

# Website Development

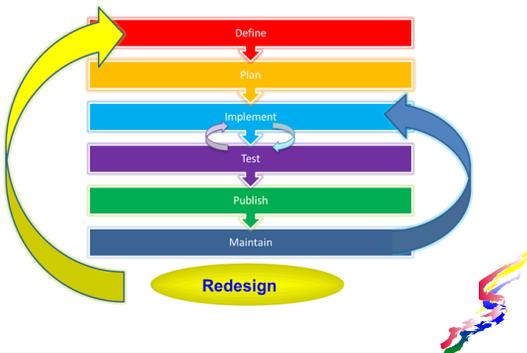
Introduction

Instructor: Vanessa Cole

## What is Website Development

- ❖ A systematic approach to creating websites
- ❖ The website development process:
  - Define - define topic, purpose, target audience, technical aspects
  - Plan - plan out the site
  - Implement - build a prototype (smaller version of site) & add in additional elements & content
  - Test - technical testing & evaluation of site
  - Publish - post to a server & publicize
- ❖ Maintain - Update the site.

## Web development Cycle



## What is a website?

- ❖ A collection of interrelated, interlinked and interactive documents and other files accessible through the World Wide Web via a Uniform Resource Locator (URL).
- ❖ An organized set of information pages viewable through a web browser.
- ❖ Primarily consists of web pages, but other types of files may be also be present within a website
  - PDF documents
  - other document & files

## What is a web page?

- ❖ A single document created with web markup language for display with a web browser
  - Can be created by people or may be automatically generated by computer
- ❖ Webpages are primarily text, but incorporate
  - Multimedia elements
    - ▲ Graphics
    - ▲ Animation
    - ▲ Video
    - ▲ Sound
  - Programming & Scripting

## How does a site get “on the web”

- ❖ Components are normally created offline.
  - Unless you are using predefined online templates and wizards (which may not be used for this class)
- ❖ Components are uploaded to a web server
  - Internet Service Provider (ISP)
  - Web Hosting Service
  - Business or organization server
- ❖ Access to site Web
  - Server provided URL
  - Registered domain name URL

## What's a Markup Language?

- ❖ A way of marking text and other elements to specify how a web page is displayed by a browser.
- ❖ Web markup languages are cross-platform (can be read by many different kinds of computers)
  - Windows computers
  - Macs
  - Mobile computers/Smartphones

## More on Markup

- ❖ Cross browser - can be read by any web browser
  - Internet Explorer
  - Safari
  - Opera
  - Chrome
- ❖ Several markup languages exist.
  - We will be working with HTML 5

## Hypertext for structure

- ❖ HTML was developed to simply add some formatting to web pages and add in simple graphics
  - Not meant as a way to make the pages look great.
- ❖ As the web developed and transfer speeds increased, the need for professional looking websites became apparent
  - Cascading Style Sheet (CSS) capability was developed

## CSS for Visual Appeal & Design

- ❖ Add visual and layout design
- ❖ Allow content and page design to be separated as much as possible.
  - Same content can be viewed in numerous ways
- ❖ Different style sheets can be loaded for
  - different applications – screens, printers, mobile devices, projection
  - accessibility devices – Braille and aural (voice).

## What Are Usability & Accessibility?

- ❖ Usability – the ease in which a web site can be used.
  - The design of a web site should make it obvious how to use the site.
  - If it's not obvious people will move on to another site.
- ❖ Accessibility – usability for everyone including those who have different abilities.
  - May be required by law

## Website File Management

- ❖ Keep files organized
- ❖ Be observant of file names and file types
- ❖ Know where you save your files
- ❖ Be consistent in file naming conventions
- ❖ Be aware of that files are stored in two locations
  - Locally (on your hard disk)
  - On the web server
    - ↳ Not on server until you upload
- ❖ Keep your files straight

## Naming Files

- ❖ Be consistent in your file naming conventions.
  - ❖ Avoid mixing upper and lower case unless there is a reason for upper case.
  - ❖ Avoid spaces within the file names, some servers and some browsers have problems with these.
  - ❖ Be consistent in the web page file extensions use either all .htm or .html, but not both Dreamweaver default is .html
- 

## File Types

- ❖ Files have extensions or file types which tell the computer what kind of file it is.
    - Some computers are set up so that you don't see the file types
    - In web development, it's important to see these extensions so links are properly created, and you know which type of files you are working with.
- 

