HTML5

Topics

- element
- Float & Clear
- CSS Positioning
- HTML5 Basics
- HTML5 Semantic Elements
- Video & Audio
- Canvas & SVG
- New Input Types, Attributes & Elements

Do & Don'ts

- Always keep appropriate doc type declaration
- Always keep the basic tags when start any HTML page
- Always end the tag wherever applicable i.e.
- Always use external style sheet. Do not use inline CSS
- Always Keep the style sheet name "style.css" for default style sheet
- Never use same ID name multiple time in same page
- HTML page should always W3C validate.

What is

- The HTML element is a block level element that can be used as a container for grouping other HTML elements.
- The element has no special meaning. Except that, because it is a block level element, the browser will display a line break before and after it.
- Another common use of the element, is for document layout. It replaces the "old way" of defining layout using tables. Using <table> elements for layout is not the correct use of <table>. The purpose of the <table> element is to display tabular data.

Using

**How to use **

```
<div class="header">This is header</div>

.header {
    width:200px;
    height:100px;
    background-color:#bfbfbf;
    color:#000;
}
```

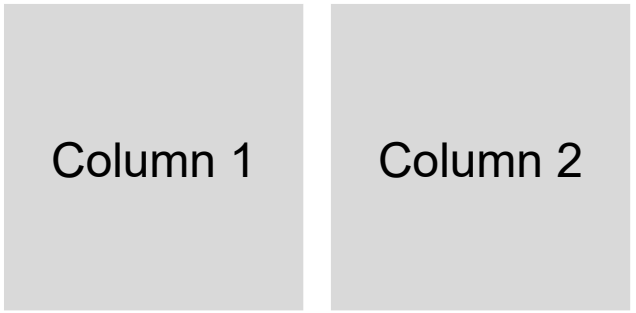
This is header

Layout using & CSS

CSS Float - Floating Elements Next to Each Other

```
.column1 {
        float: left;
        width: 50px; height: 100px;
}

.column2 {
        float: left;
        width: 50px; height: 100px;
}
```



Layout using & CSS

Float Right

```
.column1 { float: left; }
.column2 { float: right; }
```


Turning off Float - Using Clear

Elements after the floating element will flow around it. To avoid this, use the clear property.

```
.column1 { clear: both; }
```

CSS Positioning

Static Positioning

HTML elements are positioned static by default. A static positioned element is always positioned according to the normal flow of the page.

```
.column1 { position: static; }
```

Fixed Positioning

An element with fixed position is positioned relative to the browser window. It will not move even if the window is scrolled:

```
.column1 {
        position: fixed;
        top:30px;
        right:5px;
}
```

Column 1

CSS Positioning

Relative Positioning

- A relative positioned element is positioned relative to its normal position.

```
.column1 {
    position: relative;
    left: 20px;
}
```

- The content of relatively positioned elements can be moved and overlap other elements, but the reserved space for the element is still preserved in the normal flow.
- Relatively positioned elements are often used as container blocks for absolutely positioned elements.

CSS Positioning

Absolute Positioning

- An absolute position element is positioned relative to the first parent element that has a position other than static.
- If no such element is found, the containing block is <html>:

```
.column1 {
        position: absolute; left: 100px; top: 150px;
}
```

- Absolutely positioned elements are removed from the normal flow. The document and other elements behave like the absolutely positioned element does not exist.
- Absolutely positioned elements can overlap other elements.

CSS Positioning

Sticky Positioning

- An element with position: sticky; is positioned based on the user's scroll position.
- A sticky element toggles between relative and fixed, depending on the scroll position. It is positioned relative until a given offset position is met in the viewport then it "sticks" in place (like position:fixed).

```
.column1 {
      position: sticky; top: 0;
}
```

CSS Positioning

Overlapping Elements Using z-index

- When elements are positioned outside the normal flow, they can overlap other elements.
- The z-index property specifies the stack order of an element (which element should be placed in front of, or behind the others).
- An element can have a positive or negative stack order:

```
img {
        position: absolute; left: 0; top: 0; z-index:1000;
}
```

- An element with greater stack order is always in front of an element with a lower stack order.

