TỔNG QUAN

Contents

- Introduce HTML
- Introduce CSS
- Introduce Javascript

Introduction

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A Rough History of Web Standards

91-92	93-94	95-96	97-98	99-00	01-02	03-04	05-06	07-08	09-10	11-12	13-14
HTML 1	HTML 2		HTML 4	XHTML 1					HTML 5		
		CSS 1	CSS 2			Web 2.0			CSS3		
		JS	ECMA, DOM	DOM 2			Ajax		DOM, APIs		

HTML 5

2004	WHATWG started
2008	W3C Working Draft
2012 (2010)	W3C Candidate Rec
2022	W3C Rec

CSS

1996 – CSS 1	W3C Rec
1998 – CSS 2	W3C Rec
1999 – CSS 3	Proposed
2005 – CSS 2.1	W3C Candidate Rec
2001 – CSS 3	W3C Working Draft

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HTML

HTML

- HTML stands for **H**yper**T**ext **M**arkup **L**anguage
- HTML describes the structure of Web pages using markup
- HTML elements are the building blocks of HTML pages
- HTML elements are represented by tags
- HTML tags label pieces of content such as "heading", "paragraph", "table", and so on
- Browsers do not display the HTML tags, but use them to render the content of the page

HTML5 - New Features

- **New Semantic Elements** – These are like <header>, <footer>, and <section>.

- **Forms 2.0** – Improvements to HTML web forms where new attributes have been introduced for <input> tag.

- **Persistent Local Storage** – To achieve without resorting to third-party plugins.

- **WebSocket** – A next-generation bidirectional communication technology for web applications.

- **Server-Sent Events** – HTML5 introduces events which flow from web server to the web browsers and they are called Server-Sent Events (SSE).

- **Canvas** – This supports a two-dimensional drawing surface that you can program with JavaScript.

HTML5 - New Features

- **Audio & Video** – You can embed audio or video on your webpages without resorting to third-party plugins.

- **Geolocation** – Now visitors can choose to share their physical location with your web application.

- **Microdata** – This lets you create your own vocabularies beyond HTML5 and extend your web pages with custom semantics.

- **Drag and drop** – Drag and drop the items from one location to another location on the same webpage.

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HTML Extended

- Document Flow: div, section, article, nav, aside, header, footer
- Audio, Video and Embed
- Canvas: paths, gradients, image manipulation, events
- Microdata for semantics and enhanced search engine results (Google Rich Snippets)

