

# CMPE 280 - Web User Interface Design and Development



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# Class Roadmap

08/20

08/27

09/03

09/10

09/17

09/24

10/01

- Why Web UI?
- Pre-design
- VOC
- Design Principles
- Personas
- The Mental Model
- Storyboarding
- Wire framing
- A/B Testing
- User Feedback

- Web Designs
- Tools
- Conceptual designs

- HTML 5
- Features Techniques
- Working with DOM
- Window Object
- Working with Events
- Canvas elements
- Using Ajax

- CSS 3
- Java Script Programming
- HTML DOM
- The Browser Object Model
- Client Detection
- The Document Object Model
- Best Practices
- APIs
- Java Script Libraries
- Google Charts
- Drag & Drop
- Geo location
- Web storage

- CORS
- Sencha Ext JS
- DOJO
- D3JS
- Google Analytics
- 

- Jquery DOM
- Pass the data
- JSON and Data
- Example of APIs:
- Google API
- YouTube
- Maps
- Angular JS
- Backbone JS
- Web Sockets

**Due – Team Names**

**Due – Team Research Paper Topic**

**Due – Team based Project Topic**



\*\*\* must be a responsive web design



**10/08  
Mid Term**



# Class Roadmap

10/15

10/22

10/29

11/05

11/12

11/19

11/26  
12/03

- Bootstrap
- Angular JS
- Sencha
- Server side programming
- Create Web Application
- Create RESTful Web Services
- Create Data Tier To retrieve data
- Security
- Cross Browser Support
- JPA
- In-Memory Cache Management
- Terracotta
- Amazon Elastic Cache

- Web UI Design Trends
- Pagination
- Image Caching
- Localization support
- Web performance optimization
- Web Page Optimization
- CSS Optimization
- Ajax optimization
- Server Side Optimization

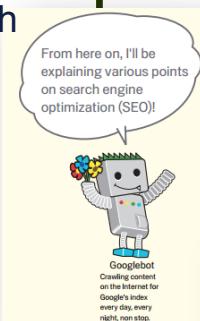
- Testing Website
- Selenium Testing Framework
- Search Engine Optimization Techniques
- Cloud Deployment Frameworks
- Google Analytics
- Localization strategies
- Responsive Web Design

Project presentations

Amazon ElastiCache



**Due** Team Research Paper (10/29)



**Due** – Cloud Hosting Ready (11/12)

Send me Your website links

\*\*\* **11/26 Thanksgiving Holiday** \*\*\*

Bonus (11/12)



Pop-Quizzes



**12/10**  
**Final Exam**

# Agenda

1. Introduction HTML
2. HTML Elements
3. HTML Element list
4. HTML 5 Features
5. HTML Content Models
6. Demo
7. Body Element



HTML

# HTML

## What is HTML?

HTML is the language for describing the structure of Web pages. HTML gives authors the means to:

- Publish online documents with headings, text, tables, lists, photos, etc.
- Retrieve online information via hypertext links, at the click of a button.
- Design forms for conducting transactions with remote services, for use in searching for information, making reservations, ordering products, etc.
- Include spread-sheets, video clips, sound clips, and other applications directly in their documents.

With HTML, authors describe the structure of pages using markup. The elements of the language label pieces of content such as “paragraph,” “list,” “table,” and so on.

Source: <http://www.w3.org/standards/webdesign/htmlcss#whathtml>



# History

The HyperText Markup Language (HTML) is the publishing language of the World Wide Web. The first version of HTML was described by Tim Berners-Lee in late 1991. For its first five years (1990-1995), HTML went through a number of revisions and experienced a number of extensions, primarily hosted first at CERN, and then at the IETF.

With the creation of the W3C, HTML's development changed venue again. A first abortive attempt at extending HTML in 1995 known as HTML 3.0 then made way to a more pragmatic approach known as HTML 3.2, which was completed in 1997. HTML4 followed, reaching completion in 1998.

Version	Published year
HTML+	1993
HTML2.0	1995
HTML3.2	1997
HTML4.01	1999

Source: [http://www.w3.org/wiki/HTML/Training/What\\_is\\_HTML%3F](http://www.w3.org/wiki/HTML/Training/What_is_HTML%3F)

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# HTML File

```
1 <!DOCTYPE html>
<html lang="en" 2
<head> 3
    <meta charset="utf-8">
    <title>Sample Web page</title>
    <script src="sample.js"> </script>
</head> 4
<body>
    <p>Hello!</p>
</body>
</html>
```

The DOCTYPE must be specified, and be top in the HTML document. That is, the DOCTYPE exists before the <html> start tag.

