CSS

Basics of Cascading Style Sheets

About CSS

- ❖ Adds visual appeal to web page structure
- ❖ Standardized look of pages throughout a site
- ❖ Customizes how page elements look
  - ➤ Allows for layout with use of margins, padding, borders and more
  - ➤ Define styling for structural elements with use of colors, fonts, background, size, and more

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How to Define Styles

- ❖ **Selector** is what is being styled
  - ➤ html code – such as h2, p, li, etc.
  - ➤ id – named structural element such as a
    - ❑ indicated with # at the beginning
    - ❑ Example – #wholepage
  - ➤ class – style which can be applied to any element
    - ❑ Indicated with a period . at the beginning
    - ❑ Example – .redbold
  - ➤ Compound – Any combination of the above

More on Defining Styles

- ➤ **property** is what we want to change such as color, font-family, etc.
- ➤ **value** is what we want set for the property such as a specific color or font family.
- ❖ Defining style in code follow this format
  selector {
     property: value;
     property: value;
  }
- ❖ Of course, web development software makes it easier.

CSS punctuation

- ❖ Punctuation is important. If it is missing all the styles after that might be ignored.
  - ➤ The properties and values for the selector must be between curly brackets { }
  - ➤ The property must have a colon : directly after it.
  - ➤ The value must have a semi-colon ; directly after it.
    - ❑ If specifying more than one value separate by commas , with the last value having the semi-colon.

Where to Define Styles

- ❖ Styles sheets can be defined in several areas
  - ➤ One sheet applied to a whole site by linking the sheet to each page
  - ➤ Easy to update the entire site
  - ➤ Best for separating structure & design
  - ➤ Multiple style sheets defined for different presentations
    - ❑ Web
    - ❑ Projector
    - ❑ Printer
- ❖ Defined by a style sheet link in the head section
- ❖ Example: <link href="slidesheetname.css" rel="stylesheet" type="text/css" />

Where to Define Styles (cont)

- ❖ Within the head section
  - ➢ Good for styles used in only one page
  - ➢ Good for overriding the style in a style sheet for one page only
  - ➢ Within the head section of a particular page
    - ❑ Coding: <style>... </style> (define the styles between these two codes)
- ❖ Using the style attribute with HTML codes.
  - ➢ For websites, avoid if possible, use class instead
  - ➢ OK for single use of a style within one page or instances where style sheets can not be attached (such as discussion boards)

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, san serif.
    - ❑ last font listed should be generic type of font
      - ▪ Serif, san-serif, monospace, fatasy, 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 (use only for links)
  - ➢ Overline and Strikethrough

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.
  - ➢ RGB codes for amounts of red, green, blue
  - ➢ RGBA same as RGB, but also has opacity factor.
  - ➢ HSL & HSLA may also be used.

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
  - ❑ #FFFFFF – is 100% of all colors or white
  - ❑ #000000 – 0% of colors or black
- ➢ Codes with 3 sets of double digits can be shorted to 3 digits
- ➢ #FF0000 - can be entered as #F00 (Dreamweaver uses this)

Defining RGB

- ❖ RGB - amounts of red, green, blue from 0-255*
  - ➢ The code is specified by **rgb(rr,gg,bb)** where rr is the amount of red, gg is the amount of green and bb is the amount of blue
    - ❑ For example rgb(255,0,0) is 100% red and no green or blue
- ❖ RGBA - same as RGB, but adds in opacity (0.0 is transparent, 0.5 is 50% opacity, 1 is 100% opaque.)
  - ➢ The code is specified by **rgba(rr,gg,bb,aa)** aa is the amount of opacity
    - ❑ For example rgba(255,0,0,.5) is 100% red and no green or blue with 50% opacity

Sizing

- ❖ Common units of measure in CSS for sizing elements
  - ➤ Percent – a relative measure
    - ❑ In layout percent is the percent of the parent structure
  - ➤ In text is the percent of the default size (200% is text that is twice as big as the default text size.)
    - ❑ helps with accessibility in allowing the text size to adjust to the audience's preferred text size.
- ❖ ems - size of the letter M of the font being used - this is a relative measure and is preferable over pixels
  - ➤ In text, it helps with accessibility in allowing the text size to adjust to the audience's preferred text size.
  - ➤ In layout specifying ems can assist with adjusting layouts to the audience's preferred text size, so if they are using a large letter the width of the item can adjust.
- ❖ pixels - is a fixed measure (through it's actual size is relative when comparing different screen resolutions)
  - ➤ Preferable not to specify text in pixels
  - ➤ In layouts, use with caution.

