

Text

- Second only to having good content, good text formatting is key to good website design
- Use of text on web pages is similar to use on paper - many of the same rules apply
- Major difference - paper is not dynamic; web pages can be resized
- Unlike paper the Web is a fluid medium - text must be able to flow and change with the browser that displays it
- Designers can force a 'look' by using images to display text
 - This is a very bad idea for large chunks of text

Text Design

- Leave the font up to the user unless choosing a font for emphasis
 - Then use a concise, easily readable font with fallback options
- DON'T SHOUT - use all uppercase sparingly
- Use horizontal rules to separate sections of a page
- Use strongly contrasting colors for background / foreground
 - use an RGB color wheel for color contrasts
 - white on black may not print properly
 - red vs. green may be a problem for those with red-green blindness
 - remember that color printing can be expensive
- Be consistent in use of headers and headings
 - Clearly distinguish between different levels of headings
- Follow paper conventions for things such as references and bibliographies
- Create a separate style sheet for printing purposes
 - hide navigation sections
 - do not print white on black
 - hide background images and colors
- Use the same class names but apply different properties better suited for printing or excluding
- For a static, restful design, balance elements on the page
 - put similar margins on both sides
 - make the page symmetrical
- For a dynamic design use asymmetry
 - balance text against white space instead of other text
- Contrast draws the eye to important elements
 - contrast fonts with different sizes, shapes, position, weights and colors

- contrast headings and images with different sizes
- Harmony is the opposite of contrast and is used for elements of equal weight
 - use similar shapes, sizes, color and style for items of equal importance
- Examine a layout for both:
 - what stands out - is it a useful contrast or just jarring?
 - what doesn't stand out - is it in harmony or just boring?
- Have someone else examine your design
 - Do they share your opinion of your text layout?
 - Do they have any accessibility problems you have not dealt with?
 - Do they see the same contrasts and harmonies?
- Don't use graphics if you can do it with text
 - text is smaller and loads faster
 - text can be indexed by search engines

Color

- Color is defined differently in different media (i.e. screen vs printing)
- Computer video cards use RGB (Red Green Blue) combinations to represent colors
- Different combinations of red, green, and blue create different colors
 - 'all' colors becomes white
 - 'no' colors becomes black

Primary Colors

- Primary colors result from using only one the primary RGB colors while keeping the other two colors at 0. These colors are:

Dithering

- Dithered colors are colors made up of a combination of other colors that can be displayed directly
- In the example, red and blue produce violet
 - the smaller the pixels the better the color display

Color Schemes

- When using a color scheme pick one color to be dominant and let the other colors be complementary to it - use the subordinate colors for headers and, titles, sidebars, lines and rules, boxes, etc.

- Analogous:
 - colors near each other on a color wheel
- Complementary:
 - colors opposite each other on a color wheel
- Triadic:
 - three colors that form an equilateral triangle on a color wheel
- Split-Complementary:
 - uses two analogous colors and a complementary color
- Tetradic:
 - uses four colors in two complementary pairs
- Square:
 - uses four colors evenly spaced around a color wheel

Usability

- A usable website is:
 - Easy to learn
 - Efficient to use
 - Memorable
 - Easy to recover from errors
 - Pleasant to use
 - Useful
- Web pages should be self-explanatory
- If the user has to think about how to use the page, it's a poorly designed page

XHTML

- Extensible HyperText Markup Language
- XHTML is a combination of XML and HTML

What is HTML?

- HyperText Markup Language
- the standard publishing language of the World Wide Web
 - specifies a small set of structural and semantic tags for authoring relatively simple documents
 - supports hypertext and multimedia

Why XHTML?

- Stricter enforcement of markup rules than HTML
- Forces separation of document layout from its structure with style sheets
- Easier to introduce new tags in XHTML
- XHTML is an independent standard
- XHTML integrates other XML languages such as SVG and MathML easily

XHTML versus HTML

- XHTML requires lowercase tags
- XHTML requires quotes around all attributes
- Tags cannot be intertwined in XHTML
- XHTML requires DOCTYPE declaration
- XHTML tags structure rather than layout

Bookmarks

- Long documents may need internal links to make navigation easier, as in:
 - Tables of contents
 - Lists of topics
 - Different content types
- By referencing a bookmark a link can jump directly to that point on a web page

Hyperlinks

- Hyperlink address can be absolute or relative
 - Absolute addresses start with http and include the address of the website as well as the destination web page
 - Relative addresses leave off the website address - pages are assumed to be on the current website

<table>

- Used to organize tabular data in rows and columns
- Also used for formatting, particularly the aligning of various objects: Avoid! this should be done with CSS
- Contents can be organized by cells, rows, columns, and the entire table
- Can define captions, headers, and footers

