CSS Basics of Cascading Style Sheets

About CSS
- Customization of appearance of page elements
  - Layout and visual appeal
- Define attributes
  - borders, colors, fonts, size, margins, and more
- Application of layout, visual design, and customization of appearance of HTML tags
- Main method of adding visual appeal to web pages

Styles can be defined for
- Tag - redefines how a particular tag is displayed
- Compound - how a tag within a particular named grouping or a named element is displayed.
  - Compound takes precedence over tag.
- Class - a set of attributes which can be applied to any element
  - A class could be applied to a paragraph, a word, a heading,

Color
- Color is an important design feature and can be used in many different ways
- Colors in CSS can be specified by
  - hexadecimal codes for amounts of Red, Green, Blue to create colors.
  - approved color words can be used.
- Web safe palette consisting of 216 colors was developed for older monitors
  - With new monitors web safe palettes are no longer necessary and millions of colors can be safely specified

Defining Hexadecimal*
- The code is preceded by #
- FF in hexadecimal is the maximum amount for the color and 00 in hexadecimal is the minimum amount for the color.
- #FF0000 - means 100% red, no green or blue
- Codes with 3 sets of double digits can be shortened to 3 digits
- #FF0000 - can be entered as #F00 (Dreamweaver uses this)

*In case you are wondering...
- Hexadecimal is a base 16 numbering system based on 16. We normally count in base 10 (99 is 9 X 10 + 9). Hexadecimal uses A, B, C, D, E, F to symbolize 10 - 15. What we normally think of as the tens place is the sixteens place in hexadecimal. Hence FF in hexadecimal = 15 X 16 + 15 or 255. In the color selector you will see the Red, Green, Blue amounts listed in decimal. The code created will be covert the decimal to hexadecimal (No need to know this for any text, just an interesting tidbit)

Dreamweaver’s Color Selector
- Color selector cursor looks like an eyedropper and picks up colors from the color selector. It can also be used to pick up colors off other items on your web page.
Text Styles
- Text styles can be applied to text elements:
  - headings, paragraphs, links, lists, etc.
- font-family:
  - specify a family of fonts (similar style fonts that the browser will go through to find font on user's computer) Example: Arial, Helvetica, sans-serif. 
  - last font listed should be generic type of font
  - serif, sans-serif, monospace, cursive
- color:
  - specify color code or words
- text-align:
  - left, right, center, justify

More text styles
- font-size
  - For accessibility & usability - it is preferable to not change default font size for your main content!
  - preferable to specify ems or percent
  - use pixels only when absolutely necessary
- line-height: best to specify in percentage
  - 110 - 120% provides nice spacing between lines
- text-decoration:
  - None (used to remove underlines from links)
  - Underline (avoid using - readers think it's a link )
  - Overline and Strikethrough

Background
- Can be applied to individual items
  - Color
  - Image
    - If using a dark image with light font color, change background color as well, so text will still display if user does not load in background image.
- Images can be set to
  - repeat - tiling (default)
  - no-repeat - image displays only once
  - repeat-x - image repeats horizontally only
  - repeat-y - image repeats vertically only

More on background
- Other attributes
  - scrolled - image scrolls with page
    - position can also be specified
  - fixed - image remains in a fixed position and text scrolls over image.
    - position should be specified horizontal (x) and vertical (y) positions.

CSS - Spacing
- Control spacing and layout of items on the page through use of
  - Padding
    - area around an item and before any borders
  - Borders
    - area around the padding and before the margins
  - Margins
    - area between an item and the items around it
  - Float
    - items to be positioned left or right from other items
  - Widths
    - width of a particular item

How to Define Styles
- Selector is what is being styled
  - html code such as h2, p, li, etc.
  - Compound often a division name and may include an html code
    - indicated with # at the beginning
  - class is named
    - indicated with a period . at the beginning
- Attribute is what we want to change such as color, font-family, etc.
- Property is what we want set for the attribute such as a specific color or font family
Defining styles
- In code follow this format
  selector {
    attribute: property;
    attribute: property;
  }
- Of course, Dreamweaver makes it easier.
  More on this later.

