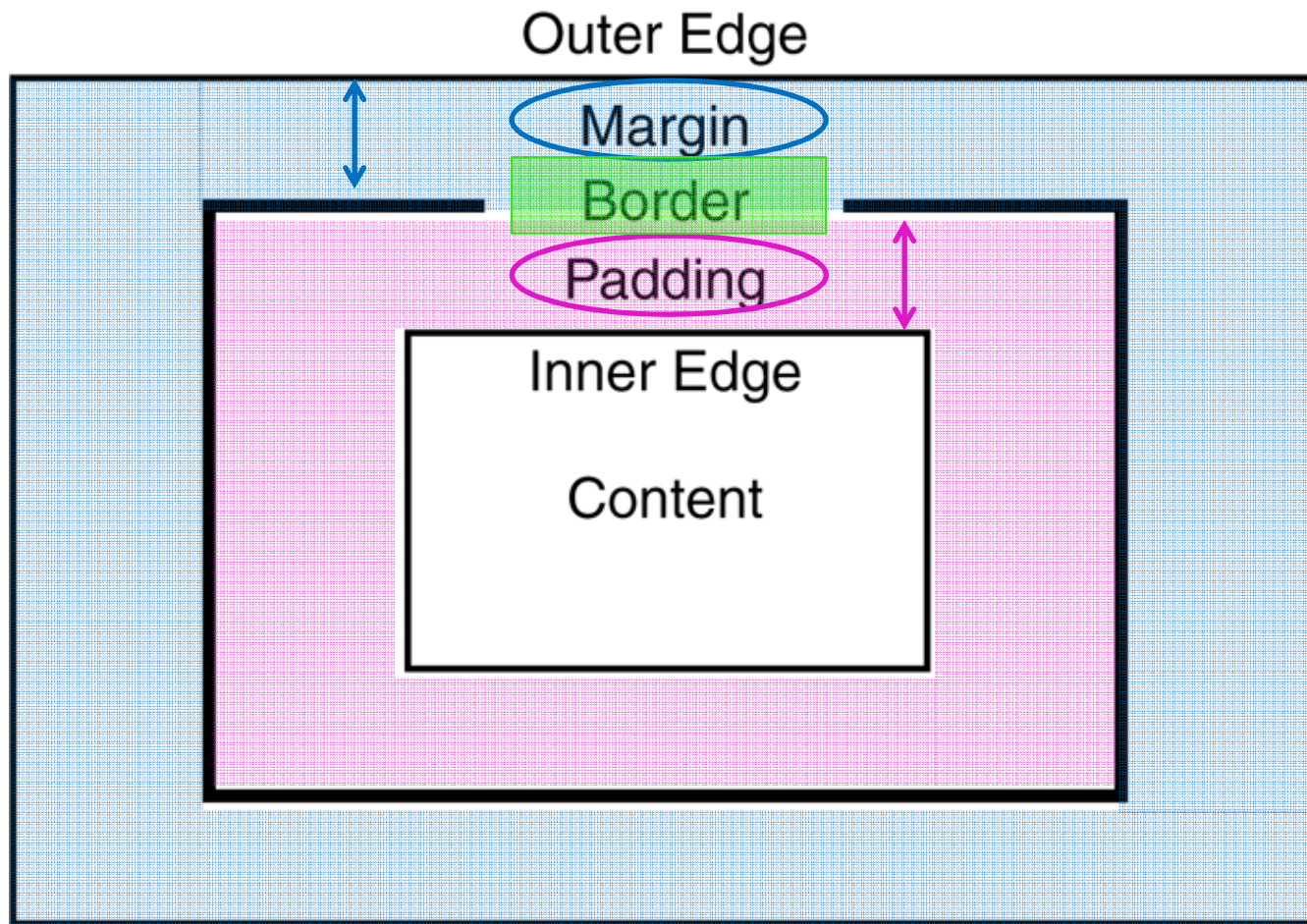 E. ol ol ol

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CSS
Cascading Style Sheet

Alignment: `text-indent`

- Specifies the indentation of the first line in a text-block
- Possible values: a length or a % value

```
<style type = "text/css" >
    p.indent1 {text-indent:0.5in;}
    p.indent2 {text-indent:5.5cm;}
    p.indent3 {text-indent:5em;}
    p.indent4 {text-indent:50px;}
    p.indent5 {text-indent:20%;}
</style>
```