Table Attributes

- border: size of the border around the table
- cellpadding: spacing between cell data and borders
- cellspacing: spacing between cells
- frame: specifies which sides of the frame surrounding a table will be visible
- rules: specifies which rules will appear between cells within a table
- summary: provides a summary of the table's purpose and structure - should be used on all tables
- width: specifies the table width on the page in either relative (%) or absolute measurements

Tables

- Tables are the most complex part of the XHTML structure
- Plan ahead when creating tables - determine height in rows and width in columns
- Turn borders on when editing to help you see where rows and columns appear

MIME

- MIME (Multipurpose Internet Mail Extensions) defines how data should be transmitted through email or HTTP
- MIME defines how certain types of content should be encoded for transmission
- MIME also allows browsers to decide how to deal with content types

Raster Graphics

- A bitmap rendering of an image
- Images are made up of pixels
- Each pixel has a colour represented by different amounts of red, green, and blue (RGB)
- Best suited to photographs or photo-realistic images
- Image sizes are fixed in size and cannot be scaled without loss of quality
- Larger image = larger file size
- Various formats available: jpeg, gif, png, bmp
- Most formats are compressed with some loss of detail - 'lossy' compression
- Compressed images can be compressed further by limiting their colours or quality
- Reducing a GIF from 256 (8 bit) colours to 16 (4 bit) colours can cut a file size in half
- Reducing a JPEG's quality can make a file significantly smaller
- Compression may introduce artifacts in large areas of continuous colour

Vector Graphics

- Images are rendered with geometric primitives such as points, lines, curves, and polygons
- Images are made up of vectors - i.e. a description of the primitive rather than individual pixels
- Best suited to text or graphic design
- Images can be scaled infinitely with no loss of quality
- Images can be rotated, mirrored, skewed, etc. with no loss of quality
- Vector images may use the same colour depth as raster images
- Vector images are easily converted to raster images
- Most common vector formats are Flash and SVG
- Flash needs a plug-in for all browsers but SVG needs a plug-in for some browsers but is supported natively by others

Colour Depth

- The number of bits used to record colour in an image
- The more bits the more colours available
 - 1 bit - black or white
 - 4 bits - 16 colours (minimal VGA)
 - 8 bits - 256 colours
 - 24 bits - 16.7 million colours (typical)
- Greater colour depth = larger image

Resolution

- Measured in pixel width and height
- 640 x 480, 800 x 600, 1280 x 1024, etc.
- Higher resolution = more memory
- Detail determined by pixels per inch (PPI)
 - Monitors typically 72 - 130 PPI
 - Consumer printing typically 150 - 2400 dots per inch (DPI)
- Printing shows more detail than monitors

Why CSS?

- Compatibility:
 - Newer versions of CSS can read older versions

- Older versions can read new versions by discarding new elements
- Older browsers ignore CSS
- Complementary to Structured Documents: style sheets have little or no impact on marked-up text
- Vendor, Platform, and Device Independence: style sheets provide the same basic in all circumstances
- Maintainability: easy to update an entire site when formatting is kept in an external style sheet - one stop format editing
- Simplicity: CSS is human readable and compact
- Flexibility: CSS can be applied in several different ways
- Richness: CSS contains a broad set of formatting controls
- Accessibility: no need to turn to HTML tricks - that tend to be inaccessible - for formatting

Selectors

- CSS codes can be applied to different parts of an XHTML document
- Selectors determine which CSS codes are applied to which XHTML tags or group of tags

Measurements

- CSS allows widths, heights, and font sizes to be specified with absolute units or relative to some other measure
- A size of zero needs no units
- These sizes can be applied to elements other than text
- Sizes should be specified for most containers

CSS Box Model

- Margin: a transparent area set between one element and the next
- Border: a line around the element
- Padding: the spacing between the element content and its border
- Content: the content of the element

Case: "Cybersquatting: Microsoft vs. MikeRoweSoft"

- Canadian teenager Mike Rowe was being sued by Microsoft for registering and using the domain name MikeRoweSoft.com. Microsoft lawyers said mike was infringing on Microsoft's trademark

- and demanded he transfer the domain for \$10. Rowe refused because he has worked on the site for awhile it was making him money. He wanted \$10,000 to cover his costs and contacted the press. The press was involved and made it seem that Microsoft was being a big corporate bully. Mike and Microsoft eventually settled and mike got an Xbox with some games and other special perks.
- Lesson: cybersquatting to make a profit is harder today than it was couple of years ago. Don't try to cybersquat in order hurt or ruin someone's reputation because you can get a lawsuit.