

# Web Development Using HTML

**Internet Programming I: Chapter 2 – Part II**



ADDIS ABABA SCIENCE AND TECHNOLOGY UNIVERSITY  
**Department of Software Engineering**

# Link elements

- A hyperlink (or link) is a word, group of words, or image that we can click on to jump to a new document or a new section within the current document
- Links are specified in HTML using the anchor (<a>) tag
- The <a> tag can be used in two ways:
  - To create a link to another document, by using the **href** attribute
  - To create a bookmark inside a document, by using the **name** attribute
- **Syntax :**    <a href="url">Link text</a>

where “*href*” attribute can point to:

- Outside document
- Another document within the same site
- Another part of document within the same file

# Link elements cont'd



## Link to external document

- Example:

- `<a href="http://www.w3schools.com/">Visit W3Schools</a>`

- Attribute “target” specifies where to open the document
- The target attribute can have one of the following values:
  - `_self` - Default. Opens the document in the same window/tab as it was clicked
  - `_blank` - Opens the document in a new window or tab
  - `_parent` - Opens the document in the parent frame
  - `_top` - Opens the document in the full body of the window
- Example below opens linked document in a new browser window
  - `<a href="http://www.w3schools.com/" target="_blank">W3Schools</a>`
- An example of a link to document within the same site
  - `<a href="/HR/admin_peple.html">Administrative Staff</a>`

# Image Element

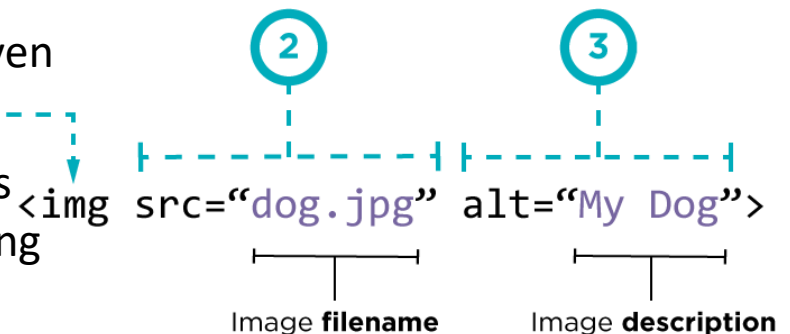
- Images enhance visual appearance of the web pages by making them more interesting and colorful
- The `<img>` tag is used to embed images in the HTML documents
- It is an empty element and contains attributes only

## Syntax:

(1) **img** is an image tags which embed a given /picture/image

(2) **src** attribute is short for **source** and tells the tag which image to load by specifying it's path

(3) **alt** attribute is short hand for *alternative text*



# Image Element cont'd



## Absolute vs. Relative URLs

- **Absolute links** are URLs that contain the protocol, the domain name and the full path to the resource
- **Relative links** are URLs that are 'relative' to the file that you are using them in, or linking from
- Relative path can be specified down the in the directory tree starting from the root directory

```
<body>
  <img src = "https://www.tutorialspoint.com/images/html.gif"
      alt = "HTML Tutorial" height = "250" width = "340" />
</body>

</html>
```

# Image Element cont'd



## The alt attributes:

- Defines an alternative text description of the image
- A browser might not display images for several reason, such as:
  - The image is invalid or an unsupported type or not available
  - The image cannot to be loaded because of slow connection
  - Non-visual browsers (such as those used by people with visual impairments)
  - The user chooses not to display images (saving bandwidth, privacy reasons)
- In these cases, the browser may replace the image with the text in the element's alt attribute
- Omitting alt indicates that the image is a key part of the content and no textual equivalent is available
- The alt attribute is considered good for SEO prospective
- Therefore, provide a useful value for alt attributes whenever possible

# Image Element cont'd

- The **empty alt** attributes:

- Indicates that this image is **not a key** part of the content
- Non-visual browsers may omit it from rendering the image
- Visual browsers will also hide the broken image icon and the image failed to display


HTML image example with alt attribute



- Authoring meaningful alternate descriptions

- An alt attribute's value should clearly and concisely describe the image's content
- It should not describe the presence of the image itself or the file name of the image