Alignment: `text-align`

- Horizontal alignment of text
- Possible values: `left` (the default), `center`, `right`, or `justify`

```
<style type="text/css">
    h1 {text-align:center;}
    h2 {text-align:left;}
    h3 {text-align:right;}
</style>
```

textAlign_textIndent.html

Alignment: `float`

```
<style type="text/css">
     img {float: right;}
</style>
```

- Text flow around another element (usually image or table)
- Possible values: `left`, `right`, and `none` (the default)

`float: clear;`

To turn float off once it has been turned on.

images.html

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The Box Model

For borders and outlines

Border: `style/color/width`

- When providing values the order is clockwise from top.
- If provide

  - 4 values refers to top, right, bottom, and left
  - 3 values refers to top, left-right, and bottom
  - 2 values refers to top-bottom and left-right
  - one value refers to all sides

-

Border: `style/color/width/collapse`

- `border-`**`style`** values: `none, dotted, dashed, double` and …
  http://www.w3schools.com/cssref/tryit.asp?filename=trycss_border-style

  - `border-top-style`
  - `border-bottom-style`
  - `border-left-style`
  - `border-right-style`

  Can write
  ```
  p
  {
  border-top-style:dotted;
  border-right-style:solid;
  border-bottom-style:dotted;
  border-left-style:solid;
  }
  ```
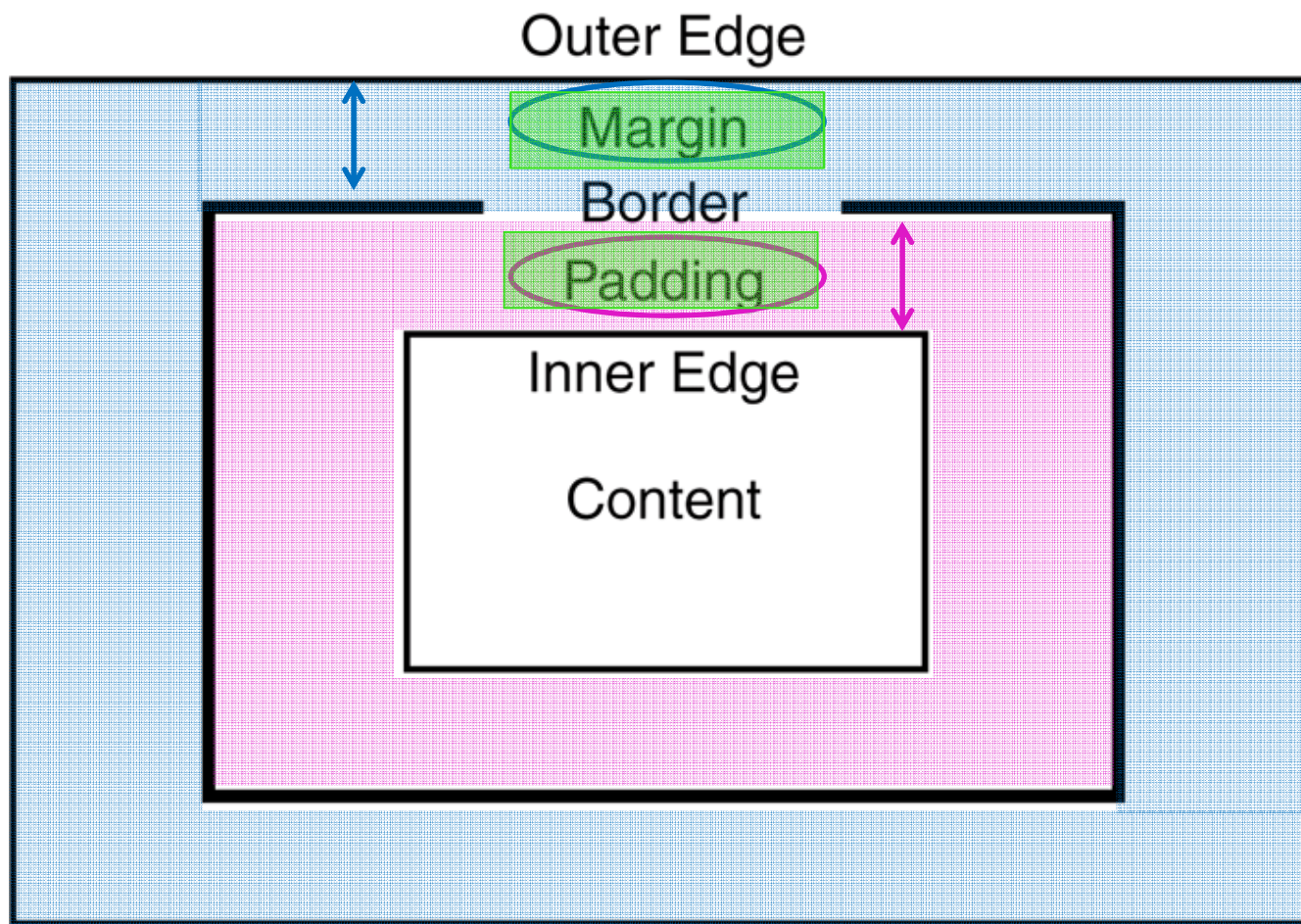
  Or
  ```
  p
  {
  border-style:dotted solid;
  }
  ```