HTML

- The DOCTYPE

```
<!DOCTYPE html>
```

- Character Encoding

```
<meta charset = "UTF-8">
```

- The <script> tag

```
<script type = "text/javascript" src = "scriptfile.js"></script>
```
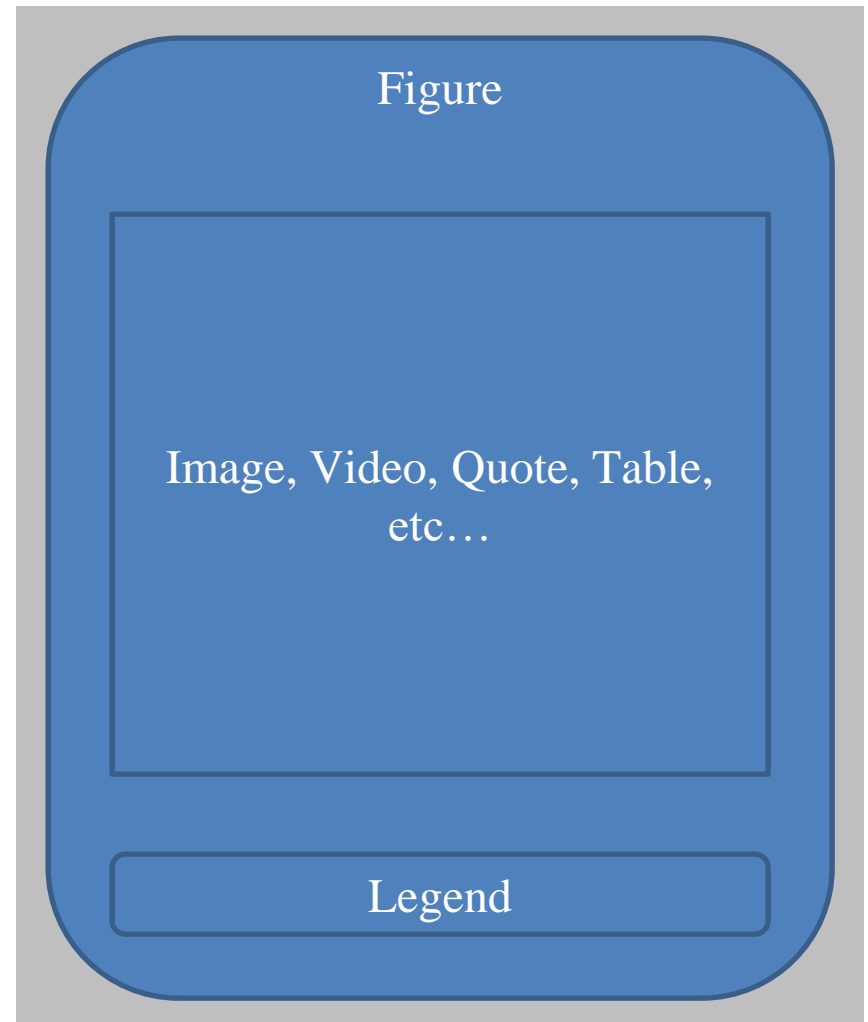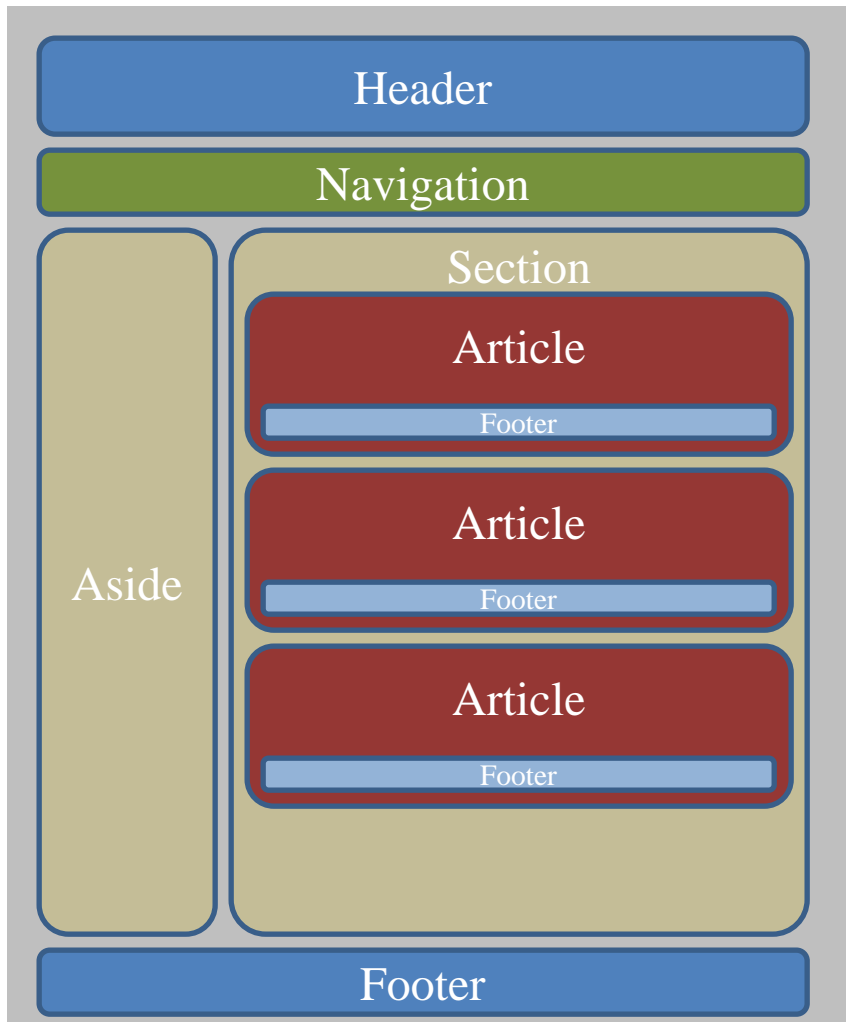
- The <link> tag

```
<link rel = "stylesheet" type = "text/css" href = "stylefile.css">
```

```
<link rel = "stylesheet" href = "stylefile.css">
```

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- HTML5 Elements

<p>...</p>

- Most of the elements contain some content like <p>...</p> contains a paragraph. Some elements, however, are forbidden from containing any content at all and these are known as void elements. For example, **br, hr, link, meta**, etc.