## Folders

- ❖ Store all your web site files in one main folder
    - Other folders may be in the main folder
      - ▲ Organizes your work.
      - ▲ Consider storing images in images folder
      - ▲ If using a lot of other media, store those in separate folders also.
    - As a site gets larger, consider organizing sections into folders.
      - ▲ For instance my course site has folders for each of the courses I teach
  - ❖ Each folder on a site should have it's own default file
- 

## Consistency on and off line

- ❖ If web pages, image files or other files are stored in a folder within your web folder on your computer then they must be in a folder with the same name online.
    - Upload the whole folder so you don't forget a file.
  - ❖ If files are changed offline, they must be uploaded to be online.
    - Renaming files
    - Changing content of files .
- 



# Web Page Building

With a look at HTML

# Web pages in HTML

❖ Web pages created with HTML have codes placed around text such as show below.

```
<html><head>
<title>Web Page Creation</title>
</head>
<body>
<h1>Web Page Creation</h1>
<p>Web pages are built with markup text.
This turns text into web pages and pulls
in graphics and other media.</p>
<h2>Markup</h2>
<ul>
<li>Structural markup</li>
<li>Style markup</li>
</ul>
</body>
</html>
```



# Creating Web Pages

- ❖ HTML codes
  - Most codes have a beginning and an ending code
    - ↳ The ending code has a slash in front of the code
- ❖ Some code are singular and may have a slash at the end.
- ❖ We will be working in HTML 5 which does not require this, but you may see this code in some webpages.



# HTML – Defining Page

- ❖ !DOCTYPE >
  - Document type must be defined on the first line of the HTML document
  - Specifies the version of HTML
  - Used by browsers to determine how to interpret code
- ❖ <html > </html>
  - Encompasses entire page
  - May have parameters defining version of HTML



# Sample codes.

- HTML 4.01
 

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
"http://www.w3.org/TR/html4/loose.dtd">
<html lang="en">
```
- XHTML
 

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml" lang="en">
```
- HTML 5
 

```
<!DOCTYPE HTML>
<html lang="en">
```

❖ Recommended to have the language specified "en" specifies English.



# Web pages have two sections

- ❖ Head
  - Hidden items – do not display in browser window
  - Used to define some parameters for the page
  - HTML codes
    - ↳ <head> </head>
- ❖ Body
  - Content of the page
  - Displays in the browser window
  - HTML codes
    - ↳ <body> </body>



## Head Section

- ❖ Most important code in the head section is the Title
  - Code: `<title></title>`
  - Uses
    - ▲ Appears in the title bar of a window
    - ▲ Words placed in bookmarks/favorites
    - ▲ Search engine use the title in the weighing of pages
- ❖ Keep your title meaningful and short
  - Recommend using name of site & page heading in title.
- ❖ Each page in your site should have a unique title.

## Note: on title

- ❖ The title is NOT the first heading on your page.
  - A page should have both a title and a heading.
  - The same wording may be used in both, but the title is coding in your head section and a heading is within your body.
  - The title usually has the site name also

## Other Head Elements

- ❖ Load in CSS styles
- ❖ Meta tags - numerous types of tags to define various items some of which deal with search engines
- ❖ Scripting
- ❖ Other page setup codes

## HTML Body Basics

- ❖ HTML was originally designed to display simple text within specific structures and with minimal formatting
- ❖ Everything stored within the web page is actually just text.
  - Other media such as graphics, video, audio exist in separate files and can be displayed via coding to link to the files.
  - The displayed web page looks like it has these items within the file
  - Important to realize these are SEPARATE FILES

## Body Structure

- ❖ Text content must be in a structure
  - Headings
    - ▲ 6 levels
  - Paragraphs
  - Lists
    - ▲ Unordered
    - ▲ Numbered
    - ▲ Definition
  - Block quote
  - Table data (we'll cover this later in the semester)

## Headings

- ❖ All pages should have at least one heading.
- ❖ Headings act as an outline for the page
  - Heading 1 is the top level heading
    - ▲ HTML: `<h1></h1>`
  - Heading 2 is a sub heading to heading 1
    - ▲ HTML: `<h2></h2>`
- ❖ Each higher number heading is a subheading of the previous level. Up to 6 levels of headings
- ❖ Heading should always be used in proper order. The first heading on a page should ALWAYS be defined as heading 1.
  - Allows for greater accessibility
  - Search engines use as a weight

