**MIDTERMS**

**HyperText Markup Language (HTML)**

**-** by Tim Burners Lee

- is the standard markup language for creating web pages and web applications.

- takes document using markup.

- Structure & Content (Main focus)

-Presentational / aesthetic (old format)

**Website**- is a collection of web resources such as wen pages and web applications.

- it is being host.

**World Wide Web Consortium (W3C) –** Tim Burners Lee

* + - Is an international community that develops open standards to ensure the long-term growth of the web.

Not already recommended codes in HTML:

* Character entities:
  + &nbsp –tab
  + &lt – less than
  + &gt – greater than
* <br>
* Tables –for tabular presentation.

**HTML versions:**

Current – 5.1

HTML 1.0 – 1989

2.0 – Nov 1995 RFC18661L

3.0 – superseded by 3.2

4.0 – December, 1997

4.1 – 1999

**Extensible HyperText Markup Language (XHTML)**

Version: 1.0 – January 26, 2000

Revised August 1, 2002

* + - It is used for data interchange
    - Wrappers up structure of a document

**Ian Hidson** – proposed to go back to HTML

**-** WHATWG

- later becomes HTML5 that is standardized in 2014

HTML 4.0

* **Transitional** – depreciated
* **Strict**
* **Frameset**

**The Elements of HTML**

**Index of Attributes**

Grouping

Categories

Flow:

* Heading
* Sectioning
* Interaction
* Phrasing
* Embedded
* Metadata

Content

* + - Flow content is expected
  + Content Model
    - Phrasing Content
  + Content Attribute
    - Global Attribute

Ex. Id, title, long, alt, src

**ARIA state and property attributes**

* + Global ARIA – attributes

**DOM interface**

* + - interface HTML Paragraph Element : HTML Element

Paragraph in HTML is Thematic a content

Content in w/c this element can be used: Embedded Content

Tag Omission in text HTML: No end tag

**Summary of HTML Elements**

Html  
 head  
 title, base, link, meta, style

Body  
 article, aside, nav, section

header, footer

main

address

div

h1, h2, h3, h4, h5, h6

p

hr

pre

blockquote

ol, ul

li

dl

dt, dd

figure

figcaption

a

em, strong, small

cite, q

dfn, abbr

ruby, rb, rt, rtc, rp --→ ruby anotations

data, time

code, vaar, samp, kbd

sup, sub

l, b, u, mark

bai, bdo

span

table

caption

colgroup, col

**CASCADING STYLE SHEET (CSS)**

CSS

* language used to specify the presentational aspects
* Developed by Hakon Wium Lie (CHSS) and Bert Bos (SSP)

Versions

* css 1 , css 2.1, css3

CSS Preprocessors, CSS Frameworks

* Sass, Less, 960 Grid System, Bootstrap, Foundation, Materializa, etc

**===HTML/XHTML STYLESHEETS===**

* author styles (external stylesheets,embedded styles, inline styles)
* user style
* user agent styles (example default css 2.1 stylesheet for HTML 4)

\* Reset CSS – overide the default stylesheet

**===CSS Statements===**

* At-Rules
  + @charset, @font-face @import ‘global.css’, @namespace, @document, @font-face, @key frames, @media, @page
* css rule sets (a.k.a CSS rules, style rules)
  + consults of a selector, followed by a declaration block.

**===CSS Selectors===**

* Simple Selector
  + either a type selector or universal selector followed by zero or more attribute selector , ID selectors or pseudo classes.
* Selector Syntax
  + Chain of one or more sequence of simple selectors by combinators.
* Type selector
  + matches the name of a document language element type.
* Universal selector
  + written "\*", matches the name of any element type.
* Attribute selector

[attr]

[attr=value]

[attr~=value] – space separated values

[attr|=value] –target long attribute

[attr^=value] -beginning (CSS3)

[attr$=value] –End (CSS3)

[attr\*=value] –Everywhere (CSS3)

* ID selector

- match an element instance based on its identifier.

