Midterm Notes

HTML

* Hyper Text Markup Language
* Markup is a way of document to have designated meaning
* Created by Tim Berners-Lee
* The latest version is HTML 5.1
* Language used to create/ design web page
* HTML focused on structure and content while CSS handle the presentation/ aesthetic while JavaScript handles the behavioral aspects
* Some outdated things in HTML
* <br>
* <body background= "red"></body>
* Styles that is used by html
* W3C is responsible for Evolving HTML and one of its founder is Tim Berners-Lee
* Flexible unlike XML

HTML History

* 1989 - HTML 1.0
* 1994 - HTML RFC 1866
* 1995 - W3C was Established
* HTML 3.0 - was immediately superseded
* January 1997 - HTML 3.2
* December 1997 - HTML 4
* 1999 - HTML 4.01
* 2000 - XHTML 1.0
* XHTML 1.1
* XHTML 2.0
* 2014 - HTML 5

XHTML

* Extensible Hypertext Markup Language
* Reformulation of HTML
* Takes HTML and enforces stricter rules on it
* After the development of HTML 4.01, W3C decided to stop evolving HTML and created XHTML instead

XML - Extensible Markup Language

* Structured data/ markup for data
* For data interchange
* Rule are very strict
* Case Sensitive
* Proper Nesting
* Example :
* <student>
* <idno>2150000</idno>
* </student>

HTML 4.01

* Had 3 flavors
* Transitional – with deprecated elements and attributes
* Strict – no deprecated elements and attributes
* FrameSet

HTML 5

* Developed by WHATWG consisting of Ian Hickson, Apple, and Mozilla
* Created when XHTML was not working
* Standardized in 2014

HTML Syntax

* <!DOCTYPE html>
* <html>
* <head>
* <title> </title>
* </head>
* <body>
* <header> </header>
* <footer> </footer>
* </body>
* </html>

<!DOCTYPE html>

* To render webpage using standards
* Rendering a webpage using standards will make the presentation of the webpage consistent throughout different browsers
* When not indicated in the HTML document, the webpage will be rendered using quirks and the presentation might differ from one browser to another

<head>

* contains metadata such as links, information of author, and others

<body>

* contains paragraph and content

Sample elements

* <h1> Sample Element </h1>
* <p> Paragraph </p>

Sample tags

* <h1></h1>
* <p></p>
* <br>
* <header></header>

Void Elements

* empty element that does not have tags
* Some example
* <img>
* <br>

Character element

* reduce ambiguity
* Some example
* &amp
* &lt
* &nbsp

Link element

* No end tag
* Child of head tag
* Associate with html the css, js, images, etc.

HTML Elements

* html – parent element
  + head
    - title, base (relative url), link, meta (other meta information), style (embedding css within the html file) – metadata elements
  + body – actual content
    - article, body, nav, section – introduced for HTML 5
    - header, footer
    - main
    - address
    - div – generic sectioning element
    - h1, h2, h3, h4, h5, h6 – heading in an html document
    - p
    - hr – thematic break
    - pre – preformatted text
    - blockquote – citations; larger than block
    - ol, ul
      * li
    - dl
      * dt, dd
    - figure
      * figcaption
    - a
    - em (emphasis), strong, small (side-comment), s – obsoleted text
    - cite, q
    - dfn (definition), abbr
    - ruby (base annotation), rb, rt, rtc, rp – ruby annotations
    - data, time – machine-readable data
    - code (computer code), var, samp, kbd
    - sup, sub
    - i, mark
    - bdi, bdo – bi-directional text
    - span – generic divider, embedded within
    - br, wbr (break opportunity; where to break when wrapping text)
    - ins, del
    - table
      * caption
      * cdgroup, col
      * thead, tbody, tfoot
        + td, th, tr
    - form
      * label
      * input
      * button
      * select
    - picture
    - img
    - iframe
    - embed

Cascading Style Sheet

* language used to specify presentation aspects of structurally marked up documents
* developed by Håkon Wium Lie and Bert Bos
* managed by W3C
* versions
  + 1 (December 1996)
  + 2.1
  + 3
    - W3C decided to change tactics
    - Subdivided into modules (no more monolithic)
    - No more CSS4, just upgrading modules
* CSS3 Preprocessors, CSS Frameworks
  + Sass, Less, 960 Gad System, Bootstrap, Foundation, Materialize, etc.