The DOCTYPE declaration is <!DOCTYPE html> and is case-insensitive in the HTML syntax.

3

- The head element represents a collection of metadata for the Document.
- The <head> ... </head> contains the title, and information on style sheets and scripts.
  - Contents in the head tag are not displayed on a Web browser.



# Pre-defined Meta Data

Metadata Name	Description
application name	The name of the web application that the current page is part of
author	The name of the author of the current page
description	A description of the current page
generator	The name of the software that generated the HTML (this is usually used when using some kind of server framework to generate HTML pages, such as Ruby on Rails, ASP.NET, etc.)
keywords	A set of comma-separated strings that describe the content of the page



Source: [http://www.w3.org/wiki/HTML/Training/Tag\\_syntax](http://www.w3.org/wiki/HTML/Training/Tag_syntax)

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# Script

The simplest way to define a script is to do so inline. This means that you include the JavaScript statements in the HTML page.

```
<!doctype html>
<html lang="en">
<head>
  <meta charset="utf-8">
  <title>Sample Web page</title>
  <script>
    document.write("This is from script")
  </script>
</head>
<body>
  <p>Hello!</p>
</body>
</html>
```



Source: [http://www.w3.org/wiki/HTML/Training/Tag\\_syntax](http://www.w3.org/wiki/HTML/Training/Tag_syntax)

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# Loading external Script

The simplest way to define a script is to do so inline. This means that you include the JavaScript statements in the HTML page.

```
<!doctype html>
<html lang="en">
<head>
  <meta charset="utf-8">
  <title>Sample Web page</title>
  <script src="simple2.js"></script>
</head>
<body>
  <p>Hello!</p>
</body>
</html>
```

A solid blue circle containing the word "async".A solid purple circle containing the word "Defer".

Source: [http://www.w3.org/wiki/HTML/Training/Tag\\_syntax](http://www.w3.org/wiki/HTML/Training/Tag_syntax)

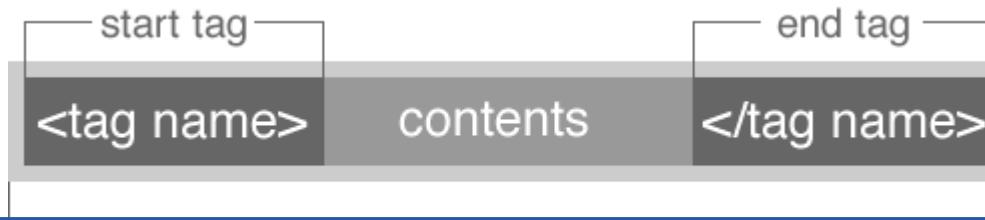
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# HTML File example

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.0//EN"  
  "http://www.w3.org/TR/REC-html40/strict.dtd">  
<html>  
  <head>  
    <title>HTML Sample Code</title>  
  </head>  
  <body>  
    <div>  
        