## Heading codes & result

<code>&lt;h1&gt;Heading 1&lt;/h1&gt;</code>	<b>Heading 1</b>
<code>&lt;h2&gt;Heading 2&lt;/h2&gt;</code>	<b>Heading 2</b>
<code>&lt;h3&gt;Heading 3&lt;/h3&gt;</code>	<b>Heading 3</b>
<code>&lt;h4&gt;Heading 4&lt;/h4&gt;</code>	<b>Heading 4</b>
<code>&lt;h5&gt;Heading 5&lt;/h5&gt;</code>	<b>Heading 5</b>
<code>&lt;h6&gt;Heading 6&lt;/h6&gt;</code>	<b>Heading 6</b>

## Paragraphs & Quotes

- ❖ Paragraphs contain paragraphs and other items not contained in other structures
  - HTML: `<p></p>`
- ❖ Block quotes are used for quotations.
  - Often used when quoting from another source
  - Quotes that are normally indented
  - HTML: `<blockquote> </blockquote>`

## Lists contain lists of items

- ❖ Unordered list - used for lists when order is not important, default is bulleted.
  - `<ul></ul>` defines entire list
  - `<li></li>` defines each item in the list
- ❖ Numbered list - used for lists when order is important, default is numbered
  - `<ol></ol>` defines entire list
  - `<li></li>` defines each item in the list
- ❖ Definition – used for lists of words followed by definitions
  - `<dl></dl>` defined entire list
  - `<dt></dt>` defines term
  - `<dd></dd>` defines definition for term

## Example of lists

- Unordered list
  - used for listing items
  - order isn't important
  - Default bullets are
    - Round for top level
    - Circle for second level
    - Square for subsequent levels
- 1. Numbered lists
  - a. Use when list order is important
  - b. Step by step
  - c. different type number can be used
    - i. Numbers (1,2,3)
    - ii. Roman numerals small (i, v, x)
    - iii. Roman numerals large (I, V, X)
    - iv. Alphabetic small (a,b,c)
    - v. Alphabetic large (A, B, C)

Definition lists  
Presents a word or phrase, followed by a definition which is indented

## Other Body Codes

- ❖ Line break – places a line break within a paragraph or other element. `<br>`
- ❖ Horizontal rule – draws a line `<hr>`
- ❖ Abbreviation – defines what an abbreviation stands for `<abbr title="Words for the abbreviation">abbreviation</abbr>`
  - *abbreviation* is the letters of the abbreviation (For example: HTML)
  - Words for the abbreviation are what the abbreviation stands for (For example (Hypertext Markup Language))

## Linking

- ❖ Linking – creates a link to another page  
`<a href="webaddress"> wording</a>`

### ➤ web address is

- ^ The file name for links within your site
  - May include folder names for files in other folders
- ^ The complete URL for links outside your site
  - If I just put something like *google.com*, it won't work. The complete web address is needed *http://google.com*

### ➤ Wording – text or image for link

- ^ Wording should be appropriate

### ➤ T

## Text Formatting

- ❖ Simple text formatting of bold & italic with markup languages
  - Use only for items that should always be bold or italic, such as italicizing the title of a book.
  - Do not as a styling choice.
  - HTML:
    - ▲ Bold `<strong></strong>`
    - ▲ Italic `<em></em>`
- ❖ All other formatting should be done with Cascading Style sheets (CSS)
  - Our first assignments will be plain and not contain any styles

## Default formatting

- ❖ It's important to understand that there is default formatting.
- ❖ All default formatting can be changed with CSS
- ❖ Headings
  - Default formatting is for heading 1 to be largest and each subsequent heading to be smaller.
  - Do NOT use a smaller heading to make the font smaller for your heading. USE CSS instead
  - Use the correct level heading.

## Default formatting (cont)

- ❖ Line spacing
  - Most items have a line space before the items
    - ▲ Headings
    - ▲ Paragraphs
    - ▲ Lists (not each line item, just the whole list.)
- ❖ Indented
  - List items
  - Blockquote
    - ▲ Do not use to indent something that is not a quote.
- ❖ All default formatting can be changed with CSS

## Important Concept

- ❖ Structure and Styling should be kept separate.
- ❖ Use HTML tags as STRUCTURE
  - Not as styling choices
  - Use appropriate code for elements within your page
- ❖ All styling should be completed with CSS.
  - Use to change from default formatting
- ❖ HTML and CSS are usually stored as separate files that the browser pulls together.
  - This makes styling changes easy
  - Allows for greater accessibility



## More on HTML & Brief Look at CSS

Separating Structure & Design

## More about HTML

- ❖ W3C oversees standardization of HTML and establishes rules
  - Led by Tim Bernes Lee who first developed the web
- ❖ Current widely used version is HTML 4.01 (XHTML 1.0)
- ❖ Newest version is HTML 5
  - New elements
  - Easier media integration
  - More interactivity