Background

- ❖ Can be applied to individual items
  - ➤ Color – css code is **background-color:**
    - ❑ Example coding:background-color: #009933;
    - ❑ Default color is white.
      - ■ No need to specify unless it is to override the background of a parent element
  - ➤ Image – css code is **background-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.

Background Tiling

- ❖ Images, by default, tile (repeat over and over)
  - ➤ When tiling images it's important that the images tile seamlessly
    - ❑ For example:
      It repeats over and over to give the effect that you see in the background. You can't see the edges of the image.
  - ➤ Bad example: This image does not tile seamlessly

Cascading Effect

- ❖ Styles applied to a tag will still be applied to tags that are descended from that tag.
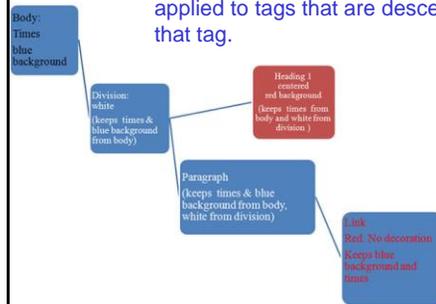
Navigation

And styles for navigation

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

Types of organization/navigation

Web navigation usually reflects the organization of the web pages within the site.

- Hierarchy
  - Groups menus into categories
  - Categories may have subcategories
- Sequential
  - Step through page by page
  - Tutorials, stories, news articles
- Web
  - All pages have links to all other pages
  - Good for small sites (10 pages or less)
- Mixed
  - Many web pages have more than one type of navigation

Navigation Accessibility

- Navigation should meet accessibility standards
- Some tips for accessibility
  - Avoid menu words as images if possible
    - If must use images, be sure to provide appropriate alternative text.
  - Some image 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

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.

Other navigational aids

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

CSS- Navigation Lists

- Since navigation consists of a list of links, they should be in a list structure,
- Styles for lists can be applied to just the navigation if it's in a layout structure such as with *div* or *nav*.
- 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 to look like buttons

CSS - Spacing

❖ Control spacing and layout of items on the page through use of

| my words |

- ➢ 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

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
- ➢ 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

❖ Control widths for
  ➢ Use on wide screen and high resolution monitors present long lines of text, which are more difficult to read for some people
  ➢ 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

Centering Content

❖ To center the entire contents of a page horizontally
  ➢ Place the entire page in a division
  ➢ 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**
  ➢ Specify a background for the body tag
    ❑ Color or image
  ➢ Specify a white or light background for the content area

Page centered
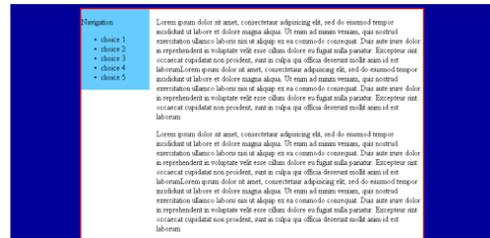
Floating without margins

❖ 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.

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

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

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

Clearing floats

- ❖ Float cleared on new section, new section doesn't move up

Bullets & floating.

- ❖ Text moves to right or left with floating, but list bullets/numbering do not.

Critical Thinking

- ❖ With just the CSS that we've covered so far, you can create a plethora of differently styled sites.
- ❖ In order to determine what styles are needed for your website, it is crucial to develop and use critical thinking skills.
  - ➢ You need to think about what you are doing.
- ❖ As part of critical thinking, we 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

More on CSS

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 have the parent element of an unordered list
- ❖ unordered list 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.

Examples

- • Examples:
  - • Styles on this page have a style set for **ul ul** (which is a list within a list) and has the font-size set to 90%.
    - • Each level is 90% of the level above it which is the parent item
      - • This is 90% of it's parent item.
        - • The text gets smaller for each indent
          - • and smaller
            - • and smaller
              - • and still smaller
                - • and very small

This division has the width set to 50%. It takes up 50 % of the parent element (content division) and not 50% of the page. (A border was added to this division.)

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.

Applying Styles

❖ Styles defined as codes, ids, 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>`

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 images have many options. These options are not valid if you are only using a background color. If using these options, you must use the background-image coding as well.