What is HTML5?

- HTML5 is the latest standards for HTML.
- Previous standard HTML4 / XHTML1.0 is not getting obsolete.
- Majorly all browsers supports many of the new HTML5 elements, attributes and APIs.

Browser Support for HTML5

- All major browsers (Safari, Chrome, Firefox, Opera, Edge) continue to add new HTML5 features to their latest versions.

What's New in HTML5?

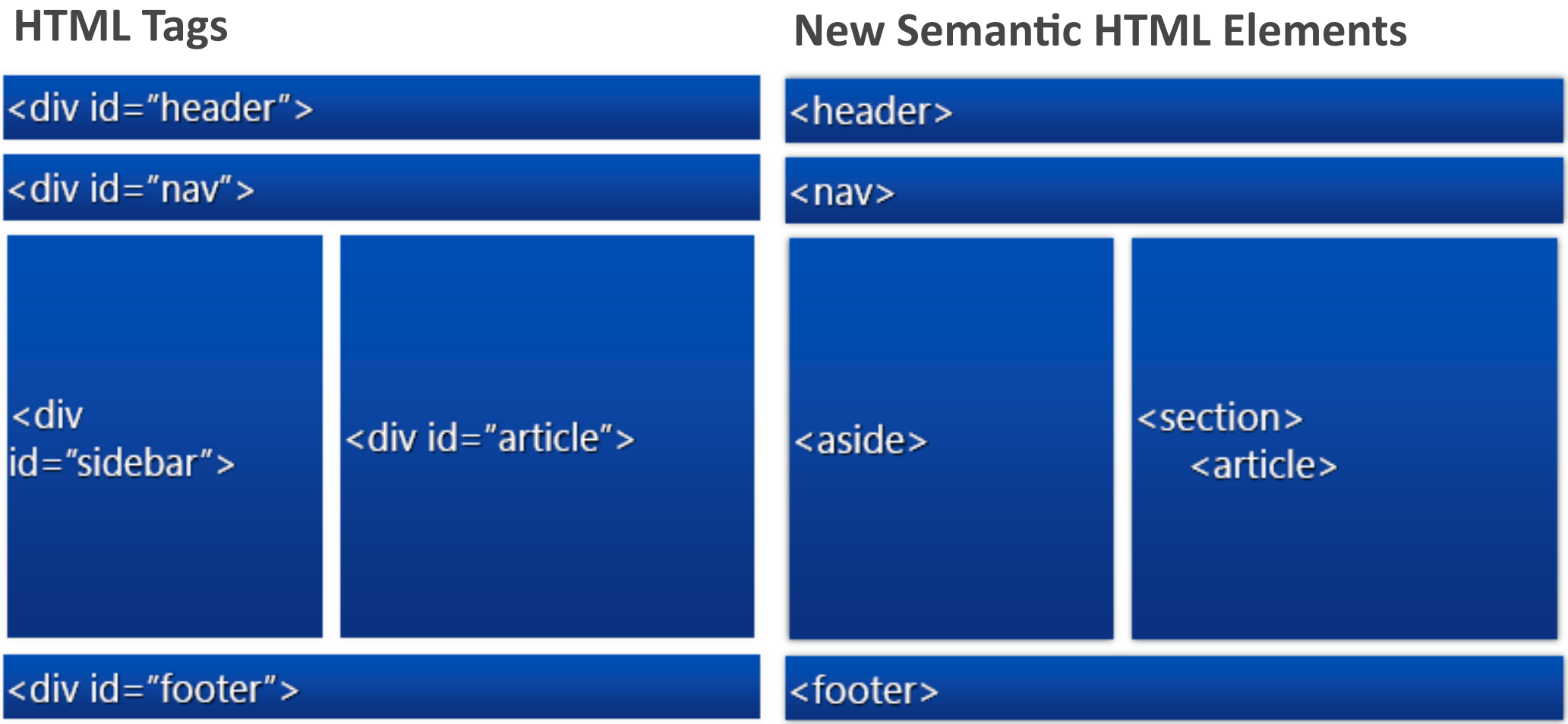
- New Semantic/Structural Elements
- Video and Audio
- Using Canvas and SVG files
- New Input Types
- New Attributes
- New Form Elements