Border: `style/color/width/collapse`

- `border-`**`width`** values: `thin,` `medium` (default), `thick,` or a length value in pixels
  - `border-top-width, border-bottom-width, border-left-width, border-right-width` or `border-width`

- `border-`**`color`** values: any color
  - `border-top-color, border-bottom-color, border-left-color, border-right-color` or `border-color`

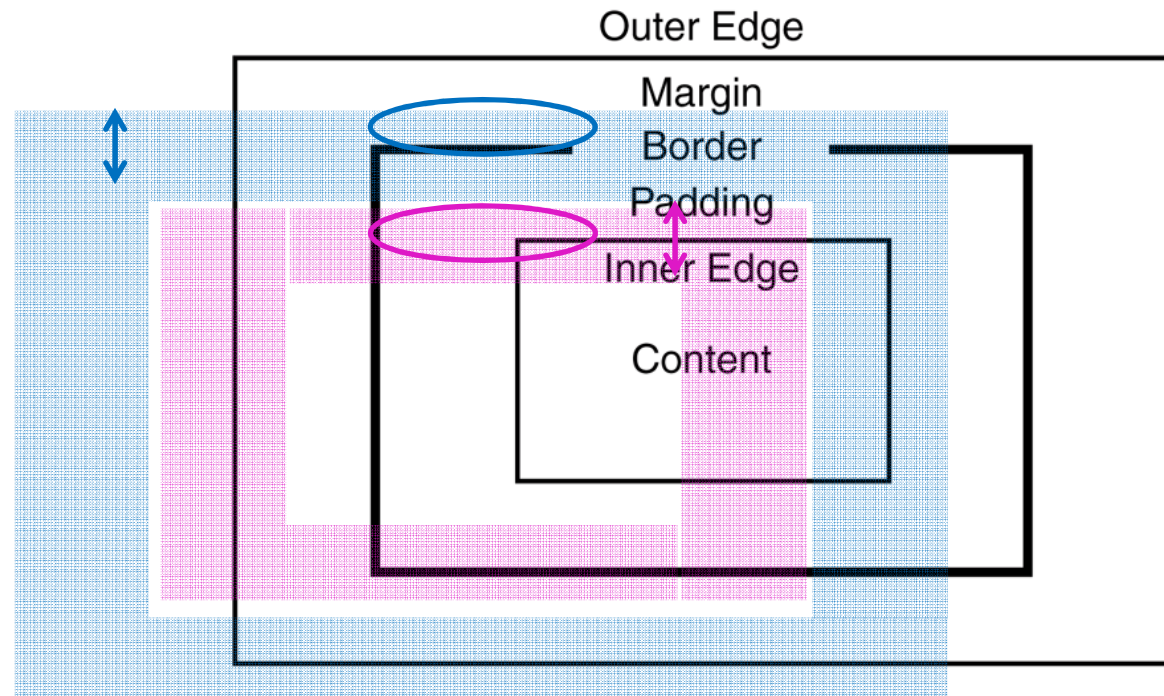- **`border-collapse`** values: `separate` (default) or `collapse`