    </div>  
    <h1>Big Heading</h1>  
    <p>This is our HTML sample code. It shows many elements:</p>  
    <ul>  
      <li>The HTML document block.</li>  
      <li>The HEAD and title of the page.</li>  
      <li>A paragraph.</li>  
      <li>An unordered list.</li>  
    </ul>  
  </body>  
</html>
```

# Tag

HTML is using tags for its syntax. A tag is composed with special characters: <, > and /. They are interpreted by softwares to compose an HTML element.



For opening a simple element with a **start tag**

- 1.it starts with <
- 2.then a list of characters without space, the tagname (or element)
- 3.ends usually with a >.

Then closing the simple element with a **end tag**

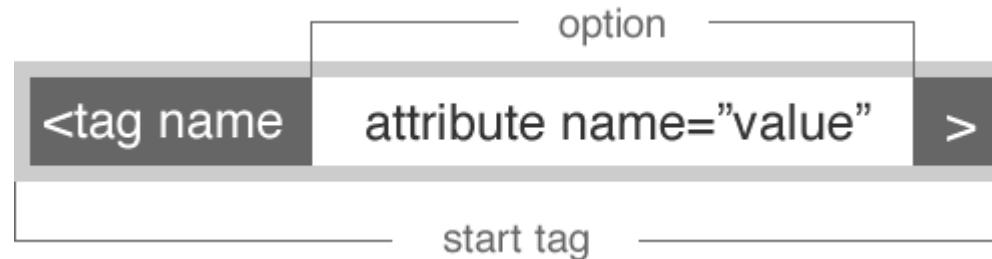
- 1.it starts with </
- 2.then the **same** list of characters without space, the tagname (or element)
- 3.ends usually with a >.



# Tag

Some elements do not have an end tag (because they are implied by the following tags). For example you might have seen.

<br> or <hr>



<tagname attribute="value"> </tagname>



Source: [http://www.w3.org/wiki/HTML/Training/Tag\\_syntax](http://www.w3.org/wiki/HTML/Training/Tag_syntax)

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[developer.mozilla.org](http://developer.mozilla.org)

# HTML Element

Void Elements

Raw Text Elements

Escapable Raw Text Elements

Foreign Elements

Normal Elements

Source: <http://www.w3.org/TR/html5/syntax.html#void-elements>



# HTML Element

Element Type	Description
Void Elements	Void elements can't have any contents (since there's no end tag, no content can be put between the start tag and the end tag). <a href="#">area</a> , <a href="#">base</a> , <a href="#">br</a> , <a href="#">col</a> , <a href="#">embed</a> , <a href="#">hr</a> , <a href="#">img</a> , <a href="#">input</a> , <a href="#">keygen</a> , <a href="#">link</a> , <a href="#">meta</a> , <a href="#">param</a> , <a href="#">source</a> , <a href="#">track</a> , <a href="#">wbr</a>

```
<area shape="circle" coords="124,58,8"  
href="venus.htm" alt="Venus">
```

Source: <http://www.w3.org/TR/html5/syntax.html#void-elements>



# HTML Element

**Yahoo!**  
Finance

Search Finance Search Web

Chandra... Mail

Breaking News WATCH LIVE: Samsung Unveiling Galaxy Gear Smartwatch

Finance Summary Wed, Sep 4, 2013, 1:50pm EDT - US Markets close in 2 hrs and 10 mins

S&P 500 1,654.11 +14.34 (+0.87%) Open 1640.72 High 1709.67 Low 1343.35

Dow 14,945.80 +111.84 (+0.75%) Open 14832.42 High 14956.74 Low 10404.50

NASDAQ 3,647.99 +35.38 (+0.98%) Open 3619.06 High 3694.19 Low 2810.80

Region: U.S. ▾

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BA	14.3326	+0.0926	+0.65%
BAC	49.52	+0.1500	+0.30%
C	35.86	-0.12	-0.33%
CCL	23.82	+0.340	+1.45%
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Add – uses area?

Source: <http://finance.yahoo.com/>



# HTML Element

Element Type	Description
Raw Text Elements	<p>Raw text elements can have text.</p> <p><u><a href="#">script</a></u>, <u><a href="#">style</a></u></p>
Escapable Raw Text elements	<p>Escapable raw text elements can have text and character references, but the text must not contain an ambiguous ampersand. There are also further restrictions described below.</p> <p><u><a href="#">textarea</a></u>, <u><a href="#">title</a></u></p>



Source: <http://www.w3.org/TR/html5/syntax.html#void-elements>

# HTML Element

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Source: <http://www.w3.org/TR/html5/syntax.html#void-elements>



# HTML Element

Element Type	Description
Foreign Elements	<p>Foreign elements whose start tag is marked as self-closing can't have any contents (since, again, as there's no end tag, no content can be put between the start tag and the end tag). Foreign elements whose start tag is <i>not</i> marked as self-closing can have text, character references, CDATA sections, other elements, and comments, but the text must not contain the character "&lt;" (U+003C) or an ambiguous ampersand.</p> <p>Elements from the <a href="#">MathML namespace</a> and the <a href="#">SVG namespace</a>.</p> <p>MathML Namespace: <a href="http://www.w3.org/TR/MathML/">http://www.w3.org/TR/MathML/</a> SVG Namespace: <a href="http://www.w3.org/TR/SVG/">http://www.w3.org/TR/SVG/</a></p>

Source: <http://www.w3.org/TR/html5/syntax.html#void-elements>



# Mathematical Markup Language (MathML)

## Version 3.0

This specification defines the Mathematical Markup Language, or MathML. MathML is an XML application for describing mathematical notation and capturing both its structure and content. The goal of MathML is to enable mathematics to be served, received, and processed on the World Wide Web, just as HTML has enabled this functionality for text.

This specification of the markup language MathML is intended primarily for a readership consisting of those who will be developing or implementing renderers or editors using it, or software that will communicate using MathML as a protocol for input or output. It is *not* a User's Guide but rather a reference document.

MathML can be used to encode both mathematical notation and mathematical content. About thirty-eight of the MathML tags describe abstract notational structures, while another about one hundred and seventy provide a way of unambiguously specifying the intended meaning of an expression. Additional chapters discuss how the MathML content and presentation elements interact, and how MathML renderers might be implemented and should interact with browsers. Finally, this document addresses the issue of special characters used for mathematics, their handling in MathML, their presence in Unicode, and their relation to fonts.

While MathML is human-readable, authors typically will use equation editors, conversion programs, and other specialized software tools to generate MathML. Several versions of such MathML tools exist, both freely available software and commercial products, and more are under development.



Source: <http://www.w3.org/TR/MathML/>

# Quadratic Formula

Example of Quadratic Equation:

```
<math display='block'><mrow><mi>x</mi><mo>=</mo><mfrac><mrow><mo>\times</mo><mi>b</mi><mo>\times</mo><msqrt><mrow><msup><mi>b</mi><mn>2</mn></msup><mo>\times</mo><mn>4</mn><mi>a</mi><mi>c</mi></mrow></msqrt></mrow><mrow><mn>2</mn><mi>a</mi></mrow></mfrac></math>
```

## The Quadratic Formula

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Source: <http://www.mathjax.org/demos/mathml-samples/>



# Gauss' Divergence Theorem

```
<div class="math-header">Gauss' Divergence Theorem</div>

<math display='block'><mrow><mrow><msub><mo>\nabla\cdot</mo><mrow><mi>F</mi><mo>)=</mo><mrow><msub><mo>\int_D</mo><mi>F</mi><mo>\cdot</mo><mi>n</mi><mo> dS</mo></mrow></mrow></math>
```

## Gauss' Divergence Theorem

$$\int_D (\nabla \cdot F) dV = \int_{\partial D} F \cdot n dS$$

Source: <http://www.mathjax.org/demos/mathml-samples/>



# MathML

Source: <http://www.mathjax.org/demos/mathml-samples/>

## The Quadratic Formula

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

## Cauchy's Integral Formula

$$f(a) = \frac{1}{2\pi i} \oint_{\gamma} \frac{f(z)}{z-a} dz$$

## Double angle formula for Cosines

$$\cos(\theta + \varphi) = \cos(\theta) \cos(\varphi) - \sin(\theta) \sin(\varphi)$$

## Gauss' Divergence Theorem

$$\int_D (\nabla \cdot F) dV = \int_{\partial D} F \cdot n dS$$

## Curl of a Vector Field

$$\vec{\nabla} \times \vec{F} = \left( \frac{\partial F_z}{\partial y} - \frac{\partial F_y}{\partial z} \right) \mathbf{i} + \left( \frac{\partial F_x}{\partial z} - \frac{\partial F_z}{\partial x} \right) \mathbf{j} + \left( \frac{\partial F_y}{\partial x} - \frac{\partial F_x}{\partial y} \right) \mathbf{k}$$

## Standard Deviation

$$\sigma = \sqrt{\frac{1}{N} \sum_{i=1}^N (x_i - \mu)^2}$$



# Scalable Vector Graphics (SVG)

**SVG is a language for describing two-dimensional graphics in XML** [[XML10](#)]. SVG allows for three types of graphic objects: **vector graphic shapes** (e.g., paths consisting of straight lines and curves), **images** and **text**. Graphical objects can be grouped, styled, transformed and composited into previously rendered objects. The feature set includes nested transformations, clipping paths, alpha masks, filter effects and template objects.

SVG drawings can be [interactive](#) and [dynamic](#). [Animations](#) can be defined and triggered either declaratively (i.e., by embedding SVG animation elements in SVG content) or via scripting.

Sophisticated applications of SVG are possible by use of a supplemental scripting language which accesses [SVG Document Object Model \(DOM\)](#), which provides complete access to all elements, attributes and properties. A rich set of [event handlers](#) such as '[onmouseover](#)' and '[onclick](#)' can be assigned to any SVG graphical object. Because of its [compatibility and leveraging of other Web standards](#), features like [scripting](#) can be done on XHTML and SVG elements simultaneously within the same Web page.

SVG is a language for rich graphical content. For accessibility reasons, if there is an original source document containing higher-level structure and semantics, it is recommended that the higher-level information be made available somehow, either by making the original source document available, or making an alternative version available in an alternative format which conveys the higher-level information, or by using SVG's facilities to include the higher-level information within the SVG content. For suggested techniques in achieving greater accessibility, see [Accessibility](#).



Source: <http://www.w3.org/TR/SVG/intro.html>

# SVG Namespace Example