How Did HTML5 Get Started?

Minimum HTML5 Document

```
<!DOCTYPE html>
<html>
    <head>
        <title>Title of the document</title>
    </head>
<body>
    The content of the document……
</body>
</html>
```

New Semantic/Structural Elements



New Semantic/Structural Elements

`<header>`	Defines a header for a document or section
`<nav>`	Defines navigation links
`<section>`	Defines a section in a document
`<article>`	Defines an article
`<aside>`	Defines content aside from the page content
`<details>`	Defines additional details that the user can view or hide
`<dialog>`	Defines a dialog box or window
`<summary>`	Defines a visible heading for a `<details>` element
`<footer>`	Defines a footer for a document or section
`<mark>`	Defines marked/highlighted text
`<meter>`	Defines a scalar measurement within a known range (a gauge)
`<progress>`	Represents the progress of a task
`<time>`	Defines a date/time
`<figure>`	Specifies self-contained content, like illustrations, diagrams, photos, code listings, etc.
`<figcaption>`	Defines a caption for a `<figure>` element
`<wbr>`	Defines a possible line-break

Video and Audio

Video Element

- Today, most videos are shown through a plug-in (like flash). However, different browsers may have different plug-ins.
- HTML5 defines a new element which specifies a standard way to embed a video/movie on a web page: the **<video>** element.

How It Works

```
<video width="320" height="240" controls>
  <source src="movie.mp4" type="video/mp4">
  <source src="movie.ogg" type="video/ogg">
  Your browser does not support the video tag.
</video>
```

For more info: http://www.w3schools.com/html/html5_video.asp

Video and Audio

Audio Element

- Today, most audio files are played through a plug-in (like flash). However, different browsers may have different plug-ins.
- HTML5 defines a new element which specifies a standard way to embed an audio file on a web page: the **<audio>** element.

How It Works


```
<audio controls>
  <source src="horse.ogg" type="audio/ogg">
  <source src="horse.mp3" type="audio/mpeg">
Your browser does not support the audio element.
</audio>
```

For more info: http://www.w3schools.com/html/html5_audio.asp

Canvas

Using Canvas?

- The HTML5 <canvas> element is used to draw graphics, on the fly, via scripting (usually JavaScript).
- The <canvas> element is only a container for graphics. You must use a script to actually draw the graphics.

How It Works

```
<canvas id="myCanvas" width="200" height="100"
style="border:1px solid #c3c3c3;">
  Your browser does not support the HTML5 canvas tag.
</canvas>
<script>
var c = document.getElementById("myCanvas");
var ctx = c.getContext("2d");
ctx.fillStyle = "#FF0000";
ctx.fillRect(0,0,150,75);</script>
```

For more info: http://www.w3schools.com/html/html5_canvas.asp

SVG Files

Using SVG (Scalable Vector Graphics)

- SVG is used to define vector-based graphics for the Web
- SVG defines the graphics in XML format
- SVG graphics do NOT lose any quality if they are zoomed or resized
- Every element and every attribute in SVG files can be animated
- SVG is a W3C recommendation

SVG Advantages

- SVG images can be created and edited with any text editor
- SVG images can be searched, indexed, scripted, and compressed
- SVG images can be printed with high quality at any resolution
- SVG images are scalable (and the image can be zoomed without degradation)