HTML image example with alt attribute

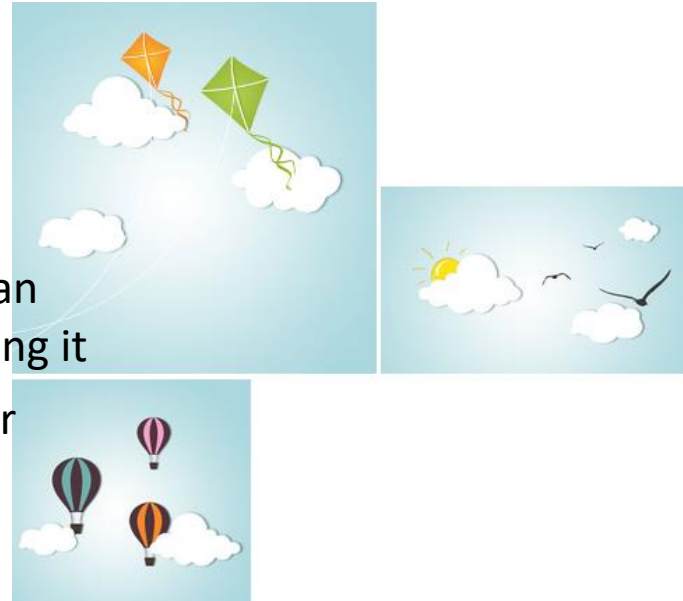
 animal image

Attribute	Value	Description
align	top, bottom, middle, left, right	<i>Deprecated</i> – Specifies the alignment for the image
alt	text	Specifies alternate text
border	pixels	<i>Deprecated</i> – Specifies the width of the image border.
crossorigin	anonymous use-credentials	It allows images from third-party sites that allow cross-origin access to be reused with canvas.
height	pixels or %	Specifies the height of the image.
hspace	pixels	<i>Deprecated</i> – Amount of white space to be inserted to the left and right of the object.
ismap	URL	Defines the image as a server-side image map.
longdesc	text	<i>Deprecated</i> – Specifies a URI/URL of a long description - this can elaborate on a shorter description specified with the alt attribute.
src	URL	the url of an image
usemap	#mapname	Defines the image as a client-side image map and used alongwith <map> and <area> tags.
vspace	pixels	<i>Deprecated</i> – Amount of white space to be inserted to the top and bottom of the object.
width	pixels or %	Sets the width of an image in pixels or in %.



# Image Element cont'd

- It's a good practice to specify both the width and height attributes for an image, so that browser can allocate enough space for the image before loading it
- Otherwise, image loading may cause distortion or flicker in your website layout



```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Setting Image Width and Height Using style Attribute in
HTML</title>
</head>
<body>
  
  
  
</body>
</html>
```

# Image Element cont'd

- Responsive Images the Simple Way (using sizes, src, srcset attributes)

1. At this screen size,

2. I will be displayed at roughly this size.

```

```

3. You can choose from any of these images...

4. ...which are this wide

5. So please pick the best image for right now.

# Image Element cont'd



## Supported image formats

- The image file formats that are most commonly used on the web are:
- APNG (Animated Portable Network Graphics)
  - Good choice for lossless animation sequences (GIF is less performant)
- AVIF (AV1 Image File Format)
  - Good choice for both images and animated images due to high performance
- GIF (Graphics Interchange Format)
  - Good choice for simple images and animations.
- JPEG (Joint Photographic Expert Group image)
  - Good choice for lossy compression of still images (currently the most popular)
- PNG (Portable Network Graphics)
  - Good choice for lossy compression of still images (slightly better quality than JPEG)
- SVG (Scalable Vector Graphics) - vector image format
  - Use for images that must be drawn accurately at different sizes.
- WebP (Web Picture format)
  - Excellent choice for both images and animated images

# Creating Image Map

The image is a composite of three MDN Web Docs pages, each with a 3D pyramid in the center. The pyramid has three visible faces: a red face labeled 'JS' (JavaScript), a purple face labeled 'CSS' (Cascading Style Sheets), and a blue face labeled 'HTML' (HyperText Markup Language). Arrows point from each of the three pages to its corresponding face on the pyramid.

**JavaScript**

JavaScript (JS) is a lightweight, interpreted, or [just-in-time](#) compiled programming language with [first-class functions](#). While it is most well-known as the scripting language for Web pages, [many non-browser environments](#) also use it, such as [Node.js](#), [Apache CouchDB](#) and [Adobe Acrobat](#). JavaScript is a [prototype-based](#), multi-paradigm, single-threaded, dynamic language, supporting object-oriented, imperative, and declarative (e.g. functional programming) styles. Read more [about JavaScript](#).

This section is dedicated to the JavaScript language itself, and not the parts that are specific to Web pages or other host environments. For information about [API](#) specifics to Web pages, please see [Web APIs](#) and [DOM](#).