\*W3C – World Wide Web Consortium



## HTML Code Ordering

- ❖ Codes need to be closed in the proper order. The most recently used tag closes first.
- ❖ Correct order  
`<p>This is <strong>text</strong></p>`
- ❖ Incorrect order  
`<p>This is <strong>text</p></strong>`



## Validation

- ❖ If you are writing HTML code, consider using a validator to ensure your HTML is correct - [W3C's Validator](#)
  - Finds tags that are not closed
    - ^ `<p>This is my paragraph.`
    - ^ `<p>This is another paragraph`
      - both are missing `</p>`
  - Finds tags that are improperly closed
    - ^ `<p>This is my <em>paragraph</p></em>`
      - Tags contained within another tag must close first
      - `<p>This is my <em>paragraph</em></p>`
  - And many other coding errors



## HTML Attributes

- ❖ Some HTML tags allow various attributes (also called parameters) which can effects the tag.
- ❖ Attributes are included after the tag name
  - `<ol type="A">`
  - `<a href="mypage.html">`
- ❖ More than one attribute can be included
  - `<ol type="A" start="5">`
  - `<a href="mypage.html" target="_blank">`
- ❖



## List Attributes

- ❖ Ordered List type
  - `type="I"` (Large Roman numerals)
  - `type="A"` (Large alphabet )
  - `type="i"` (small Roman numerals)
  - `type="a"` (small alphabet)
  - `type="1"` (default - numbers)



## More list attributes

- ❖ Ordered list *start* attribute
  - `start="n"` (n can be any number and it starts the order with that number or corresponding letter, numerals)
    - ▲ `Start="5"` will yield
      - 5 for number list
      - E for large alpha
      - V for roman numerals



## Anchor attributes

- ❖ Anchors (a tag) are used in two ways. Specifying which way is a attribute.
  - One is to name a point in the page
    - ▲ `name="anchormame"` (no spaces are allowed in the name of the anchor)
  - Another is to create a link
    - ▲ `href="link"`
- ❖ Another attribute used with links is `target`
  - Specifies where link will open



## Links

- ❖ To link to an named spot on the page – use # & anchor name
  - `<a href="#tea">Teas</a>`
- ❖ To link to page within same site & folder – use filename only
  - `<a href="pagename.html">My page</a>`
- ❖ To link to another site – use the full URL
  - `<a href="http://www.wcc.hawaii.edu">Windward CC</a>`
- ❖ This methods can be combined to go to a specific spot on a specific page on another site

## Targets

- ❖ `target="_self"`
  - Opens a link in the same tab/window (default)
- ❖ `target="_blank"`
  - Opens a link in a new window or tab
- ❖ `target="namedwindow"`
  - Opens a page in a new tab/window and give the tab/window a name. Any other pages which specify that same name will open in that same tab/window (providing it hasn't been closed.)
  - [Example](#)



## Special characters

- ❖ Special codes are needed to display certain characters which are also used as part of tags
  - Left Bracket `<` - `&lt;`;
  - Right Bracket `>` - `&gt;`;
  - Quote `"` - `&quot;`;
  - Copyright symbol © `&copy;`;
- ❖ Comments – to add documentation to coding, but not to be displayed
  - `<!-- -->`
- ❖ Curly Quotes “ ”
  - `&ldquo;`;
  - `&rdquo;`;
  - Note: Pasting curly quotes from word processing page into webpage text may result in odd codes displaying on the page.
- ❖ Single curly quote ‘ ’
  - `&lsquo;`;
  - `&rsquo;`;
- ❖ More codes

## Non breaking space

- ❖ Extra space - extra spaces that are typed in typed in the code are ignored. If you want extra spaces to display use the non-breaking space code. `&nbsp;`;
  - This can also be used between words that shouldn't be split between lines.
    - ▲ For instance, if I want my name to always appear on the same line instead of splitting the first and last names at the end of a line. To do this instead of typing a space between the words I can place the code `&nbsp;` between the names. The words stay together even if there is enough room on the line for the first name: Vanessa Cole



## Structure vs Design

- ❖ As web developers we need to keep these two separate in our minds and in our coding.
- ❖ Our audience, however, sees a web page with the two tightly integrated into one.
- ❖ Keeping structure & visual design separate allows for
  - Accessibility
  - Ease of updating
  - Quicker redesign

⤴ Visual design can be changed without effecting the content within the site.