For more info: http://www.w3schools.com/html/html5_svg.asp

How to use SVG

Inline SVG XML Embedded

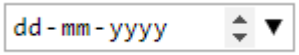
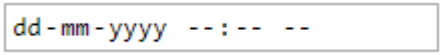
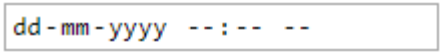
```
<svg xmlns="http://www.w3.org/2000/svg" version="1.1" height="190">
    <polygon points="100,10 40,180 190,60 10,60 160,180"
    style="fill:lime;stroke:purple;stroke-width:5;fill-
    rule:evenodd;">
    </svg>
```

Using SVG as an <img>

```
<img src="star.svg" alt="My Star">
```

For more info: http://www.w3schools.com/html/html5_svg.asp

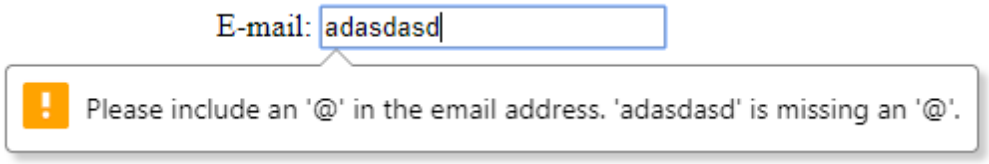
New Input Types

Color	Gives the end user a native color picker to choose a color.
`<input type="color" name="color">`	
Date	Offers a date picker.
`<input type="date" name="date">`	
Datetime	An element to choose both date and time.
`<input type="datetime" name="datetime">`	
Datetime-local	An element to choose both date and time, with local time zone.
`<input type="datetime-local" name="datetime-local">`	

New Input Types

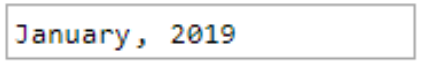
Email	A field for entering e-mail address(es).

```
<input type="email" name="email">
```



Month	Choose a full month.

```
<input type="month" name="month">
```



Number	Picking a number user can select max and min value

```
<input type="number" name="number">
```

New Input Types

Range	Offers a slider to select the value.

```
<input type="range" id="range" name="range">
```

Search	An input type for search field used for site search.

```
<input type="search" name="search" results="5" >
```

Tel	Choosing a telephone number.

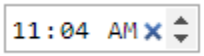
```
<input type="tel" name="usrtel">
```

TatvaSoft

New Input Types

Time	Input a certain time.

```
<input type="time" name="time">
```

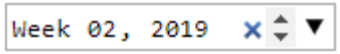


url	Entering a URL.

```
<input type="url" name="url">
```

week	Picking a specific week.

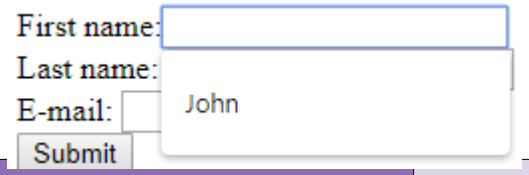
```
<input type="week" name="week">
```



New Attributes

autocomplete	An option to turn off automatic form completion of values for a field. Possible values are "on" and "off".

```
<input type="text" name="autocomplete" autocomplete="on">
```



autofocus	Whether focus should be set to this field as soon as it has loaded.

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

New Attributes

formaction	Formaction attribute specify the url of the file, when the form is submitted it will redirect to that url.

```
<input type="submit" formaction="http://www.google.com/"
value="Save">
```

formenctype	The formenctype attribute specify the encoding type of the form data when the form is submitted.

```
<input type="submit" formenctype="application/x-www-form-
urlencoded" value="Save">
```

New Attributes

formmethod	It specify the HTTP method to send the form data to server.

```
<input type="submit" formmethod="POST" value="Send as POST">
```

formnovalidate	Append to a submit button to bypass form validation.

```
<input type="submit" formnovalidate value="Don't validate">
```