```
<?xml version="1.0" standalone="no"?>
<!DOCTYPE svg PUBLIC "-//W3C//DTD SVG 1.1//EN"
 "http://www.w3.org/Graphics/SVG/1.1/DTD/svg11.dtd">
<svg width="8cm" height="3cm" viewBox="0 0 800 300"
 xmlns="http://www.w3.org/2000/svg" version="1.1">
<desc>Example anim01 - demonstrate animation elements</desc>
<rect x="1" y="1" width="798" height="298"
 fill="none" stroke="blue" stroke-width="2" />
<!-- The following illustrates the use of the 'animate' element
 to animate a rectangles x, y, and width attributes so that
 the rectangle grows to ultimately fill the viewport. -->
<rect id="RectElement" x="300" y="100" width="300" height="100"
 fill="rgb(255,255,0)" >
<animate attributeName="x" attributeType="XML"
 begin="0s" dur="9s" fill="freeze" from="300" to="0" />
<animate attributeName="y" attributeType="XML"
 begin="0s" dur="9s" fill="freeze" from="100" to="0" />
<animate attributeName="width" attributeType="XML"
 begin="0s" dur="9s" fill="freeze" from="300" to="800" />
<animate attributeName="height" attributeType="XML"
 begin="0s" dur="9s" fill="freeze" from="100" to="300" />
</rect>
</text>
</g>
</svg>
```



Source: <http://www.w3.org/2000/svg>

# SVG Example

W3C Recommendation

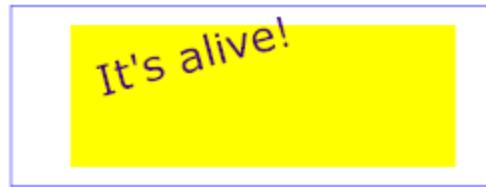
```
begin="3s" dur="6s" fill="freeze" />
<animateMotion path="M 0 0 L 100 100"
    begin="3s" dur="6s" fill="freeze" />
<animate attributeName="fill" attributeType="CSS"
    from="rgb(0,0,255)" to="rgb(128,0,0)"
    begin="3s" dur="6s" fill="freeze" />
<animateTransform attributeName="transform" attributeType="XML"
    type="rotate" from="-30" to="0"
    begin="3s" dur="6s" fill="freeze" />
<animateTransform attributeName="transform" attributeType="XML"
    type="scale" from="1" to="3" additive="sum"
    begin="3s" dur="6s" fill="freeze" />
</text>
</g>
</svg>
```



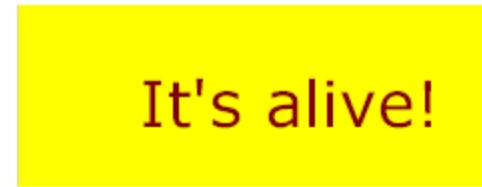
At zero seconds



At three seconds



At six seconds



At nine seconds

*Example anim01*

Source: <http://www.w3.org/TR/SVG/animate.html>



# HTML Element

Element Type	Description
Normal Element	Normal elements can have text, character references, other elements, and comments, but the text must not contain the character "<" (U+003C) or an ambiguous ampersand. Some normal elements also have yet more restrictions on what content they are allowed to hold, beyond the restrictions imposed by the content model and those described in this paragraph. Those restrictions are described below.

Source: <http://www.w3.org/TR/html5/syntax.html#void-elements>



# **HTML**



# HTML 5 Element list

Root Element

Document Meta Data

Scripting

Sections

Grouping Content

Text level Semantics

Edits

Embedded Content

Tabular Data

Forms

Interactive Elements



Source: [https://developer.mozilla.org/en-US/docs/Web/Guide/HTML/HTML5/HTML5\\_element\\_list](https://developer.mozilla.org/en-US/docs/Web/Guide/HTML/HTML5/HTML5_element_list)

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CMPE 280 - Web UI Design and Development  
02/05/2015

## Root element

Element	Description
<u>&lt;html&gt;</u>	Represents the root of an HTML or XHTML document. All other elements must be descendants of this element.

## Document metadata

Element	Description
<u>&lt;head&gt;</u>	Represents a collection of metadata about the document, including links to, or definitions of, scripts and style sheets.