<div style="border:1px solid gray; color:green; font-weight:bold">borders.html</div>

The Box Model

The Box Model

What is total <u>height</u> if have the following specifications?

```
height: 200px;
width:100px;
padding: 10px;
border: 5px solid gray;
margin: 20;
```
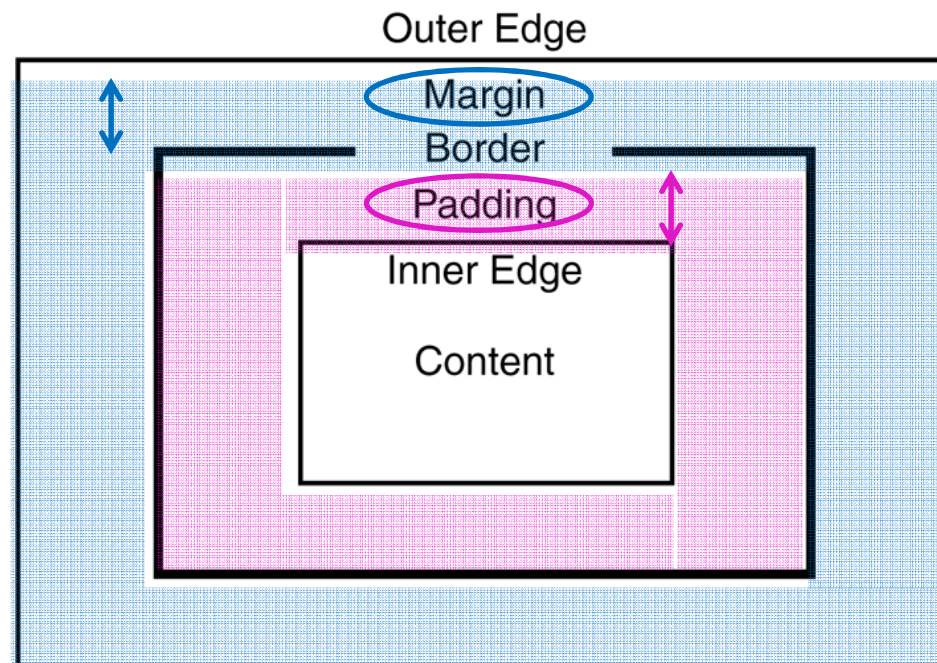
Important: When you set the width and height properties of an element with CSS, you just set the width and height of the **content area**. To calculate the full size of an element, you must also add padding, borders and margins.

The Box Model

What is total <u>width</u> if have the following specifications?

```
height: 320px;
width:100px;
padding: 10px;
border: 5px solid gray;
margin: 20;
```

Margin: {`margin: value`}

- `margin` **values: number values**
  - `margin -top`
  - `margin -bottom`
  - `margin -left`
  - `margin -right`

Padding: {`padding: value`}

- `padding` **values: number values**
  - `padding -top`
  - `padding -bottom`
  - `padding -left`
  - `padding-right`

images2.html

Background image: `background-image`

```
body
{
background-image:url(image.gif');
background-color:#cccccc;
}
```

Can specify:

- background-**repeat** values: `repeat` (default), `no-repeat`, `repeat-x`, or `repeat-y`

- background-**position** values: `top`, `center`, `bottom`, `left`, or `right`

Background.html

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`<div>`

http://www.w3schools.com/html/html_blocks.asp)

- The <div> element is a block-level element, often used as a container for other HTML elements

- Always starts on a new line and takes up the full width available (stretches out to the left and right as far as it can).