New Attributes

formtarget	For buttons that submit a form to be able to override the form's target attribute. It specify where to display response that is received.

```
<input type="submit" formtarget="_blank" value="Post to new tab/window">
```

max	Maximum value for the value that can be put in. Can be used with date, number, range etc.

```
<input type="range" id="range3" max="90">
```

New Attributes

min	Minimum value for the value that can be put in.

```
<input type="range" id="range4" min="10">
```

multiple	Allows for selection of multiple files for `<input type="file">` elements, and for multiple e-mail addresses separated by a comma.

```
<input type="file" multiple>
```

New Attributes

novalidate	Applies only to the <form> element, bypass all the validation before submitted.

```
<form action="demo_form.asp" novalidate>
```

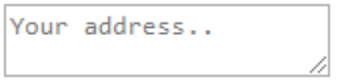
pattern	It specify the custom validation pattern.

```
<input type="text" pattern="[A-Z]*">
```

New Attributes

placeholder	Meant to be able to display a hint to the end user what to input. (Side note: I wrote a blog post discussing the desired behavior of the placeholder attribute)

```
<input type="text" name="placeholder" placeholder="Enter your Designation">
```



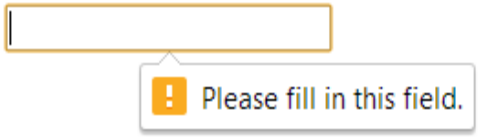
readonly	If a field should be readonly.

```
<input type="text" readonly>
```

New Attributes

required	For required field validation.

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



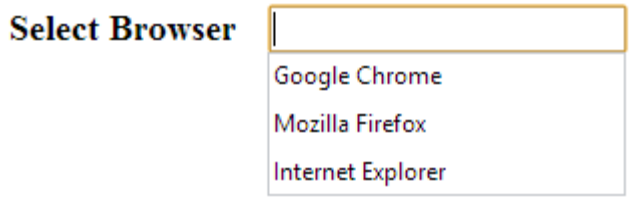
spellcheck	It is Boolean property when it is on browser will perform spellcheck for the input

```
<input type="text" spellcheck="true">
```

New Elements

datalist	Contains a number of <option> elements with values that can be used as suggestions for other form elements through the usage of the list attribute on them.

```
<input type="text" name="characters" list="data-list">
<datalist id="data-list">
    <option value="Google Chrome">
    <option value="Mozilla Firefox">
    <option value="Internet Explorer">
    </datalist>
```



New Elements

keygen	Offers a way to create a public/private key pair. The private key is stored locally and public key is sent to the server.

```
<keygen name="key"></keygen>
```

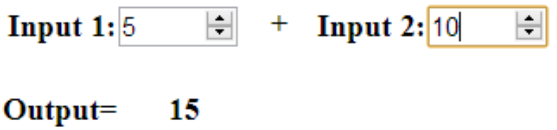
meter	The meter element is for displaying values on a bar, where you can custom control min, max and assigned value.

```
<meter min="0" max="10" value="4"></meter>
```

New Elements

output	It is used to show output of a calculation in the page

```
<form oninput="x.value=parseInt(a.value)+parseInt(b.value)>
<input id="a" type="number" value="5"/>
<input id="b" type="number" value="10"/>
<output name="x" for="a b"></output> </form>
```



progress	It is used to indicate progress of any kind in a web page, for instance file upload progress.

```
<progress max="100" value="70"></progress>
```

Useful Links

- http://www.w3schools.com/html/html5_intro.asp
- https://developer.mozilla.org/en-US/docs/Web/Guide/HTML/HTML5
- http://robertnyman.com/2011/08/16/html5-forms-input-types-attributes-and-new-elements-demos-tips-and-tricks/

- http://mobilehtml5.org/
- http://html5please.com/#showall

To check browser support

- http://fmbip.com/litmus/
- http://html5test.com/index.html
- http://caniuse.com/