-A CSS ID selector contains a "#" followed by ID value.

* Pseudo classes
  + classify elements on characteristic other than their name, attributes or content.
  + there's is implicit class associated with.
* Dynamic pseudo class
  + link pseudo-classes
    - link - link that have not yet visited.
    - visited - link that have been visited.
  + user action pseudo class
    - * hover
      * action - active a link
      * focus - move particular element
      * target pseudo classes
      * language pseudo classes

:lang()

* UI element states pseudo classes

-:enabled (CSS3)

-:disabled (CSS3)

-:checked (CSS3)

-:inderminate (css3)

* Structural

-:root

-:first-child

-:last-child

-only-child

-:nth-child

-:nth-last-child

-:first-of-type

-:last-of-type

-:only-of-type

-:nth-of-type

-:nth-last-type

-:empty

negation

:not() - negates the logic of the selector.

* Combinators
  + descendant combinator (whitespace i.e. space, tab, line feed, carriage return, form feed)

--child combinator(>)

adjacent sibling combinator (+)

general sibling combinator (~)

Pseudo elements

::first-letter :first-letter

::first-line :first-line

::before :before

:: after :after

**===CSS Rule Precedence===**

* **by origin and importance**

1. Transition Declarations
2. Override declaration
3. User declaration
4. Animation Declaration
   * user agent important declarations
   * user important declarations
   * author important declarations
   * author normal declarations
   * user normal declarations
   * user agent nor mal declarations

* **by specificity**
  + inline – more specific
  + number of ID selectors
  + number of class selectors, attribute selectors and pseudo selectors
  + number of type selectors and pseudo elements
* **by order**

**===CSS Declarations===**

* **Properties**
  + **short hand properties**
    - background , font
  + **vendor specific extension (aka vendor prefixes)**
* **values**
  + **keywords**
    - **inherit,**
  + **numbers**
  + **measurements**
    - length units
      * font relative
        + em, ex, ch, rem
      * viewport percentage
        + vw, vh,vmin, vmax
      * absolute lengths
        + cm,mm,q, in pt, pc, px
    - angle units
      * deg, grad, rad, turn
    - duration units
      * s, ms
    - frequency units
      * hz, khz
    - resolution units
      * dpi, dpcm, dppx
* **percentages**
* **URLs and URIs**
* **Colors**
  + Rgb( , , ), #rgb,rgba, hsl, hsla
* **Strings**
* **Functions**
  + calc(), attr(), count(), linear-gradient(), translate(), scale(), rotate(), etc.

**Values and Units Module Level 3**

**CSS Preprocessors, CSS Framework**

* SCSS(Sassy Cascading Stylesheet), 60 Grid System, Bootstrap, Foundation, materials, etc.

# JAVASCRIPT CLIENT SIDE SCRIPTING

**Javascript**

* Is a client-side scripting language that dynamically provides interaction to web applications such as
  + games
  + events
  + carousels
  + image galleries
  + responses to button clicks
* used for computations
* It has scripting knowledge, and it is a C base language
* It is a lightweight interpreted or JIT-compiled programming language with first-class functions
* Standard – ECMA 262

ECMA 5 – Almost all browser support this

Different ways to script:

1. console.log(‘externally linked script….’);
2. <script> -(global)

console.log(‘embedded script….’);

function callme(){

console.log(‘you added me’);

}

</script>

1. <button onclick = ‘console.log(“inline script…”);’> click me </button>

**Script –**it should be executing in a ‘sandbox’

* **Defer**- to execute other part of the document
* **Async –** intermix in rendering, don’t wait until the whole document is executed.