**CSS: Cascading Style Sheets**

Cascading Style Sheets (CSS) is a [stylesheet](#) language used to describe the presentation of [web documents](#) written in [HTML](#) or [XML](#) (including XML dialects such as [SVG](#), [MathML](#) or [XHTML](#)). Elements should be rendered on screen, on paper, in speech, or on other media.

CSS is among the core languages of the [open web](#) and is standardized as a [W3C specification](#). Previously, development of various parts of CSS was done asynchronously, which allowed versioning of the latest recommendations (CSS1, CSS2.1, CSS3). However, CSS4 has never become a recommendation.

**HTML: HyperText Markup Language**

HTML (HyperText Markup Language) is the most basic building block of the Web. It defines the meaning and structure of web content. Other technologies besides HTML are generally used to describe a web page's appearance/presentation ([CSS](#)) or functionality/behavior ([JavaScript](#)).

- An image map is an image with clickable areas

# Creating Image Map cont'd



- Image map is defined by the <map> element with <area> elements
- The idea is to be able to perform different actions depending on where in the image you click
- It is an inline element and belongs to the phrasing content ----> Flow content model
- The <map> tag has one required attribute called name that gives the map a name so that it can be referenced
- The name attribute must:
  - Has a non-empty value with no space characters
  - Has a unique value – two map element in the same document not allowed to have the same name

# Creating Image Map cont'd



- How Does it image map Works?
- The image is inserted using the `<img>` tag
  - Here the `<img>` element is different from other images because it require a usemap attribute
- Usemap attribute
  - Its value starts with a # followed by the name of the image map.
  - Used to create a relationship between the image and the image map
- Then, the `<map>` element is used to create an image map, and is linked to the image by using the required name attribute
- Then, the clickable areas are defined and added using an `<area>` element

# Creating Image Map example

```
<h2>Image Maps</h2>
<p>Click on the computer, the phone, or the cup of coffee
    to go to a new page and read more about the topic:</p>



<map name="workmap">
  <area shape="rect" coords="34,44,270,350"
    alt="Computer" href="computer.htm">
  <area shape="rect" coords="290,172,333,250"
    alt="Phone" href="phone.htm">
  <area shape="circle" coords="337,300,44"
    alt="Cup of coffee" href="coffee.htm">
</map>
```

# Creating Image Map cont'd



## The <area> element

- It defines an area inside an image map that has predefined clickable areas
- Allows geometric areas on an image to be associated with hypertext link
- Used only within a <map> element
  - It is defined with (required) attributes shape and coords
  - Shape attribute - specifies the shape of the clickable area such as rectangle, circle, square, and polygon
  - Coords attribute - defines the coordinates of areas inside the image