HTML/XHTML Stylesheets

* Author style
  + Author planned the style
* User style
  + User applied the style
  + Becoming faced out
* User agent style
  + Example default CSS2.1 stylesheet for HTML 4
  + Default stylesheet from browsers
  + May not be the same for every platform

Reset CSS

* Create something like the default stylesheet and link to documents

Media

* Screen, print, speech (CSS3)

Media query

* Information about the device used
* For responsive designs

Alternate stylesheet

* For alternative designs
* Goes along with title (for the name of the alt)

CSS Statements

* At-Rules (not all are fully supported)
  + @charset – character set used
  + @import – get another css
  + @namespace – formatting svg
  + @document – rules for a specific page
  + @font-face – define a font; embedding font
  + @keyframes – for animation
  + @media – media queries
* CSS Rule Sets
  + Consists of a selector

CSS Selectors

* Selectors
  + Determine which elements are to be formatted
  + Matched elements are called subjects
* Selector syntax
  + Chain of sequences of simple selectors separated by combinators, with one pseudo-element possibly appended to the last sequence
  + Sequence of simple selectors
    - Chain of simple selectors not separated
    - Always start with a type selector or universal selector
    - Cannot contain other type selector or universal selector in one sequence

Simple Selectors

* Type selector
* Attribute selector
  + Targeting an element based on the attribute
  + [attr]
  + [attr=value] – attribute must be exact
  + [attr~=value] – one value among space-separated values
  + [attr|=value] – for targeting the lang attribute; starts with the value
  + [attr^=value] – starts with
  + [attr$=value] – ends with
  + [attr\*=value] – anywhere
* Class selector
  + Starts with a dot (.)
  + .p {}
* ID selector
  + Starts with the pound sign (#)
  + #a {}
* Pseudo-class
  + Implicit class
  + Dynamic
    - Link
      * :link – all links
      * :visited – links that were visited
    - User-action
      * :hover – pointer hovering over an element
      * :active – activate elements (i.e. clicking a button)
      * :focus – for forms; focus is moved to the element
  + Target
    - :target – targeting specific element when visiting
  + Language
    - Target language attribute
    - :lang()
  + UI element states
    - :enabled
    - :disabled
    - :checked
    - :indeterminate
  + Structural
    - DOM tree
    - :root – the root element
    - :first-child – element that is a first child
    - :last-child – element that is the last child
    - :only-child – only child of an element
    - :nth-child() – target child based on number
    - :nth-last-child() – count from last
    - :first-of-type – first of its type in a section
    - :last-of-type – last of its type in a section
    - :only-of-type – only of its type in a section
    - :nth-of-type() – nth of its type in a section
    - :nth-of-last-type() – start counting from last
    - :empty – does not have any content
  + Negation
    - Descendant
      * White space (i.e. space, tab, line feed, carriage return, form feed)
    - Child (>)
      * Immediate descendant
    - Sibling
      * Same parent
      * Adjacent sibling (+) – immediately follows
      * General sibling (~) – any element that follows
    - Pseudo-element
      * :first-letter/::first-letter – just the first letter
      * :first-line/::first-line – first line of the content
      * :before/::before – content before an element
      * :after/::after – content after an element

CSS Rule Precedence

* By origin & importance
  + User agent important declaration
  + User important declaration
  + Author important declaration
  + Author normal declaration
  + User normal declaration
  + User agent normal declaration
* By specificity
  + Inline style – more specific
  + Number of ID selectors
  + Number of class selectors, attribute selectors, and pseudo-classes
  + Number of type selectors & pseudo-elements
* By order

CSS Declaration

* Properties
  + Shorthand properties
  + Vendor-specific extensions (a.k.a vendor prefixes)
* Values
  + Keywords
  + Numbers (integers & real in decimal notation)
  + Dimensions
    - Length units
      * Font-relative: em, px, ch, rem
      * Viewport-percentage: vw, vh, vmin, vmax
      * Absolute length: cm, mm, q, in, pt, pc
    - Angle units: deg, grad, rad, turn
    - Duration units: s, ms
    - Frequency units: hz, khz
    - Resolution units: dpi, dpcm, dppx
  + Percentages
  + URLs & URIs
  + Colors
  + Strings
  + Functions

CSS Preprocessors

* Sass
  + Syntactically awesome stylesheet
  + Most common
  + Can assign variables
  + Built on top of GUI
* Less
  + Works on javascript

JavaScript:

* + Developer: Brendan Eich
  + Browser: Netscape Navigator
  + Year: 1995
  + Company: Netscape

Web Standards Project (WaSP):

* a group of professional web developers dedicated to disseminating and encouraging the use of the web standards influenced by W3C.

JavaScript Frameworks:

* + jQuery
  + MooTools
  + Prototype
  + YUI Library
  + Dojo Toolkit