**\* <no script>**  - only display if a user doesn’t have script

**Attribute**

* **Global attribute**

Example:

window.navigator.vendor(app version, etc)

window.screen.

window.document.getElementByID(‘h’)

h = document.getElementByID(‘h’)

<h1 id= “h”>

<p> Javascript</p>

</h1>

* **Certain attribute**

W3C:

Document Object Model Core

Document = Node

document extends node

**Interface Node**

**Node**- is the primary datatype for the entire Document Object Model.\

- represents a single mode in the document tree

|  |  |  |
| --- | --- | --- |
| Node Name | Node Type | Node Value |
| “#text” | 3 | “hi” |
| “#document” | 9 | null |

**Child Nodes**

Ex.

document.body.childNodes[0]

document.body.childNodes[length]

document.body.firstChild

document.body.firstChild.nextSibling

others:

insertBefore

replaceChild

removeChild

appendChild

hasChildNode()

**Variable, Let, Constant (var, let, const)**

**Variable-** associated with global content

Example:

<script>

var x = 100;

function f() {

var x =200;

{

var x = 300;

}

} </script>

**let-** not associated w/ global content

Example:

<script>

let x = 100;

function f() {

let x =200;

{

let x = 300;

}

} </script>

**Const-** cannot modify value

- have constant value

**Standard Objects**

**-** get to know standerd built-in objects Array, Booleans, Date, Error, Function, JSON, Math, Number, Object and others

**Expressions and Operatiors**

**-** learn more about the behavior of Java Scripts operators instance of typeOff, new, this, the operator precedence and more

**Array**

Example:

var emptyArray = new Array();

var alsoEmptyArray = [];

var arrayWithLengthFive = new Array(5);

var array = new Array(‘5’);

var sameArray = [‘5’];

**Methods**

* **Mutator methods**

**-** Method use to modify the target.

**-** It does change the target array.

* Accessor

- Don’t modify the target array

ex.

.pop() - remove the last element

.push() – adds into the end of array

.splice

.sort()

.every() – if a condition is satisfied, it wil return true

.map() – returns a certain values of the site.

.reduce() - accumulator

Researches:

**Html**

**Definition**

HTML or HyperText Markup Language is computer language that is used to create webiste. It is use for the content of a website. And the tools besides of HTML are generally used to describe a webpage's appearance/presentation (CSS) or functionality (JavaScript).

According to MDN or Mozilla Developer Network that “*HyperText* refers to links that connect webpages to one another, either within a single website or between websites. Links are a fundamental aspect of the Web. By uploading content to the Internet and linking it to pages created by other people, you become an active participant in the World Wide Web. And HTML uses *markup* to annotate text, images, and other content for display in a Web browser. HTML markup includes special "elements" such as <head>, <title>, <body>, <header>, <article>, <section>, <p>, <div>, <span>, <img>, and many others.”

HTML. (n.d.). Retrieved from https://developer.mozilla.org/en-US/docs/Web/HTML

**History**

Berners-Lee developed and defined the HTML language, which was created and defined using SGML, during the development cycle for the first Web browser/editor from October to December 1990. The first version of the browser initially ran only on the NeXT platform and was only processing text files, but it was a start. Berners-Lee later put the code and specifications for the project (including HTML) on the Internet in the summer of 1991. During the next few years the system introduced by Berners-Lee caught on in the Internet community - and the 'web' of documents available was steadily growing. A common library of code was available to programmers to easily create the needed capabilities to access web documents. Browsers quickly became available for a wide variety of platforms. As the number of implementations grew, the variety did also. The HTML language originally specified by Berners-Lee had developed and extended far beyond its initial form and no real standard had yet been developed.

Wilson, B. (n.d.). HTML Overview. Retrieved from http://www.blooberry.com/indexdot/history/html.htm

**Quick version**

|  |  |  |
| --- | --- | --- |
| **Version** | **Year** | **Specification Document** |
| HTML 1.0 | 1990 | No Official Documentation |
| HTML 2.0 | 1995 | RFC 1866 |
| HTML 3.0 | 1995 | W3C Recommendation |
| HTML 4.0 | 1997 | W3C Recommendation |
| HTML 4.1 | 1999 | W3C Recommendation |
| XHTML 1.0 | 2000 | W3C Recommendation |
| XHTML 1.1 | 2001 | W3C Recommendation |
| HTML 5.0 | 2014 | W3C Recommendation |
| HTML 5.1 | 2016 | W3C Recommendation |

**CSS**

Cascading Style Sheets (CSS) is a style sheet language written in a markup language, is used for formatting Web pages layout. While HTML is for the structure and content of a Web pages, CSS is a language used to specify the presentation aspects of web pages. It is used to design HTML; define text styles, layout display, format table sizes and other formatting aspects for HTML.