# Creating Image Map cont'd



## How coordinate works?

- **Shape attribute** possible values
  - circle, rect, poly, default

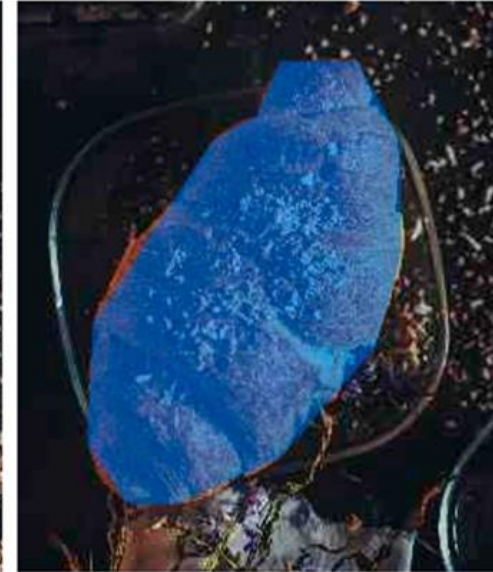
## Cords attribute possible values

**x, y, r (circle)** where x, y specify the **center** and **r** is the radius of circle

**Pair of x,y (rect)** that specify the **left, top, right, bottom** coordinates of rectangle

**x1,y1,x2,y2,x3,y3,..(polygon)** that the polygon vertices

**Note:** *The easiest technique is using map coordinate generator*



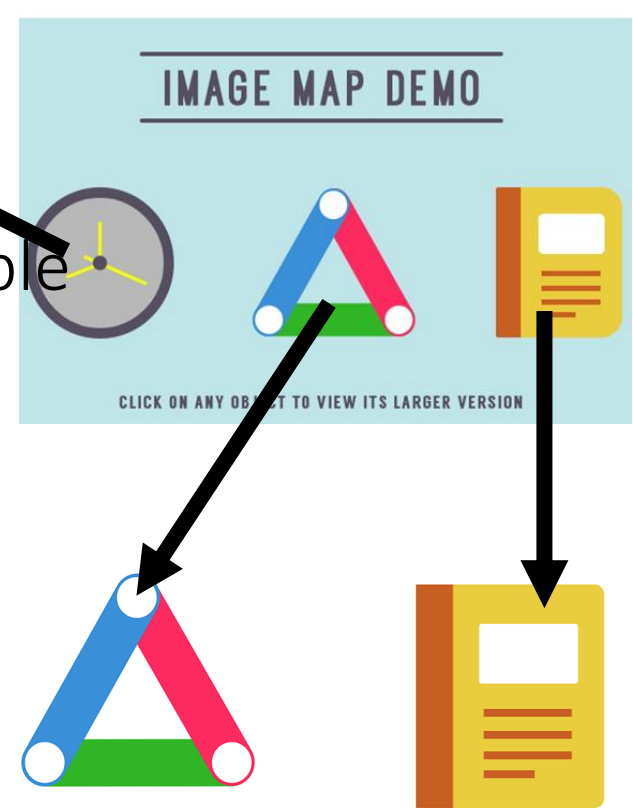
# Creating Image Map cont'd



Attribute	Value(s)	Description
alt	Text	Alternative text to display if image can not be displayed
target	_self, _blank, _parent, _top	Specifies where to display the linked resource (current window, new window, the parent frame, full width in the original (same) window)
href	URL	Determine the hyperlink destination for the active (clickable) area
hreflang	language_code	<ul style="list-style-type: none"><li>• The language of the linked resource.</li><li>• Must specified this attribute if you provide a value for the <b>href</b> attribute</li></ul>
download	File name	Indicates that the hyperlink will be used to download a resource
rel	alternate, author, help, next, bookmark, license, nofollow, noreferrer, prefetch, prev, search, tag	<ul style="list-style-type: none"><li>• Determine the relationship between the current document and the hyperlink</li><li>• Used if a value for the href attribute is provided</li></ul>

# Creating Image Map example

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Creating Image Maps in HTML</title>
</head>
<body>
  
  <map name="objects">
    <area shape="circle" coords="137,231,71"
          href="/examples/html/clock.html" alt="Clock">
    <area shape="poly" coords="363,146,273,302,452,300"
          href="/examples/html/sign.html" alt="Sign">
    <area shape="rect" coords="520,160,641,302"
          href="/examples/html/book.html" alt="Book">
  </map>
</body>
</html>
```



# The <picture> and <source> Element



## The <picture>

- Unlike <img> tag, it offer alternative versions of an image for different display/device scenarios
- Like <img> tag, it is also an inline element and the content categories are embedded content ---> phrasing content ---> Flow content
- It nest a single <img> element and zero or more <source> elements
- The <img> element serves two purposes:
  - It describes the size and other attributes of the image and its presentation
  - It provides a fallback in case none of the offered <source> elements can provide a usable image
- Always specify the <img> element as the last child element of <picture> element

# The <picture> and <source> Element continued



- The <source> Element
  - It specifies multiple media resources for the <picture> element.
  - It also used with the <audio> element, and the <video> element.
  - It is an empty element (or void element) and also doesn't has content model
  - Commonly used to offer the same media content in multiple file formats in order to provide compatibility with a broad range of browser
- How <picture> and <source> elements work?
  - The browser will consider each child <source> element and choose the best match among them
  - If no matches are found or the browser doesn't support the <picture> element then the URL of the <img> element specified in the src attribute is selected

# The <picture> and <source> Element cont'd



```
1 <!DOCTYPE html>
2 <html>
3 <head>
4 <meta name="viewport"
5       content="width=device-width, initial-scale=1.0">
6 </head>
7 <body>
8 <h2>The picture Element</h2>
9 <picture>
10   <source media="(min-width: 650px)"
11           srcset="https://www.w3schools.com/html/img_food.jpg">
12   <source media="(min-width: 465px)"
13           srcset="https://www.w3schools.com/html/img_car.jpg">
14   
16 </picture>
17 </body>
18 </html>
19
```

*Considered If none of the source match the view point then*

# The <picture> and <source> Element cont'd



- The <source> attributes

Attribute	Value	Description
media	media_query	<ul style="list-style-type: none"><li>• media query of the resource's intended media</li><li>• Accepts any valid media query that would normally be defined in a CSS</li></ul>
sizes	media condition-length pairs	<ul style="list-style-type: none"><li>• Specifies list of media source sizes for different page layouts</li><li>• Each source size consists of a comma-separated list of media condition-length pairs. <i>E.g. sizes = "(max-height: 500px) 1000px"</i></li></ul>
src	URL	Required when <source> is used in <audio> and <video> Specifies the URL of the media file
srcset	URL	<ul style="list-style-type: none"><li>• Required when &lt;source&gt; is used in &lt;picture&gt;.</li><li>• Specifies the URL of the image to use in different situations</li></ul>
type	MIME-type	Specifies the MIME-type of the resource



# The <picture> and <source> Element example