Where to Define Styles
- Styles can be defined in several areas
  - As a separate style sheet linked in the head section - Preferable
  - Within the head section of a particular page
  - Using a style tag with another HTML tag
  - Applying a class with tag or span

Style sheets
- One sheet can be applied to a whole site by linking the sheet to each page
  - Example: `<link href="name.css" rel="stylesheet" type="text/css" />
- Easy to update the entire site
- Best for separating structure & design
- Multiple style sheets defined for different presentations
  - Projector
  - Printer
  - Mobile computing device

Other definitions placements
- Within the head section with Style tag
  - Good for style used in only one page
  - Good for overriding the style in a style sheet for one page only
  - Example: `<style>…</style>
  - Style definitions between the codes
- Using the style tag and HTML
  - Ok for single use of a style within one page.
  - Avoid if possible, use class instead
  - `<p style="text-align:center">`

Applying Styles
- Styles defined as tags or compound are automatically applied.
- When styles are defined as a class, they need to be applied to the appropriate element or select text.
- Use span tag
  - `<p>This is <span class="redbold"> styling</span></p>`
- Use class as a parameter of a tag
  - `<p class="redbold">This is styling</p>`
- Again - this is easier in Dreamweaver...

Cascading Effect
- Styles applied to a tag will still be applied to tags that are descended from that tag.
Other cascades

- User styles supersede styles within a web page or external style sheet
  - The user can change how a page appears in the user's browser - this is GOOD for accessibility.
- Styles within a web page supersede external styles
  - By convention external CSS file links are listed first
    - if link is listed after styles defined within a page, then external will supersede these styles.

Avoiding Conflicts

- Last listed style supersede previous styles
  - Example and h1 tag displays as blue when:
    - h1 define first as red
    - h1 defined later as blue
  - To avoid this define styles for an element within a section once then edit if changes are needed
  - Do NOT create a new style for an element if one already exists unless you need to override the previous style.

Navigation

And styles for navigation

Types of organization/navigation

- Web: All pages have links to all other pages
- Hierarchy
  - Groups menus into categories
  - Categories may have subcategories
- Sequential
  - Step through page by page
  - Tutorials, stories, news articles

Navigation Accessibility

- Navigation should meet accessibility standards
- Some tips for accessibility
  - Avoid menu words as graphics if possible
    - If must use graphics, be sure to provide appropriate alternative text.
  - Some graphics menus are helpful, but also provide text method of accessing.
  - If using drop down/slide out menus, top level items should also be clickable to bring to a submenu page
    - For people with movement difficulties

About Navigation

- Navigation is generally accomplished through text menus
- For small sites (10 pages or under) consider having a links to each page on every page
- For larger sites organize your menus into categories.
  - Drop down or slide out menus
  - Category links which lead to pages with other links
Navigation Accessibility (cont)

- Wording should be short (1-2 words) and meaningful.
  - Page 2 is NOT meaningful
  - About Us is meaningful
- Use "Home" to go to the first page of your site
  - Don’t use the word index
- Text should always be readable
  - Background colors or images should allow high contrast between the text.

Web Aim Color check

- WebAim color test* Copy the color codes for your background and foreground colors.
  - Should at least meet AA level of contrast
- To achieve "pass " using the similar color scheme, click lighten or darken on one of the colors, you may need to click several times until a passing score is achieved.

Navigation Tips

- Logo or banner graphic can be a link to return to main page
- Keep main menus short 5-10 links
- Keep most pages within 2-3 clicks
  - 10 menus with 10 sub-menus with 10 sub-sub-menus is 1,000 pages!
  - Don’t bury information
- Don’t be mysterious
- Use the CSS :hover option to create roll over effects.

Other navigational aids

- Site maps
  - Generally list all pages within a site.
- Image maps
  - An image that has clickable areas

CSS- Navigation Lists

- CSS can be specified to be applied to just the navigation division.
- Fancy Footwork with lists
  - Lists generally are vertical listings with either bullets or numbering
  - CSS allows lists to be
    - Horizontal or vertical
    - With or without bullets or numbering
    - With special bullets
    - With padding, borders and margins
      - Appears like buttons.
      - Generally improve visual appeal

CSS Buttons & More

- Navigation Buttons
- More samples
- Demo using Dreamweaver
CSS - Layout

Designing for the Web

Visual Appeal

- Visual appeal is an important aspect of a web site
- Difference between a professional looking site and an amateur looking
  - The audience may see an amateur looking site having less credibility
- Graphic arts principals assist with developing professional looking sites.