**History**

CSS like HTML, W3C standardized CSS and make it open for all and released in 1996. It was first proposed and developed by Hakon Wium Lie (CHSS) on October 10, 1994 and Bert Bos (SSP) who become the co-author of CSS. But it was not a new idea that time, Tim Berners-Lee on 1990 wrote his NeXT browser/editor specify a simple style sheet.

**Versions**

**CSS 1**

Hakon Wium Lie and Bert Bos developed the first CSS and was standardized and recommended officially by W3C. It is the CSS level 1 and it was published December 17, 1996. It is capable of: formatting font properties; Changing of color of some elements such as text and backgrounds; Layout of text, tables, and images; Capable of making and editing paddings, border, margin and positioning of elements. It can also specify foreground and background color, as well as background images.

**CSS 2**

Developed by W3C, CSS level 2 was published and recommended by W3C on May 1998. It added some capabilities like making boxes that behaves like tables, availability of powerful selectors, specification of positioning of elements, availability of media types, style rules, added some font properties and bidirectional text. It was revised and called CSS 2.1, due to the fixing of errors and removes poorly supported features. CSS 2.1 become a Candidate Recommendation first on Febraury 25, 2004 and was developed further more until it was become a W3C recommendation on June 7, 2011.

**CSS 3**

CSS3 was divided into what they called ‘modules,’ meaning it was separated into several documents. Each module can be a recommendation by different people, but some specifications are implemented by any browsers. Some module have new capabilities, some have extended features. Drafts of CSS 3 was released June of 1999. 50 CSS 3 modules was released as of June 2012, but only four of these are considered formal recommendations such as: Media Queries, Namespaces, Selectors Level 3 and Color.

**CSS 4**

It doesn’t have a single CSS 4 specification, and there is no standard name CSS 4, but it is divided into modules, and it does have level 4 modules. These level 4 modules are preceding the functionalities of level 3 modules, like the modules Selectors, Image Values and Background & Borders.

References:

<https://www.w3.org/Style/LieBos2e/history/Overview.html>

http://www.corelangs.com/css/basics/versions.html

**HTML/XHTML STYLESHEETS**

* **AUTHOR STYLES** (External stylesheets, Embedded styles, Inline styles)

Author is the one who made the codes of the CSS and embeds it to use it for websites. Author styles is the CSS file that is linked into the HTML. It is the default CSS style that the author of the code made.

**External Style Sheet**

- External CSS files that is in .css format contains stylesheet rules that will be included together with your HTML document that will be linked using the <link> tag.

**Internal Style Sheet**

- It is the CSS stylesheet rules that is embedded inside of your HTML document. It is located inside of the header section by the <style> tag

**Inline Style Sheet**

- Using the style attribute, you can define the style rules that will be apply directly into your specific HTML elements. It is good to use for making a particular style for one element, because it overrides the rules of an External CSS rules.

* **USER STYLE**

The users or the site’s visitors are the one who is viewing your website. User style allows the users to optionally override the style of the author, by defining their own stylesheets. They can set rules about font sizes, system colors and others to satisfy their own preferences.

* **USER AGENT STYLES** (example default CSS 2.1 stylesheet for HTML 4)

Browser applications such as Google Chrome and Mozilla Firefox are examples of the User Agent. We use these browsers to view websites. User agents has its own default stylesheet, but you can inspect the properties of the website that you are viewing.

References:

<http://stackoverflow.com/questions/7022344/whats-difference-between-authors-style-readers-style-agents-style-or-aut>

<https://www.tutorialspoint.com/html/html_style_sheet.htm>