```
1 <!DOCTYPE html>
2 <html>
3 <head>
4 <meta name="viewport" content="width=device-width, initial-
  scale=1.0">
5 </head>
6 <body>
7
8 <h1>The picture element</h1>
9
10 <p>Resize the browser window to load different images.</p>
11
12 <picture>
13   <source media="(min-width:650px)"
  srcset="https://www.w3schools.com/tags/img_pink_flowers.jpg">
14   <source media="(min-width:465px)"
  srcset="https://www.w3schools.com/tags/img_white_flower.jpg">
15   
16 </picture>
17
18 </body>
```

*Considered If none of the source match the view point then*



# The <picture> and <source> Element cont'd



## Common use cases for <picture>

- Bandwidth
  - For small screen or device, it is not necessary to load a large image file.
  - By loading the most appropriate image for the viewer's display, the <picture> element allow saving bandwidth and speeding page load times .
- Format Support
  - Some browsers or devices may not support all image formats.
  - With the <picture> element, you can add images of all formats, and let the browser to find the supported format
- Art direction
  - Cropping or modifying images for different media conditions.
  - E.g. loading a simpler version of image which has too many details, on smaller displays

# Audio and Video Elements



- Before HTML5 there hasn't been a standard multimedia on web
- Most videos were shown through a plugin. However, not all browsers have the same plugins
- HTML5 features include native audio and video support without the need for Flash/a plugin
- A standard way to include multimedia contents (video or audio) on web
  - The <audio> tag - embed sound content in web documents
  - The <video> tag - embed a media player which supports video playback
  - The <source> tag – specify the source of media both for audio and video
- Both <audio> and <video> tags require the media controls

# Audio and Video Elements cont'd



- **Media Sources**

One or more media sources are represented using the **src attribute** and the **<source> element**

- **Examples:**

```
<!DOCTYPE html>
<html>
<body>

<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>

</body>
</html>
```

```
<!DOCTYPE html>
<html>
<body>

<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>

</body>
</html>
```

Attribute	Value	Description
<b>autoplay</b>	autoplay	A Boolean attribute: if specified, the audio/video will automatically begin playback as soon as it is ready
<b>controls</b>	controls	if specified, the controls displayed to allow the user to control audio/video playback, including volume, seeking, and pause/resume.
<b>loop</b>	loop	Audio/video will start over again, every time it is finished
<b>muted</b>	muted	A Boolean attribute that indicates whether the audio will be initially silenced. Its default value is false.
<b>preload</b>	non / auto / metadata	Enumerated attribute which intended to provide a hint to the browser what content is loaded before the media played.
<b>height</b>	pixels	<i>Sets the height of the video player</i>
<b>width</b>	pixels	<i>Sets the width of the video player</i>
<b>poster</b>	URL	<i>An image to be shown while the video is downloading, or until the user hits the play button</i>

# HTML Audio and Video Formats



- There are three supported video and audio formats.
- The browser support for the different formats is given below:

Browser	Video format			Audio format		
	MP4	WebM	Ogg	MP3	WAV	OGG
Edge	YES	YES	YES	YES	YES*	YES*
Chrome	YES	YES	YES	YES	YES	YES
Firefox	YES	YES	YES	YES	YES	YES
Safari	YES	YES	NO	YES	YES	NO
Opera	YES	YES	YES	YES	YES	YES

# Audio and Video Elements

Video example



```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="utf-8">
  <title>Embedding Video into an HTML Page</title>
</head>
<body>
  <video controls="controls" src="/examples/video/shuttle.mp4">
    Your browser does not support the HTML5 Video element.
  </video>

  <p> A video with alternative sources. </p>
  <video controls="controls">
    <source src="/examples/video/shuttle.mp4" type="video/mp4">
    <source src="/examples/video/shuttle.ogv" type="video/ogg">
    Your browser does not support the HTML5 Video element.
  </video>
</body>
</html>
```

# Audio and Video Elements

Audio example