## In web construction

- ❖ Structure created with a markup language such as HTML defines structural elements such as
  - paragraphs
  - lists
  - headings
  - tables
  - and more
- ❖ Visual design is added to the structure through the use of Cascading Style Sheets (CSS) to add
  - color
  - layout
  - backgrounds
  - margins
  - spacing
  - and other design elements

## Defining Page Structure

- ❖ Everything that displays on the page is within the **body** section of the HTML
- ❖ Within the body we may have layout structures.
  - Organize the page
  - Allow for layout
  - Incorporate visual design through CSS
- ❖ Important to set an ID to identify each structure
  - ID names should be MEANINGFUL

## Defining Page Structure (cont.)

- ❖ Within these layout structures we can have
  - Additional layout structures
  - Basic text and other elements
- ❖ Each layout structure can have different styles for elements.
  - For instance on this page are different divisions
    - ⤴ The unordered list within the topic list on the side of this page is styled with no bullets and white text.
    - ⤴ The unordered list within the slide area is styled with bullets and black text.

## Basic Page Areas

- For ease of design, divide pages into areas.
  - Banner or Site identity
  - Navigation
    - ⤴ Site navigation
    - ⤴ Search capability
  - Contents
  - Side bars
  - Footer
    - ⤴ Technical info
    - ⤴ Copyright information
    - ⤴ Date of last update
    - ⤴ Contact info
- Areas can be placed in HTML layout structures.
- The whole page can be also be placed within a layout element, too.
  - Helpful in limiting the width of the page in CSS.

## Layout Structures

- ❖ Previous versions of HTML had divisions `<div> </div>`
  - Divisions were often named with the ID attribute which made them easier to work with for styling purposes.
- ❖ HTML5 introduced new codes for layout of pages.
  - article - main content area `<article> </article>`
  - aside - an aside or can be used as a sidebar `<aside> </aside>`
  - footer - usually at the bottom of a page `<footer> </footer>`
  - header - usually at the top of a page `<header> </header>`
  - nav - navigation `<nav> </nav>`

## Layout Structure (cont.)

- ❖ HTML 5 structures When working with coding, these make it easier to see where items begin & end.
  - Div codes all end in `</div>` and if you have multiple divisions, it's hard to see where each ends.
- ❖ Allows for greater accessibility and better SEO (search engine optimization) with consistency of identifying elements of a page.



## Element ID

- ❖ No matter which type of structural elements is used, it's a good idea to also to use the ID attribute which makes styling easier, particularly if used more than one on a page. ID name should be unique for each element
- ❖ ID name should meaningful to help you and others involved in website construction to identify what a layout element contains.
  - `item1`, `item2` are probably not meaningful
  - `main-article`, `story`, `banner` are meaningful as they describe what is in the layout structure.
- ❖ ID names should NOT contain spaces
  - `main article` is not an acceptable ID name and will cause problems when styling the element
  - `main-article`, `mainArticle`, `main_article` are acceptable names.



## The Beauty of CSS

- ❖ To understand the wonder of CSS we will look at a site called CSSZen Garden
  - This site invites designers to take the same basic structure of a page and add design via a separate CSS style sheet.
- ❖ This site demonstrates why we separate structure from visual design.
- ❖ Hopefully you will begin to understand the beauty of keeping design & structure separate.



## First look at the structure

- ❖ Screen shot of structure – no styles

### CSS Zen Garden

#### The Beauty of CSS Design

A demonstration of what can be accomplished through CSS-based design. Select any style sheet from the list to build your site page.

Download the example [html](#) or [css](#) file.

#### The Road to Enlightenment

Learning a dark and dreary road lay the path of enlightenment, hope, acceptance, DHTML, browser, CSS support, and abandoned browsers.

We must clear the road of the past. Web enlightenment has been achieved thanks to the tedious efforts of folk like the W3C, TRIC, TRUFF, and the major browser creators.

The CSS Zen Garden invites you to relax and soothe in the important business of the country. Design to use with clarity. Learn to use the true beauty of design in a new and engaging fashion. Discover our web for web.

#### So What is This About?

There is a compelling quest to show the power of CSS. The CSS Zen Garden aims to create, inspire, and encourage participation. To begin, we cover off the existing design as the first. Clicking on any one will load the style sheet into the page. The HTML remains the same, the only thing that has changed is the external CSS file. Yes, really.

CSS allows complete and total control over the look of a document. The only way that can be broken is a way that gets people excited is by demonstrating what it can truly be, even for those who are placed in the hands of those able to create things from structure. Designers and coders alike have contributed to the beauty of the web, we can always push it further.