- Useful for style specifications - Used to create document sections (or divisions) for which style can be specified

- A few other examples of block-level elements: <h1> - <h6>, <p>

`<div>` example (div.html)

```
<head>
  <style>
   .divFormat {
      background-color:black;
      color:white;
      padding:20px; }
  </style>
</head>
<body>
    <h2> An example of div</h2>
    <div class="divFormat">
        <h3>This is in a div</h3>
        <p>This is a paragraph within a div. ….. </p>
        <p>This is a 2nd paragraph ….</p>
    </div>
</body>
```

An example of div

This is in a div

This is a paragraph within a div. This is a paragraph within a div. This is a paragraph within a div.

This is a 2nd paragraph within a div.This is a 2nd paragraph within a div. This is a 2nd paragraph within a div. This is a 2nd paragraph within a div.

`<span>`

- The `<span>` element is an inline element that is often used as a container for some text.

- Has no required attributes, but **style** and **class** are common.

`<span>`: a small span of style

```
<style type = "text/css">
    .bigred {font-size: 24pt;
            font-family: Ariel; color: red}
</style>


    ...
<p>
    Now is the <span class = "bigred">
        best time </span> ever!
</p>
```

Now is the **best time** ever!

Done   My Computer

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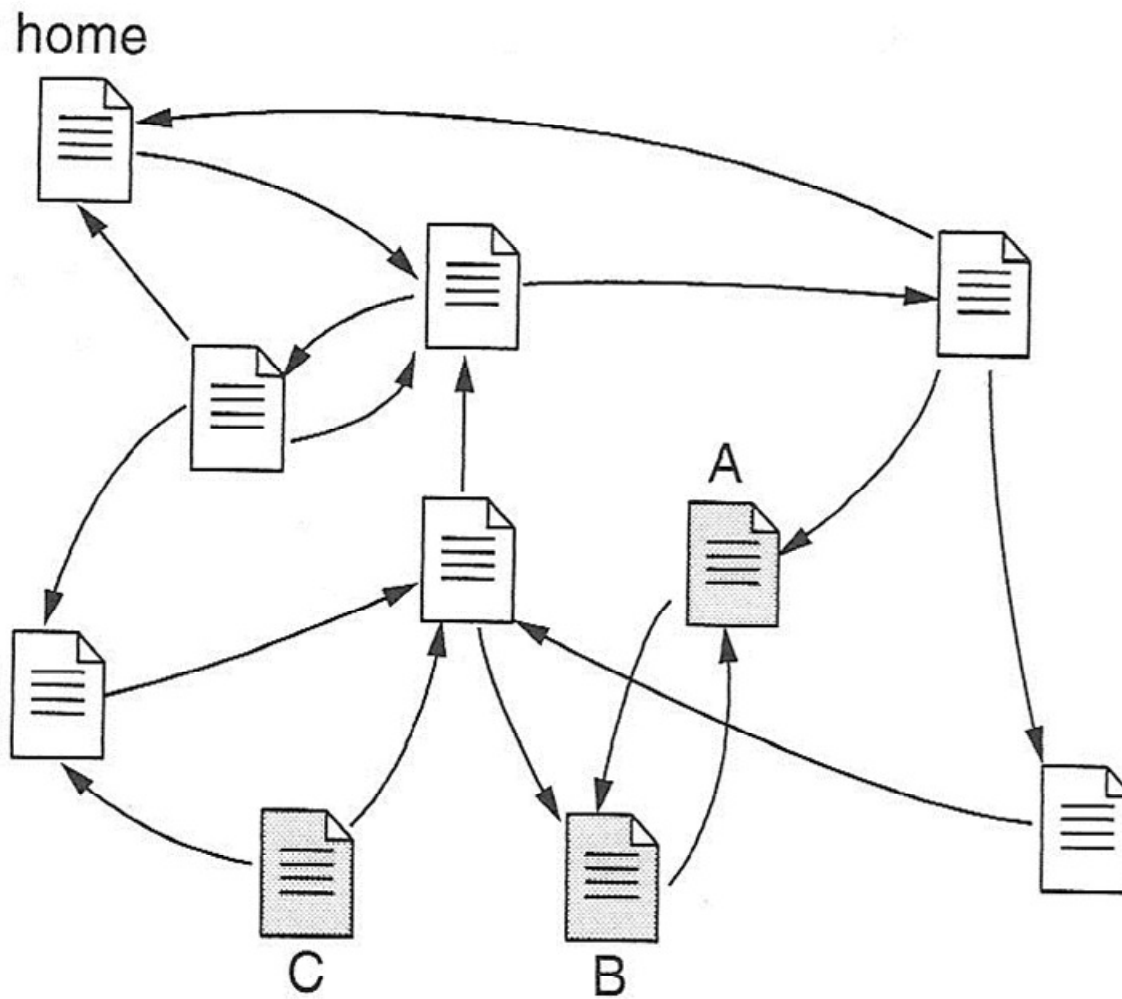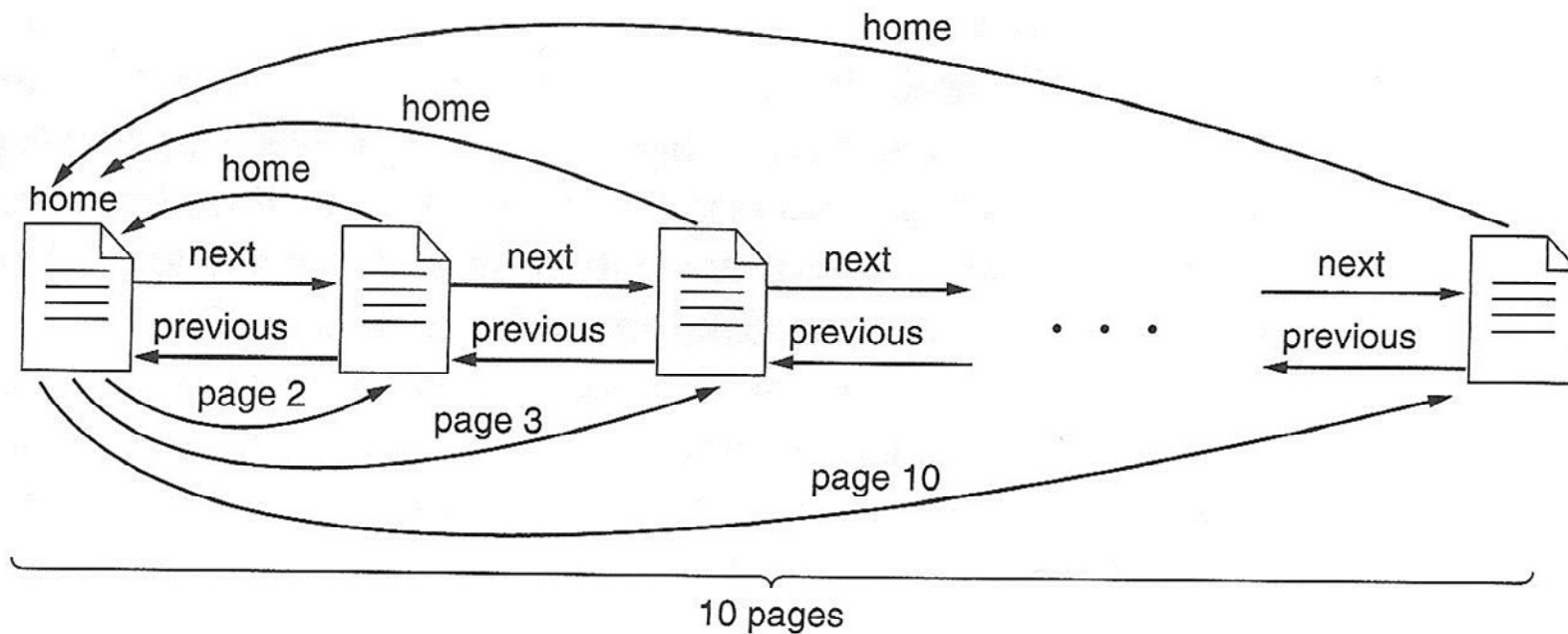 - `<span>` vs `<div>`
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Final Recommendation:
Web Design Strategies