<u>&lt;title&gt;</u>	Defines the title of the document, shown in a browser's title bar or on the page's tab. It can only contain text and any contained tags are not interpreted.
<u>&lt;base&gt;</u>	Defines the base URL for relative URLs in the page.
<u>&lt;link&gt;</u>	Used to link JavaScript and external CSS with the current HTML document.
<u>&lt;meta&gt;</u>	Defines metadata that can't be defined using another HTML element.
<u>&lt;style&gt;</u>	Used to write inline CSS.



Source: [https://developer.mozilla.org/en-US/docs/Web/Guide/HTML/HTML\\_5/HTML\\_5\\_element\\_list](https://developer.mozilla.org/en-US/docs/Web/Guide/HTML/HTML_5/HTML_5_element_list)

## Scripting

Element	Description
<u>&lt;script&gt;</u>	Defines either an internal script or a link to an external script. The script language is JavaScript.
<u>&lt;noscript&gt;</u>	Defines alternative content to display when the browser doesn't support scripting.

Source: [https://developer.mozilla.org/en-US/docs/Web/Guide/HTML/HTML\\_5/HTML\\_5\\_element\\_list](https://developer.mozilla.org/en-US/docs/Web/Guide/HTML/HTML_5/HTML_5_element_list)



## Sections

Element	Description
<body>	Represents the main content of an HTML document. There is only one <body> element in a document.
<section> ⓘ	Defines a section in a document.
<nav> ⓘ	Defines a section that contains only navigation links.
<article> ⓘ	Defines self-contained content that could exist independently of the rest of the content.
<aside> ⓘ	Defines some content loosely related to the page content. If it is removed, the remaining content still makes sense.
<h1>, <h2>, <h3>, <h4>, <h5>, <h6>	Heading elements implement six levels of document headings; <h1> is the most important and <h6> is the least. A heading element briefly describes the topic of the section it introduces.
<header> ⓘ	Defines the header of a page or section. It often contains a logo, the title of the Web site, and a navigational table of content.
<footer> ⓘ	Defines the footer for a page or section. It often contains a copyright notice, some links to legal information, or addresses to give feedback.
<address>	Defines a section containing contact information.
<main> ⓘ	Defines the main or important content in the document. There is only one <main> element in the document.

Source: [https://developer.mozilla.org/en-US/docs/Web/Guide/HTML/HTML\\_5/HTML\\_5\\_element\\_list](https://developer.mozilla.org/en-US/docs/Web/Guide/HTML/HTML_5/HTML_5_element_list)



# Dividing a document into sections

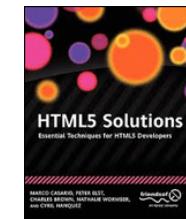
Sections

In HTML, the only real way to subdivide a document into distinct sections is to use the **<div>** tag. HTML5 presents some new options.

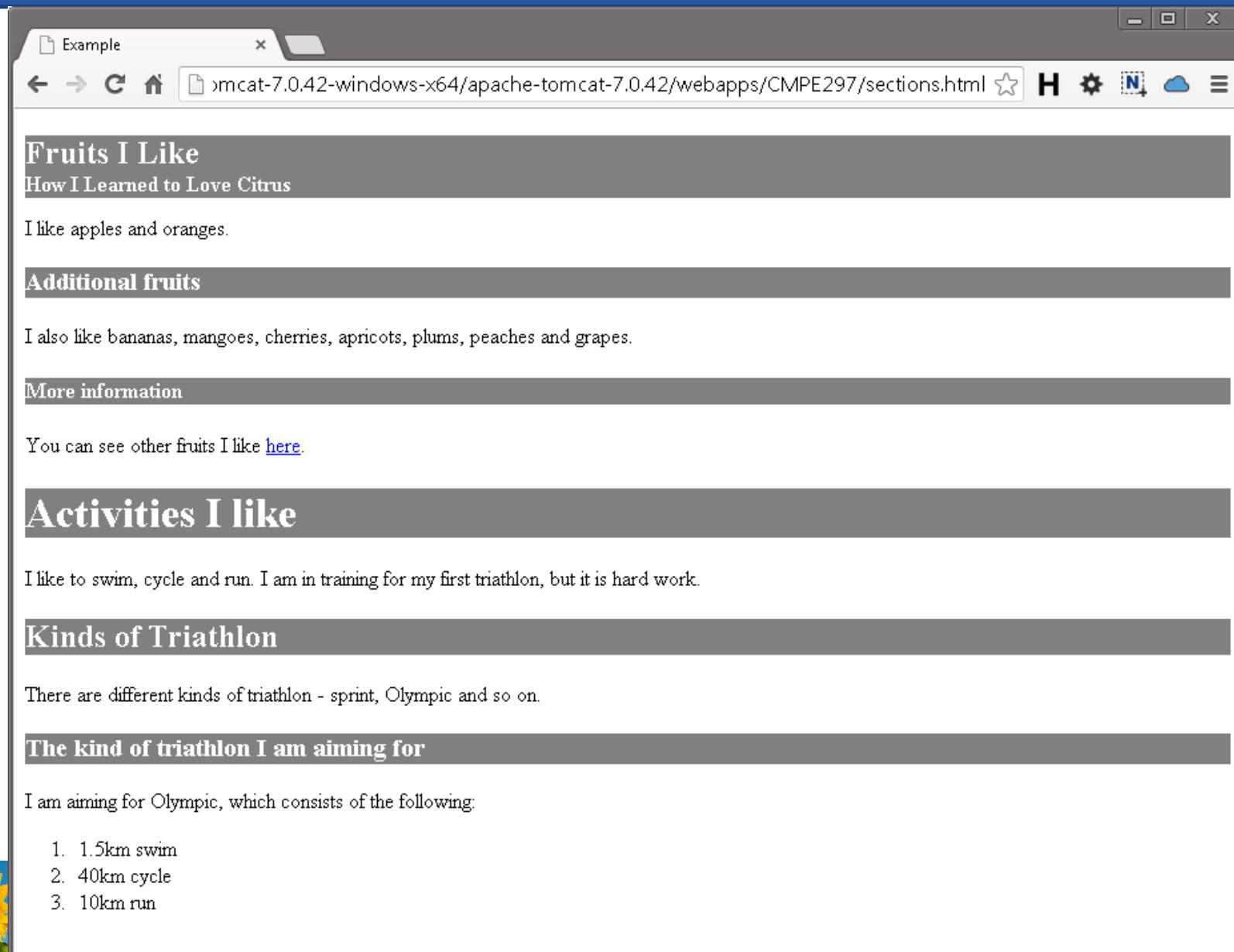
In this solution, you will learn how to use the new HTML5 tags to create distinct document sections. In the subsequent solutions, we will discuss other structural division elements.

The HTML **<div>** tag successfully divides the document into sections. But the word **<div>** has very little meaning in identifying the parts of a document. HTML5 provides several new structural elements that will divide the document into meaningful sections.