#### Participation

Strong visual design has always been our focus. You are modifying the page, so strong CSS skills are necessary too, but the example files are commented well enough that even CSS novices can use them as starting points. Please see the [CSS Zen Garden](#) link for advanced techniques and tips on working with CSS.

Please consider the style sheets as a page you wish to see in the future. This may mean looking at them if you've never visited this way before, but follow the link table to learn more, and use the sample files as a guide.

Download the sample [HTML](#) and [CSS](#) to work on a single locally. Once you have completed your masterpiece (and please, don't submit HTML based work) upload your CSS file to a web server under your control. [Submit link](#) to us within that file and associated assets, and if we choose to use it we will download it and place it on our server.

#### Benefits

Why participate? For recognition, inspiration, and a resource we can all refer to showing people how amazing CSS really can be. The site serves as equal parts inspiration for those working on the web today, learning how for those who will be tomorrow, and a resource for those who are already there.

## Next explore the designs

- ❖ All pages have the exact same structure.
- ❖ Changes are only to the external CSS style sheet.
- ❖ [CSS Zen Garden](#) then click on links to other pages
- ❖ This site demonstrates why we separate structure from visual design.
- ❖ Hopefully you will begin to understand the beauty of keeping design & structure separate.





## Develop for Usability & Accessibility

Web pages for all

## Usability & Accessibility

- ❖ Can the audience get the information they need?
    - Readability
    - Find-ability
    - Alternatives
    - Proper structural elements used
    - Style sheets for design & layout
    - Sizing gracefully
    - Simplest solutions used
  - ❖ See first lesson for definitions
- 

## Usability: Readability

- ❖ Text should always be readable.
  - Not readable -> message not received
- ❖ Background and text colors should have high contrast.
  - If using background graphics, they should not detract from readability of text.



## Usability: Readability (cont)

- ❖ Typography – making it easier to read
    - Typeface/font used
      - ▲ Use decorative fonts only for short text, not full paragraphs
    - Letter spacing – proportional spacing
    - Line spacing
      - ▲ Extra space between lines increases readability
      - ▲ Recommended 120% line spacing
  - ❖ Limit length of lines
    - Text lines which stretch the entire width of a screen can be difficult to read
- 

## Readability: Fonts on Web

- ❖ Fonts are copyrighted
    - Can not be copied to audience's computers.
    - HTML 5 allows downloading open source or public domain fonts
      - ▲ Downloading of fonts slows the loading of the page
  - ❖ No fonts = web browsers use default fonts
    - Reader can specify one they prefer
    - Defaults can be boring, though
  - ❖ Use standard font sets for readability
    - Standard fonts come with operating system
      - ▲ Each operating system has different set
- 

## Font Sets

- ❖ Font sets are listing of several possible fonts
    - The browser tries the first font. If the font is missing, the next font is tried, and so on.
      - ▲ Example: Times New Roman, Times, serif
    - List a generic font type at the end of the font set
      - ▲ Serif
      - ▲ Sanserif
      - ▲ Monospace
      - ▲ Cursive
      - ▲ FANTASY
    - If none listed, browser substitutes any font
      - ▲ Might not be as readable
- 

## More on Readability

- ❖ Can the audience understand what is written?
  - Use clear and concise writing
- ❖ Use headings to make it easier to scan
  - Readers scan web pages until they get to the information they want.
  - Remember heading should be act as an **outline** for your page.
  - For accessibility, audio browsers can be set to read the headings first
    - ▲ Audience selects what to listen to

## Clear & concise writing

- ❖ Bad example: One practice that should be avoided is that of obfuscating and adumbrating the meaning and connotation of the message with verbosity and plurality of complex words, in order for the communication to be disseminated to a panoptic audience.
- ❖ Good example: Use clear and concise writing to spread your message to the widest audience.

## Usability: Find-ability

- ❖ Can the audience find what they need?
  - Clearly Organized
  - Keep most pages within 3 clicks of the main page.
  - Clearly & appropriately labeled navigation
  - Consistent navigation
    - ▲ All pages on a site have navigation that displays in the same ways.
  - All links should work
  - Consider offering search options
  - Avoid confusion – underlines for links only
    - ▲ Don't use underlines for text style
    - ▲ Use emphasis

## Usability: Page layout

- ❖ Avoid distractions
  - Too many choices in navigation
  - Repeating animation –pulls reader from content
  - Too busy – eyes are pulled ever which way
- ❖ Use white space to break up layout
- ❖ Keep it simple
- ❖ Accessibility factors:
  - Use tables for data only (not for layout!)
  - Use CSS for layout!
    - ▲ Allows pages to transform gracefully