```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="utf-8">
  <title>Specify Alternate Sources for audio Element in
HTML</title>
</head>
<body>
  <p> A audio with single sources. </p>
  <audio controls="controls" src="/examples/audio/birds.mp3">
    Your browser does not support the HTML5 audio element.
  </audio>
  <br><br> <hr/>
  <p> A audio with alternative sources. </p>
  <audio controls="controls">
    <source src="/examples/audio/birds.mp3" type="audio/mpeg">
    <source src="/examples/audio/birds.ogg" type="audio/ogg">
    Your browser does not support the HTML5 audio element.
  </audio>
</body>
</html>
```

# The <track> Element

- HTML <track> tag is used to define time-based text tracks for a media file.
- It must be used as child element of <audio> and <video> elements.
- It is used to specify subtitles, caption files or other files containing text, that should be visible when the media is playing.
- Tracks are formatted in WebVTT format (.vtt files).



# The <track> Element attributes



Attribute	Value	Description
default	default	It specifies that the track should be enabled unless the user's preferences indicate that another track is more important
kind	captions / chapters descriptions / metadata subtitles	It specifies that which type of text track you want to add
label	text	It specifies the title of the text track
src	URL	It defines the URL of the track file
srclang	language_code	It defines the language of the track text content, such as English, Germany, etc.

# The <track> Element cont'd



## How to create WEBVTT file:

- In the text editor (notepad)
  1. Write *WEBVTT* as the first line in the editor
  2. Leave a blank line
  3. Specify the time duration in the proper format  
*00:01.000 --> 00:04.000*
  4. Enter and write your text which you want to add a subtitle or caption  
*- Never drink liquid nitrogen.*
  5. Repeat step 3 to 5 until you finish it
  6. Save it using .vtt extension

## Example 1:

WEBVTT - This file has cues.

00:01:14.815 --> 00:01:18.114

- What?

- Where are we now?

00:01:18.171 --> 00:01:20.991

- This is big bat country.

00:01:21.058 --> 00:01:23.868

- [ Bats Screeching ]

- They won't get in your hair.

- They're after the bugs

**Note:** For more details checkout

- [https://developer.mozilla.org/en-US/docs/Web/API/WebVTT\\_API](https://developer.mozilla.org/en-US/docs/Web/API/WebVTT_API)

# The <figure> and <figurecaption> Elements



- The <figure> element
  - Specifies self-contained content, like illustrations, diagrams, photos, code listings, poem script etc
  - Its content is related to the main flow, but its position is independent of the main flow, and if removed it should not affect the flow of the document
- The <figurecaption> element
  - Represents a caption or legend describing the contents of <figure> element which is its parent
  - Can be placed as the first or last child of the <figure> element
- Both <figure> tag and <figurecaption> tag don't have any specific attribute

# The <figure> and <figurecaption> Elements cont'd



## Example 1:

```
<!DOCTYPE html>
<html lang="en">
<head>
<title>Example of HTML figure Tag</title>
</head>
<body>
  <figure>
    
    <figcaption>An elephant at sunset</figcaption>
  </figure>
</body>
</html>
```



An elephant at sunset

**Note** The *figure*, its *caption*, and its *contents* are referenced as a **single unit**

# The <figure> and <figurecaption> Elements cont'd



## Output

### Example 2:

```
<!DOCTYPE html>
<html lang="en">
<head>
<title>Example of HTML figure Tag</title>
</head>
<body>
  <figure>
    <p style="white-space:pre">
Bid me discourse, I will enchant thine ear,
  Or like a fairy trip upon the green,
Or, like a nymph, with long dishevell'd
  Dance on the sands, and yet no footing seen:
Love is a spirit all compact of fire,
  Not gross to sink, but light, and will aspire.
    <figcaption><cite>Venus and Adonis</cite>
      by William Shakespeare</figcaption>
  </figure>
</body>
</html>
```

Bid me discourse, I will enchant thine ear,  
Or like a fairy trip upon the green,  
Or, like a nymph, with long dishevell'd hair,  
Dance on the sands, and yet no footing seen:  
Love is a spirit all compact of fire,  
Not gross to sink, but light, and will aspire.

*Venus and Adonis*, by William Shakespeare

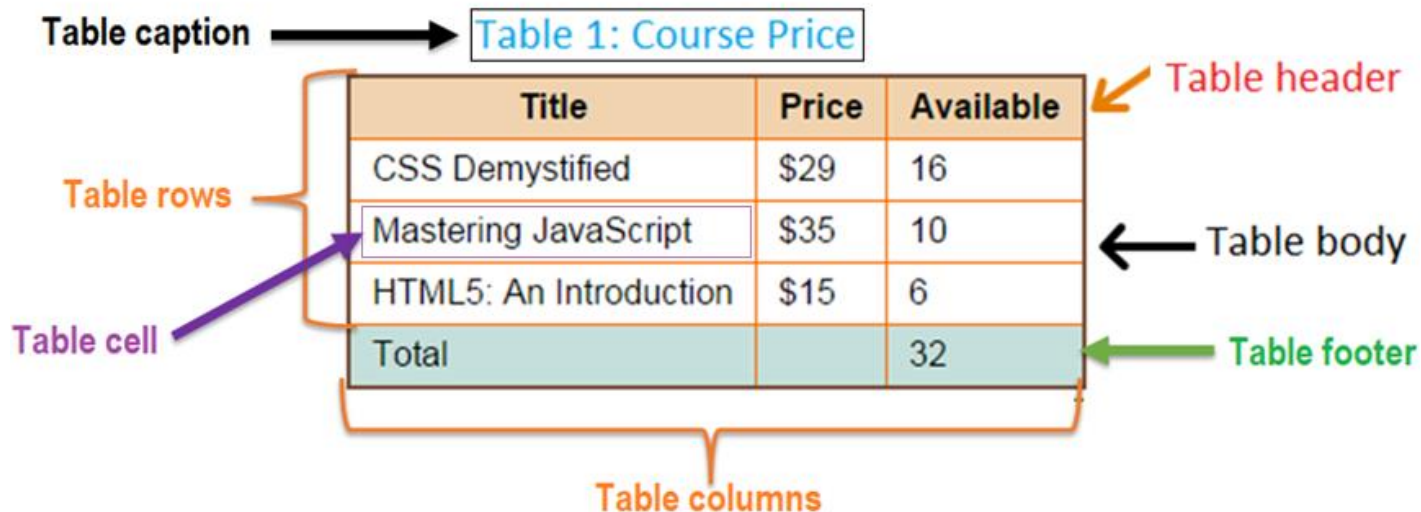
### Note:

Only one <figcaption> element can be nested within a <figure> tag although the <figure> element itself may contain multiple other elements like <img> or <code>

# HTML Table Element



- Tables play an essential role in organizing complex data in a simple and logical way, and presenting it in easy follow
- The HTML table model allows authors to arrange data (text, preformatted text, images, links, forms, form fields, other tables, etc.) in tabular
- Before taking a look how to use tables in HTML, let's take a look at *Table structure*



# HTML Table Element cont'd



Element	tag	Description
Table	<code>&lt;table&gt;</code> <code>&lt;/table&gt;</code>	<ul style="list-style-type: none"><li>• Defines the beginning and end of the table</li><li>• A container tag that holds the other components of the html table</li></ul>
Table rows	<code>&lt;tr&gt;</code> <code>&lt;/tr&gt;</code>	<ul style="list-style-type: none"><li>• Defines the beginning and end of a horizontal row</li><li>• May be grouped into a head, foot, and body sections</li></ul>
Table cells	<code>&lt;td&gt;</code> <code>&lt;/td&gt;</code>	<ul style="list-style-type: none"><li>• Defines an individual cell</li><li>• Cells are always placed inside a row</li></ul>

# HTML Table Element cont'd

## Example 1: Creating a table with default style

```
<table>
<tr>
  <td> Title </td>
  <td> Price </td>
  <td> Available </td>
</tr>
<tr>
  <td> CSS Demystified </td>
  <td> $29 </td>
  <td> 16 </td>
</tr>
<tr>
  <td> Mastering JavaScript </td>
  <td> $35 </td>
  <td> 10 </td>
</tr>
<tr>
  <td> HTML5: An Introduction </td>
  <td> $15 </td>
  <td> 6 </td>
</tr>
</table>
```

Title	Price	Available
CSS Demystified	\$29	16
Mastering JavaScript	\$35	10
HTML5: An Introduction	\$15	6

### Note:

*By default table doesn't have borders*



# HTML Table Element cont'd



Element	tag	Description
Table caption	<code>&lt;caption&gt; &lt;/caption&gt;</code>	<ul style="list-style-type: none"><li>• Specifies the caption (or title) of a table that provides a short description of the table's purpose</li><li>• Goes after the table tag but not inside “tr” or “td.”</li><li>• Only single caption per table</li><li>• Appears centered above the table</li></ul>
Table header	<code>&lt;th&gt; &lt;/th&gt;</code>	<ul style="list-style-type: none"><li>• Defines a table header row. Used instead of “td.”</li><li>• Text is bold &amp; centered within the cell</li></ul>
Table section	<code>&lt;thead&gt; &lt;/thead&gt;</code>	Defines a set of rows defining the head of the columns of the table
	<code>&lt;tbody&gt; &lt;/tbody&gt;</code>	Encapsulates a set of table rows (<tr> elements ), indicating that they comprise the body of the table
	<code>&lt;tfoot&gt; &lt;/tfoot&gt;</code>	Defines a set of rows summarizing the columns of the table

# HTML Table Element example