HTML Document

HTML Document

- **section** – This tag represents a generic document or application section. It can be used together with h1-h6 to indicate the document structure.
- **article** – This tag represents an independent piece of content of a document, such as a blog entry or newspaper article.
- **aside** – This tag represents a piece of content that is only slightly related to the rest of the page.
- **header** – This tag represents the header of a section.
- **footer** – This tag represents a footer for a section and can contain information about the author, copyright information, et cetera.

HTML Document

- **nav** – This tag represents a section of the document intended for navigation.
- **dialog** – This tag can be used to mark up a conversation.
- **figure** – This tag can be used to associate a caption together with some embedded content, such as a graphic or video.

HTML Document

Code

Output

```html
1  <!DOCTYPE html>
2
3  <html>
4      <head>
5          <meta charset = "utf-8">
6          <title>...</title>
7      </head>
8
9      <body>
10         <header role = "banner">
11             <h1>HTML5 Document Structure Example</h1>
12             <p>This page should be tried in safari, chrome or Mozila.</p>
13         </header>
14
15         <nav>
16             <ul>
17                 <li><a href = "https://www.tutorialspoint.com/html">HTML Tutorial</a></li>
18                 <li><a href = "https://www.tutorialspoint.com/css">CSS Tutorial</a></li>
19                 <li><a href = "https://www.tutorialspoint.com/javascript">
20                 JavaScript Tutorial</a></li>
21             </ul>
22         </nav>
23
24         <article>
25             <section>
26                 <p>Once article can have multiple sections</p>
27             </section>
28         </article>
29
30         <aside>
31             <p>This is  aside part of the web page</p>
32         </aside>
33
34         <footer>
35             <p>Created by <a href = "https://tutorialspoint.com/">Tutorials Point</a></p>
36         </footer>
37
38     </body>
39 </html>
```

HTML5 Document Structure Example

This page should be tried in safari, chrome or Mozila.

- HTML Tutorial
- CSS Tutorial
- JavaScript Tutorial

Once article can have multiple sections

This is aside part of the web page

Created by ABC

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HTML5 – Attributes (1)

- Attributes may only be specified within **start tags** and must never be used in **end tags**.

Attribute	Options	Function
accesskey	User Defined	Specifies a keyboard shortcut to access an element.
align	right, left, center	Horizontally aligns tags
background	URL	Places an background image behind an element
bgcolor	numeric, hexidecimal, RGB values	Places a background color behind an element
class	User Defined	Classifies an element for use with Cascading Style Sheets.

HTML5 – Attributes (2)

- Attributes may only be specified within **start tags** and must never be used in **end tags**.

Attribute	Options	Function
contenteditable	true, false	Specifies if the user can edit the element's content or not.
contextmenu	Menu id	Specifies the context menu for an element.
data-XXXX	User Defined	Custom attributes. Authors of a HTML document can define their own attributes. Must start with "data-".
draggable	true,false, auto	Specifies whether or not a user is allowed to drag an element.

HTML5 – Attributes (3)

- Attributes may only be specified within **start tags** and must never be used in **end tags**.

Attribute	Options	Function
height	Numeric Value	Specifies the height of tables, images, or table cells.
hidden	hidden	Specifies whether element should be visible or not.
id	User Defined	Names an element for use with Cascading Style Sheets.
item	List of elements	Used to group elements.
spellcheck	true, false	Specifies if the element must have it's spelling or grammar checked.

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HTML5 – Attributes (4)

- Attributes may only be specified within **start tags** and must never be used in **end tags**.

Attribute	Options	Function
style	CSS Style sheet	Specifies an inline style for an element.
subject	User define id	Specifies the element's corresponding item.
tabindex	Tab number	Specifies the tab order of an element.
title	User Defined	"Pop-up" title for your elements.
valign	top, middle, bottom	Vertically aligns tags within an HTML element.