## Usability: Main page

- ❖ The main page of a site is the page that opens whenever your domain or web address is entered.
- ❖ Special usability concerns
  - Fast loading – if the site takes too long to load, readers may move on to another site
  - Informative & inviting – the audience should want to read more of the site.
    - ▲ Brief description of what site is about
    - ▲ Don't overwhelm with choices
    - ▲ Be visually appealing
    - ▲ Present easy to use and accessible navigation

## Why is Accessibility Important?

- ❖ Not everyone's abilities are the same
- ❖ Some of your audience may have
  - Difficulty seeing page
    - ▲ Blindness, visual distortion, low vision, color blindness
  - Difficulty hearing audio
    - ▲ Deafness, low hearing, or just not having speakers
  - Movement difficulties - navigation
    - ▲ Arthritis, Parkinson's, impaired fine motor skills.
  - Other difficulties such as
    - ▲ Reading disabilities, Epilepsy
  - Many other differences can effect web site accessibility

## Accessibility laws

- ❖ Laws governing accessibility
  - American Disabilities Act
  - Section 508 Rehabilitation Act American Disabilities Act.
- ❖ Required by law
  - Government agencies
  - Organizations receiving federal monies
  - Laws vary by country.
- ❖ Even if not required by law, it's a good idea!
  - Sites that are more accessible are often easier for everyone to use

## Making a site accessible

Provide alternatives.

- ❖ Alternative text for images
  - Short and accurate description of images
    - ▲ Provide equivalent experience
  - Use a space for decorative or spacing graphics
- ❖ Long descriptions of videos and some graphics
- ❖ Transcripts of audio
- ❖ Alternate methods of accessing
  - Make top item in a pull down list clickable
  - Provide text in addition to image maps

## Making a site accessible (cont)

- ❖ Don't rely on color alone to transmit information
  - Images should be understandable without color
  - Provide alternatives to color coded text
- ❖ Use proper structural markup
  - Use Headings
    - ▲ Don't just increase font size
    - ▲ Headings are like an outline
  - Paragraphs, blockquotes, lists used appropriately
- ❖ Use style sheets for design and layout

## Sizing Graceful

When possible allow pages to size gracefully to the user's equipment and preferences

- ❖ Specify text sizes as percentages or ems instead of points or pixels
  - Don't specify size of normal text
  - Use % or em for headings
  - Specify line height as % or em
- ❖ Avoid horizontal scrolling
  - Specify widths of elements

## The Simplest Method

- ❖ Use the simplest possible method to achieve a result.
- ❖ Don't use scripting if the same thing is available in simpler mark-up or style sheets.
  - Example why use Javascript to do roll-over changes when the same thing can be achieved through CSS.
- ❖ Simplicity is best!

## Web Media

Images, Sound, Video



## What is Web Media

- Media – various forms of communication such as text, audio, visual
  - Multimedia is using more than one media convey the message
- Web media is media that is presented on the web
  - File size is an important factor
    - Smaller file = quicker download
  - Often when we refer to web media we are referring to audio/visual types of media.



## Accessibility & Web Media

- Alternatives to media is crucial for relaying your message to audience members, who may have different abilities
- Some of the alternatives which may be required are:
  - Text descriptions for foreground images and animations, if more complex, long descriptions on a separate page may be needed
  - Audio with speaking should have transcripts available
  - Audio incorporated into video should have captions and/or transcripts
  - Video and animations may need to have long descriptions describing the what is happening in the video or animation
  - Interactive and image map navigation may need alternate text navigation



## Working with Images

Visual Appeal & Professional Appearance



## Image Uses

- Images can
  - Visually enhance pages
  - Provide site identity & unify site
    - Logos & Banners
- Foreground images
  - Provide information
  - Illustrate points
  - Identify people, places, things.
- Background images
  - Part of the styling for the page
  - May be applied to
    - full pages
    - individual elements
  - More on backgrounds when we get to CSS



## Image Editing Software

- To create, edit, size images, use image editing software.
- Some software that allow you to work with images are:
  - Pixlr (Free online)
  - IrfaView (Windows - free download)
  - iPhoto (Apple)
  - Adobe Photoshop/Illustrator/etc. (high end)
  - and many more



## Graphic Editing Terms

- Size - change the dimensions of a graphic



- Crop - cut part of graphic off
- Flip – turn the picture over either vertically or horizontally



- Rotate - turn graphic around by specified degrees



## Graphic Editing Terms

- Transparency – Part of graphic that is invisible allowing background colors to show through. (Shown below same graphic on different backgrounds)