The first of these elements is the **<section></section>** tag. This element represents any logical division of the document. This could mean product descriptions, chapters, discussions, and so forth. While its functionality is similar to the **<div>** tag, it provides a more descriptive and content-sensitive way of dividing the document.



# Using Section



The screenshot shows a web browser window with the title "Example". The URL in the address bar is "tomcat-7.0.42-windows-x64/apache-tomcat-7.0.42/webapps/CMPE297/sections.html". The page content is structured with several sections:

- Fruits I Like**  
How I Learned to Love Citrus

I like apples and oranges.
- Additional fruits**

I also like bananas, mangoes, cherries, apricots, plums, peaches and grapes.
- More information**

You can see other fruits I like [here](#).
- Activities I like**

I like to swim, cycle and run. I am in training for my first triathlon, but it is hard work.
- Kinds of Triathlon**

There are different kinds of triathlon - sprint, Olympic and so on.
- The kind of triathlon I am aiming for**

I am aiming for Olympic, which consists of the following:

  1. 1.5km swim
  2. 40km cycle
  3. 10km run

In the bottom left corner, there is a small logo of a sunflower with a globe in its center. In the bottom right corner, the text "End Development 02/05/2015" is visible.

# Section Tag

The purpose of the <section></section> element and the subsequent structural elements shown in this chapter is not to replace the HTML <div> tag. If you are dividing your document into logical document sections, use the <section></section> element or one of the structural elements. **However, if you are dividing the document only for purposes of formatting, then the <div> tag is appropriate to use.**



# Article Element

Sections

Increasingly, it is important to make all or part of the contents of a page distributable. For instance, forum discussion, blogs, reader comments, and so on could all be candidates for distribution or syndication.

In this solution, we will discuss the new HTML5 element, `<article></article>`, which makes accomplishing this much easier than with traditional HTML.

**The purpose of this structural tag is not to serve as another way to divide your document into sections. Rather, it is used to identify the portions of the document that you want to be independent and distributable from the rest of the document.**

Since the `<article></article>` element is independent, it can have its own sections and subdivisions. You can make any element distributable by surrounding it with the `<article></article>` element.



# Article Element

Sections

Aside Element

file:///C:/Hanumayamma/CiscoAnalytics/BooksAndReferences/FY2014/CMPE297/ClassSlides/Session3/aside.html

When baking a cheesecake, it is important not to over bake it. You only want to bake it until the middle has a slight wiggle, not until it is rock solid.

It is important that you use a water bath, discussed at the right, to ensure even baking of your cheesecake.

### The proper way to mix ingredients

When using a stand-mixer, it is important that you do not over mix the ingredients.

### Proper baking techniques

It is important that you bake your cheesecake using a lot of moisture in the oven.

*To create a water bath, use a pan that will allow you to fill it with boiling water that goes halfway up the springform pan in which the cake is placed.*



# Article Element

Sections