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Custom Attributes

- A custom data attribute starts with **data-** and would be named based on your requirement

```
<div class = "example" data-subject = "physics" data-level = "complex"> ... </div>
```

HTML5 – Events (1)

Attribute	Value	Description
onblur	script	Triggers when the window loses focus
onchange	script	Triggers when an element changes
onclick	script	Triggers on a mouse click
oncontextmenu	script	Triggers when a context menu is triggered
ondblclick	script	Triggers on a mouse double-click
ondrag	script	Triggers when an element is dragged
ondragend	script	Triggers at the end of a drag operation

HTML5 – Events (2)

Attribute	Value	Description
ondragenter	script	Triggers when an element has been dragged to a valid drop target
ondragleave	script	Triggers when an element leaves a valid drop target
ondragover	script	Triggers when an element is being dragged over a valid drop target
ondragstart	script	Triggers at the start of a drag operation
ondrop	script	Triggers when dragged element is being dropped

HTML5 - Web Forms (1)

- Web Forms 2.0 is an extension to the forms features found in HTML4. Form elements and attributes in HTML5 provide a greater degree of semantic mark-up than HTML4 and free us from a great deal of tedious scripting and styling that was required in HTML4.

HTML5 - Web Forms (2)

- The <input> element in HTML4

Sr.No.	Type & Description
1	**text** A free-form text field, nominally free of line breaks.
2	**password** A free-form text field for sensitive information, nominally free of line breaks.
3	**checkbox** A set of zero or more values from a predefined list.
4	**radio** An enumerated value.
5	**submit** A free form of button initiates form submission.
6	**file** An arbitrary file with a MIME type and optionally a file name.

HTML5 - Web Forms (3)

- The <input> element in HTML4

Sr.No.	Type & Description
7	**image** A coordinate, relative to a particular image's size, with the extra semantic that it must be the last value selected and initiates form submission.
8	**hidden** An arbitrary string that is not normally displayed to the user.
9	**textarea** A free-form text field, nominally with no line break restrictions.
10	**button** A free form of button which can initiates any event related to button.

Example

```
...
<form action = "http://example.com/cgiscript.pl" method = "post">
    <p>
        <label for = "firstname">first name: </label>
        <input type = "text" id = "firstname"><br />

        <label for = "lastname">last name: </label>
        <input type = "text" id = "lastname"><br />

        <label for = "email">email: </label>
        <input type = "text" id = "email"><br>

        <input type = "radio" name = "sex" value = "male"> Male<br>
        <input type = "radio" name = "sex" value = "female"> Female<br>
        <input type = "submit" value = "send"> <input type = "reset">
    </p>
</form>
 ...
```

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HTML5 - Web Forms (4)

- The <input> element in HTML5

Sr.No.	Type & Description
1	**Datetime** A date and time (year, month, day, hour, minute, second, fractions of a second) encoded according to ISO 8601 with the time zone set to UTC.
2	**datetime-local** A date and time (year, month, day, hour, minute, second, fractions of a second) encoded according to ISO 8601, with no time zone information.
3	**Date** A date (year, month, day) encoded according to ISO 8601.
4	**Month** A date consisting of a year and a month encoded according to ISO 8601.
5	**Week** A date consisting of a year and a week number encoded according to ISO 8601.

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HTML5 - Web Forms (4)

- The <input> element in HTML5

Sr.No.	Type & Description
6	**Time** A time (hour, minute, seconds, fractional seconds) encoded according to ISO 8601.
7	**Number** It accepts only numerical value. The step attribute specifies the precision, defaulting to 1.
8	**Range** The range type is used for input fields that should contain a value from a range of numbers.
9	**Email** It accepts only email value. This type is used for input fields that should contain an e-mail address. If you try to submit a simple text, it forces to enter only email address in email@example.com format.
10	**url** It accepts only URL value. This type is used for input fields that should contain a URL address. If you try to submit a simple text, it forces to enter only URL address either in http://www.example.com format or in http://example.com format.

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HTML5 - Web Forms (5)

- **The <output> element**

  HTML5 introduced a new element <output> which is used to represent the result of different types of output, such as output written by a script.

- **The placeholder attribute**

  HTML5 introduced a new attribute called **placeholder**. This attribute on <input> and <textarea> elements provide a hint to the user of what can be entered in the field. The placeholder text must not contain carriage returns or line-feeds.

```
<input type = "text" name = "search" placeholder = "search the web"/>
```

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HTML5 - Web Forms (6)

- The autofocus attribute
  - This is a simple one-step pattern, easily programmed in JavaScript at the time of document load, automatically focus one particular form field.
  - This attribute is supported by latest versions of Mozilla, Safari and Chrome browsers only.

  ```
  <input type = "text" name = "search" autofocus/>
  ```

- The required attribute

  ```
  <input type = "text" name = "search" required/>
  ```

  - This attribute is supported by latest versions of Mozilla, Safari and Chrome browsers only.

Refferences

- https://www.tutorialspoint.com
- https://www.w3schools.com/