- Convert – change to a different format
- Palette – colors used in an image

## Size proportionately

- Size graphics proportionately (maintain or preserve aspect ratio, constrain proportions)
- Particularly photographs or logos



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## Image File Formats

- JPG
  - Best for photographs and multi-colored images
  - Lossy compression – loses some resolution when saved at less than 100%
    - If editing repeatedly & saving at lower compression, quality will decrease every time
- GIF
  - Better for line art
  - File size can be made smaller by using fewer colors.
  - Allows transparency
    - background graphic or colors show through
  - Can be animated

## More formats

- PNG
  - Designed to replace other forms...
  - Lossless compression
  - Can create larger files than either GIF or JPG
  - Can also have transparency
- TIF, BMP, WMF
  - Not appropriate for web
    - Large files = long download time
    - Not all browsers, computers can read these

## Optimal Image File Size

- Large image files can slow loading of a web page.
  - Photos taken with digital cameras are often much larger than needed for the web page.
- Optimally, the dimensions of an image specified in the HTML should match the actual dimensions of the image.
- **To keep file size optimal, it is best to edit an image BEFORE placing on page in any web creation program.**

## Use Image editing software

- Use a separate image editing program to work with images
- Images sized with HTML do not change actual image size but merely specify different display dimensions - this is not optimal
- It is imperative to edit the images first.



## Incorporating Images

- HTML Coding

```

```

  - *Filename* is the complete file name. If in a different folder specify the location as well.
  - *Alternative text* describes the image as described in the following slides
  - *nn* is the measure in pixels
  - An attribute that is used when the image has a long description on separate page can be added into the img code

```
longdesc="filename"
```
  - ``



## Images are separate files

- Notice in the code, the image filename is shown. The image is not actually in the webpage, but exists in a separate file and web browsers display it in the page. Image files will need to be uploaded to the server in addition to the web page.



## Audio & Video

Enhancing the user experience



## Uses of audio

- Background sound
  - Begins playing when page is loaded
  - Adds flare to page
  - Some may find annoying
- Foreground audio
  - Part of the message of the website
  - Might begin playing when page is loaded or have controls to star



## Common Sounds File Types

- Computer Generated
  - Musical Instrument Digital Interface (.midi)
    - small file sizes
- Compressed formats
  - Motion Picture Experts Group (.mp3)
  - Window Media Audio (.wma)
  - Ogg Vorbis (.ogg)
    - Non- patented open format
    - W3C recommends for HTML5
    - Not supported by all browsers
- Non compressed formats (These are large file sizes and **NOT** recommended for web)
  - Waveform audio (.wav)
    - Developed for Windows computers
  - Audio Interchange File Format (.aiff)
    - Developed for Apple computers



## Video

- Can be with or without audio
- Animation
  - Simplest form is an animated GIF (no sound)
  - Flash
  - Silverlight
  - others
- Recorded Video
  - via a video camera
  - via screen recording

## Audio & Video Presentation

- Streaming technology
  - Allows sound & video to start playing before file is completely downloaded
  - Long downloads don't matter as much since user starts seeing/hearing as it downloads.
  - Depending on connection speed and usage presentation can be choppy
  - User might not be able to save the file

## Audio & Video Presentation<sub>(CONT)</sub>

- Downloading
  - Allows user to save the file and play back later.
  - User has to wait until finished downloading to view/listen
  - Presentation is smoother
- Linked media
  - Media can be accessed by creating a link instead of incorporating it into a web page
    - May be played by browser with appropriate plug-in
    - Some files can be saved to the hard disk then played

## Video Servers

- Easiest way to deal with videos
  - Vimeo
  - YouTube
  - Others
- Upload, service provides code
- Advantages

## Video Servers – Pros & Cons

- Advantages
  - Doesn't use up your server space & bandwidth
  - Easy to use & code provided
  - Placed in the search capability of the video server so may drive others to your site (if you provide links to your site)
- Disadvantages
  - Sometimes advertisements are added
  - Placed in the search capability of the video server - anyone can find there.
    - Example - company intranet

## HTML 5 Video & Audio

- The audio code replaces the object & embed codes for audio
  - Example:

```
<audio src="file.ogg" controls="controls">
</audio>
```
- The video code replaces the object & embed codes for video
  - ```
<video src="file.mov" controls="controls">
</video>
```

## Linked Media

- Media can be accessed by creating a link to the media file
  - May be played by browser with appropriate plug-in
  - Some files can be saved to the hard disk then played