Graphic arts

- Graphic arts developed on paper – so moving to the web may be difficult for those use to designing on paper with exact placement.
- On the web, it's difficult to control final output due to differences in
  - Monitor size
  - Browser
  - Screen
  - Resolution
  - User preferences

The web is not paper – it’s better

- A web page should not be designed as if it were a sheet a paper.
  - Accept that you can’t control everything.
  - Allow pages to flow, grow, shrink as needed.
  - For the normal text, don’t force fonts types and pixels on readers.
  - Keep repeating: The web is not paper, the web is not paper, the web is not paper….
- Web allows for
  - flexibility
  - usability
  - accessibility

Site Identity

- Consistent elements create a cohesive look.
  - People know they are still on the same site
  - Consider placing a logo or the same banner on all pages
  - Color schemes can help unify a site & lead to visual appeal

Site Identity (cont.)

- For large sites The same color can be used throughout the site OR
  - Different color schemes can be used to differentiate major subsections
  - Be consistent throughout the subsection
- For small sites
  - Use one color scheme
  - Easier and less work
Controlling Width

- **Why**
  - Wide screen and high resolution monitors present long lines of text, which are more difficult to read for some people
  - Less visually appealing
  - Menus or sidebars that are not meant to take up the full width of the screen
- To control width, place content within a division then specify widths with CSS.
- The most common way to specify width in pixel, em or percent

Width options

- **width** - specifies a width for the item,
  - percent can be applied to width to allow it to be flexible.
- **Maxwidth & minwidth**
  - maxwidth & minwidth work better with pixels or ems.
  - maxwidth & minwidth used together will allow pages that better adjust to the user’s monitor size
  - In Dreamweaver, use CSS properties panel (Not available in dialog box)

Centering Content

- To center the elements horizontally on a page.
  - Specify a width for the division
    - minimum and maximum width can be specified instead of just one width
      - Example: minwidth: 340px, maxwidth: 750px
  - Specify left and right margins to be auto

Centering

- To center entire contents
  - Place contents in a division
  - Specify width and auto left & right margins
  - Specify a background for the body tag
    - Color or image
  - Specify a white or light background for the content area

Example

Floating without margins

- Floating allows an element to be placed left or right of other elements
- If margins are not specified on the subsequent elements, a wrapping effect happens
**Floating with Margins**

- If margins are specified on the subsequent elements then we get a column effect.

```
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Donec sagittis
sed ante, at porttitor lacus lobortis vel euismod eu lacus. Nulla
velit, molestie et sodales in, fringilla eget velit. Donec sit
amet, consectetur adipiscing elit. Donec sagittis sed ante, at
porttitor lacus lobortis vel euismod eu lacus. Nulla velit,
molestie et sodales in, fringilla eget velit.
```

Margins specified slightly larger than the size of the floated element gives space between them. (Padding can also be used to give space.)

Over-simplification of floating – more in another lesson.

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**Critical Thinking Required**

- Lots of designs with what we’ve covered.
- To determine which styles, use critical thinking skills.
  - You need to think about what you are doing.
  - Use step similar to those used in the website development process
    - Define the problem
    - Determine possible solutions
    - Implement the styles
    - Test to see if it achieves the desired result
    - Make corrections or try a different solution

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**Critical Thinking Example**

We start off with our structure, which is two divisions, one for the navigation (ID="nav") and one for the slides (ID="slidelayout")

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**Critical Thinking - Define**

- Defining what I want Navigation in a green box on the left side. All text will be white. The list should not have bullets and not be indented.