What not to do .....
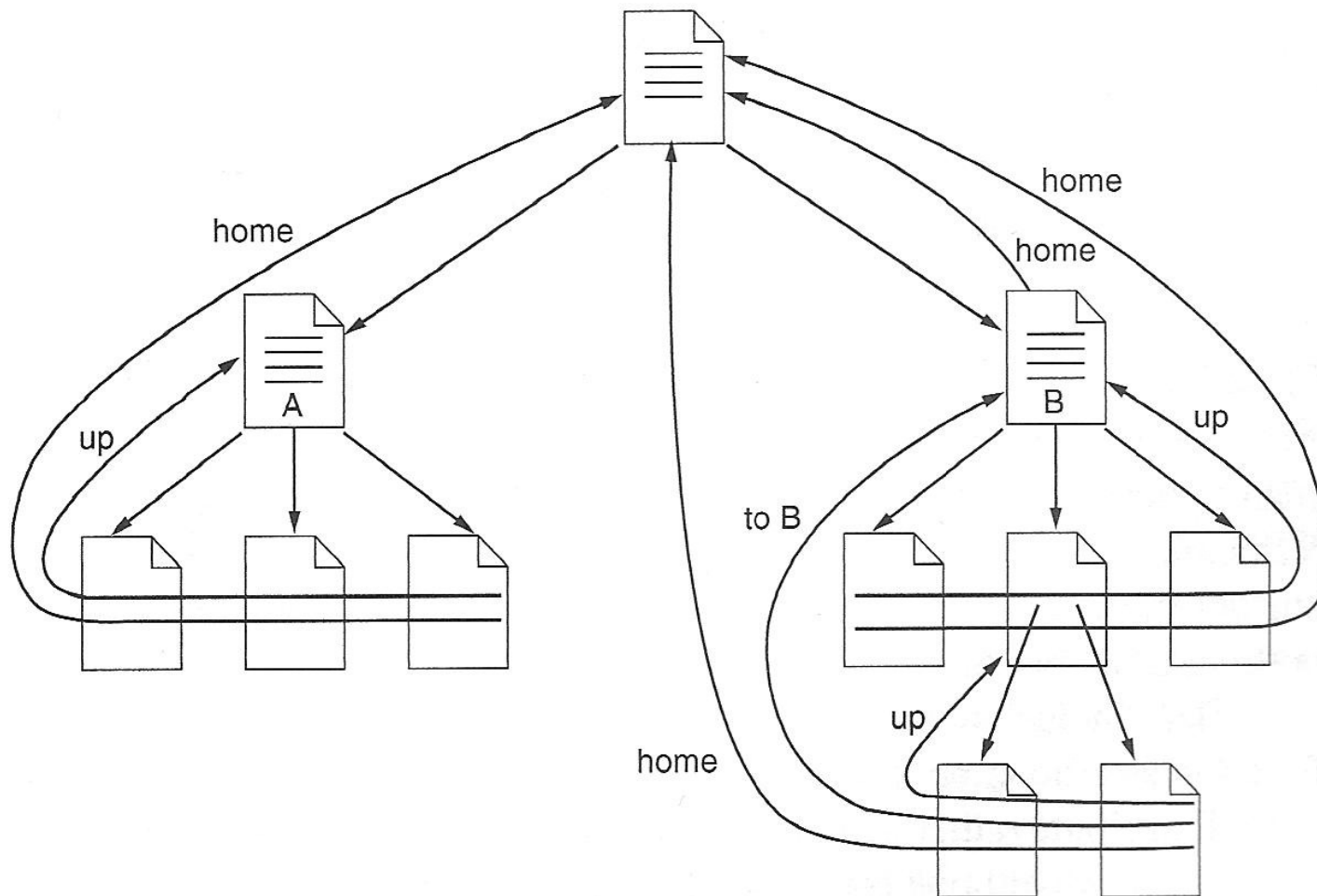
Linear Linking Structure

Possible link potions:
[page2][page3][page4][page5][page6][page7][page8][page9][page10]

[prev][next][home]

Hierarchical Linking Structure

Final Recommendation:
Web Design Strategies