```

<table>
  <caption> Course Price</caption>
  <thead>
    <tr><th> Title </th> <th> Price </th> <th> Available </th> </tr>
  </thead>

  <tbody>
    <tr><td> CSS Demystified </td> <td> $29 </td> <td> 16 </td> </tr>
    <tr><td> Mastering JavaScript</td><td> $35 </td> <td> 10 </td> </tr>
    <tr><td> HTML5: An Introduction </td><td> $15 </td><td> 6 </td></tr>
  </tbody>

  <tfoot>
    <tr><td> Total </td> <td></td> <td> 32 </td> </tr>
  </tfoot>
</table>
  
```

Title	Price	Available
CSS Demystified	\$29	16
Mastering JavaScript	\$35	10
HTML5: An Introduction	\$15	6
Total		32

# HTML Table Element attributes



- All most all attributes of the table elements are deprecated.
- Only *<td>* and *<tr>* tags have some attributes described below  
**<td> tag and <tr> tag attributes**

Attribute	Value	Description
colspan	<i>Positive integer &lt;=1000</i>	<ul style="list-style-type: none"><li>• Indicates for how many columns the cell extends (span)</li><li>• Its default value is 1</li></ul>
rowspan	<i>Positive integer &lt;=65534</i>	<ul style="list-style-type: none"><li>• Indicates for how many rows the cell extends (span).</li><li>• Its default value is 1; if its value is set to 0, it extends until the end of the table section</li></ul>
headers	<i>Header_id</i>	Specifies one or more header cells a table cell is related to
scope	<i>row / col / rowgroup / colgroup</i>	<i>Enumerated attribute defines the cells that the header (defined in the &lt;th&gt;) element relates to</i>

# HTML Table Element cont'd

- **Example:** Merging Cells with rowspan and colspan attributes

```
<table>
  <thead>
    <tr>
      <th rowspan = "2">Browser</th>
      <th colspan = "2">Vistor</th>
    </tr>
    <tr>
      <th>Number</th>
      <th>Precentage</th>
    </tr>
  </thead>
  <tbody>
    <tr>
      <td>Mozila Firefox</td><td>163</td><td>59%</td> </tr>
      <tr><td>Google Chrome</td><td>78</td> <td>28%</td> </tr>
      <tr><td>Safari</td><td>35</td><td>13%</td> </tr>
    </tbody>
  </table>
```

Browser	Visitors	
	Number	Percentage
Mozilla Firefox	163	59%
Google Chrome	78	28%
Safari	35	13%

# HTML Table Element cont'd



- The `<colgroup>` element
  - It defines a group of columns within a table for formatting .
  - It is useful for applying styles to entire columns, instead of repeating the styles for each cell, for each row.
  - To define different properties to a column within a `<colgroup>` element, it require the `<col>` tag
- The `<col>` element
  - It specifies column properties (common semantics) for each column (all common cells) within a `<colgroup>` element.
  - The common semantic (like color, padding etc.) is specified using CSS

# HTML Table Element cont'd



- Both elements (<colgroup> and <col>) has single attribute named “span”
  - which is a positive integer indicating the number of consecutive columns the elements span

## Example :

	Section A		Section B	
Class	Male	Female	Male	Female
8	30	40	30	20
9	20	30	30	20
10	10	20	20	30
Total	60	90	80	70

# HTML Table Element cont'd



Example – using CSS:

## The colgroup element

ISBN	Title	Price
3476896	My first HTML	\$53
5869207	My first CSS	\$49

```
<h3>The colgroup element</h3>
<table>
  <colgroup>
    <col span="2" style="background-color:red">
    <col style="background-color:yellow">
  </colgroup>
  <tr><th>ISBN</th><th>Title</th><th>Price</th></tr>
  <tr>
    <td>3476896</td><td>My first HTML</td><td>$53</td>
  </tr>
  <tr><td>5869207</td><td>My first CSS</td><td>$49</td>
  </tr>
</table>
```