- The elements I have to work with are
  - division <div id="nav">
  - heading 1 <h1>
  - unordered list <ul>
  - list items <li>
  - links <a>

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**Critical Thinking - Solutions**

- How can I get the navigation to be on the left?
  - float style will allow this and it needs to have a width specified, so a width & float should be applied to the navigation division

- How can I get the green box with white text?
  - The green is behind the text, so it must be a background. Apply the background to the navigation division
  - The text in the navigation division can be styled with white

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**Critical Thinking - Implement**

- Testing shows 2 things are not right
  - the link text is not white.
  - the list of links is not indented but it needs a little bit of space on the left
Critical Thinking - Correcting

- The default for the links override the text color, so the white style needs to be applied to the link `<a>` code.
- The left padding for the `<ul>` is changed from 0 px to 5 px.

Critical Thinking - Retest

- Much Better!

- Important point: THINK about what you are doing & why

CSS Examples

- Sample headings with CSS
- Demo of layout
More on CSS

and a look at CSS coding

Understanding Elements

- Anything placed on a web page is an element
- CSS is applied to elements
- An element contained within another element, it is called a child element. The containing element is called the parent element
  - Styles cascade from parent to child.

Example: Parent-child elements

- line items <li> have the parent element of an unordered list <ul>
- unordered list <ul> has a parent element of a division
- division <div> has a parent element of the body
- Widths, fonts, and other styles size elements and which set to percentages, reflect percentages of the parent element
  - If the Ul is set to 50% it will be of the div not the body.

CSS & Accessibility

- Keeping structure & style separate is important for accessibility, so styles could be turned off if need be.
- Styles should also meet accessibility guidelines

Accessibility Guidelines - Text

- Main content should not have fixed-size font.
- Changes in font-size should be in % or ems
- Text should always be readable.
  - High contrast between background and foreground
  - Avoid decorative fonts for main content
  - Italic and oblique should only be used short set of words
- Restrict width of text across screen

Accessibility - Navigation

- Drop down navigation should have the top item clickable and leading to alternate navigation.
Accessibility - Structure

- Headings act as an outline for your page (H1 is the first heading on a page)
- Alternative text must accurately and sufficiently describe the media.
  - Decorative images should have a space " " for the alt text and not left blank
  - Images that contain words should have all the words on the image for the alt text.
  - Illustrative images might need a long description page.
- All text is in appropriate structure.

More on Background CSS

- Background colors & tiled images cover the width of an element which may stretch to the width of a parent element unless otherwise changed.
  - Text does not mark the end of an element.
  - Some text is shorter
  - Some text is much longer, but the width of the element is the same

Background Options

- Using absolute positioning or fixed positioning for all elements on a page can take away from responsive layout (Layouts that gracefully adjust to the viewport) and possibly lose accessibility.
  - Avoid using absolute positioning.
- Setting a fixed position for parts of a page can be helpful
  - A page footer with copyright always on the page.

More Layout CSS

- Fixed dimension for a division can also be helpful to maintain a layout
  - CSS should be set to deal with elements that don't fit into these dimensions
  - Overflow is set to deal with content that doesn't fit. The options are:
    - Visible - shows all of the content, but extra displays outside of the division.
    - Hidden - crops off any extra content and does not display it.
    - Scroll - places a scroll bar on element to allow the content to be seen by scrolling. (Scroll bar will appear even if not needed)

Displaying CSS

- Not all CSS displays within web development programs the way it would in a browser.
  - If it looks like a CSS style is not working, preview the page in a browser to see if it works there.
  - Also a style may look like it is working in your program, but doesn't work in a browser.
- The way styles display may vary somewhat between browsers.
  - Test pages in several browsers
Nuances of floating

- Floating allows elements to be placed to the left or right of subsequent items
  - that is a simplification.
- What floating really does is take an element out of the normal flow of the document
  - Text and images in the subsequent elements move to the right for element floated left
  - Text and images in the subsequent elements move to the left for element floated right
  - The actual element is behind the floated item
- Use floating with care.

Example of image – Left float

Clearing floats

- Float cleared on new section, new section doesn’t move up

Elements behind float

- To demonstrate that the elements are actually behind the floated image, a left margin added to the image and added background color to the first heading

Bullets & floating.

- Text moves to right or left with floating, but bullets do not.