Background TilingOptions

Background image repeats vertically on the right

Background image repeats horizontally only positioned on bottom of division

Background image does not repeat and is positioned bottom right

Background image does not repeat and is positioned centered

background-repeat:no-repeat background-size: cover
Cover

Background Positioning

❖ Background images can be positioned using background position. This has no effect on the default of tiling. Use only with no-repeat, repeat-x, or repeat-y
  ➢ background-position: x y
❖ When using positioning with...
  ➢ no-repeat -- specify both the X & Y position
  ➢ repeat-x -- specify the Y position (X is not needed as we are repeating on the X)
  ➢ repeat-y -- specify the X position (Y is not needed as we are repeating on the Y)

Other properties for backgrounds

- ❖ scrolled - image scrolls with page
  - ➤ position can also be specified
    - ❑ Example the swirl at the bottom of this slide is scrolled, no-repeat and position is specified.
- ❖ fixed - image remains in a fixed position and text scrolls over image.
  - ➤ position should be specified horizontal (x) and vertical (y) positions.
- ❖ Background-size:cover;

More Layout CSS

- ❖ 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.

Fixed divisions

- ❖ 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

Design to CSS

Creating Styling from Plan

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.

Planning CSS

- ❖ Before beginning to style your page, have a vision in mind
- ❖ Create a sketch of how you want the page to look.
- ❖ Example sketch

- ❖ This plan is a guideline to what I want the page to look like. Critical thinking helps me to determine which styles to use.

Body CSS

- ❖ For the body background images/color should be defined and any aspect which is to affect all other areas.
- ❖ A lauhala background is planned, since it is for the entire area it should be applied to the body.
  - ➢ I could have one large image, but it would be more efficient to have a small image that tiles to create the effect.
- ❖ To the body tag I apply this image:
  - ➢ One square of a lauhala pattern
- ❖ The font-family used throughout will be
  - ➢ Arial, Helvetica,San-serif which can also be defined in the body code.

Navigation CSS

- ❖ Navigation is narrower than the content and to the left of the content and has green box around it.The navigation is in a division and to get it to the left, a left float needs to be applied. A width must also be set. Items can't float unless there is a width set.
- ❖ Navigation division background is set to green to make it look like a green box.
- ❖ The font color is set to white.

Navigation CSS (cont.)

- ❖ The navigation links are a list which consists of 3 HTML tags. Be are of which styles go to which tag. Also the styles should be specified as compound so it effects the navigation only.
  - ➢ Unordered list (Style set to take away bullets and delete left margin)
  - ➢ List items (Bottom padding set to add little space between items)
  - ➢ Links (Color of text needs to be set on the link as links have a default blue color that needs to be overruled.)
- ❖ Navigation heading is an h1 heading.
  - ➢ It needs to be larger than the text in the navigation and it is set to 150%

Main Content CSS

- ❖ For the Content division.
  - ➢ To keep the content from wrapping below the navigation, the content needs a left margin. It's set to be slightly wider than the navigation to create space between the navigation & content divisions.
  - ➢ A black border is around the content - the type of border and color must be set in order for it to display.

Main Content CSS (cont.)

- ❖ The heading on the page is centered, red colored with a blue line under it. The h1 code is styled so that
  - ➢ Text-align is set to centered
  - ➢ Text color is set to red
  - ➢ A bottom double blue border is set.
- ❖ Bulleted list
  - ➢ Each indented bullet has slightly smaller text.
  - ➢ Set ul ul to 90%

Accessibility & Usability CSS

- ➤ Content division background should be white to increase readability
- ➤ Font color is not changed (black is default). Black / White offer best contrast.
- ➤ A width is also set so it doesn't stretch across a wide screen monitor

Arrow Navigation CSS

- ❖ The arrows to navigate at the bottom are in a division within the main content area.
- ❖ A background image is set within this division in the bottom right corner and does not tile. Styles for the background
  - ➤ Image is specified
  - ➤ No-repeat
  - ➤ Position is right bottom
  - ➤ The background image has a height greater than the arrows, so the height of the image is used to set the height of the division. If the height is not set the entire image will not

Footer CSS

- ❖ At the bottom of every page is a copyright notice. The notice is always on screenFooter is set to fixed with position at the bottom
- ❖ To place the text on the right, the division has the text-align set to right.
- ❖ To make the font smaller, the text-size is set to 80%

Implementing CSS

- ❖ Once we plan what we want to do, it's a simple matter to implement the CSS.
- ❖ Test the CSS by looking at it in a browser and testing with several browsers.
  - ➤ There are some slight differences in how browsers interpret CSS.
- ❖ Experiment with parameters to get the best look for your site.