```
<article>
<section id="mixing">
<h2>The proper way to mix ingredients</h2>
<p>When using a stand-mixer, it is important that you do not over mix the
ingredients...</p>
</section>
<section id="baking">
<h2>Proper baking techniques</h2>
<p> It is important that you bake your cheesecake using a lot of moisture in the
oven...</p>
</section>
</article>
```



The screenshot shows a Microsoft Internet Explorer window with three tabs open. The active tab is titled 'Solution 12-1: Creating skip links with the nav element'. The URL in the address bar is 'file:///C:/Hanumayamma/CiscoAnalytics/BooksAndReferences/FY2014/CMPE297/ClassSlides/Session3/Nav.html'. The page content includes a section header 'Solution 12-1: Creating skip links with the nav element', a bulleted list of links ('My Blog', 'My LinkedIn Profile'), and a bolded section header 'Stop using custom skip links!'. Below it, a note says 'And start using the semantic HTML5 tags.' followed by another bulleted list ('The NAV tag'). A section titled 'The Nav tag' is present, along with a link to 'From the W3C NAV specs'. The taskbar at the bottom shows various pinned icons.

# Nav Element

Sections

```
<!DOCTYPE html>
<html>
<head>
<title>
Solution 12-1: Creating skip links with the nav element
</title>
</head>
<body>
<header>
<h1>Solution 12-1: Creating skip links with the nav element </h1>
</header>
<nav>
<ul>
<li><a href="https://codepundit.wordpress.com/">My Blog</a></li>
<li><a href="https://www.linkedin.com/profile/view?id=11036930&trk=nav_responsive_tab_profile">My LinkedIn Profile</a></li>
</ul>
</nav>
<header>
<h1>Stop using custom skip links!</h1>
<p>And start using the semantic HTML5 tags.</p>
</header>
<nav>
<ul>
<li><a href="#navtag">The NAV tag</a></li>
</ul>
</nav>
<section id="navtag">
<h1>The Nav tag</h1>
<h3>From the W3C NAV specs</h3>
<p>
A section with navigation links.
</p>
</section>
</body>
</html>
```



# The Semantic Header and Footer

Sections

Gone are the days of:

```
view plain copy to clipboard print ?  
1. <div id="header">  
2. ...  
3. </div>  
4.  
5. <div id="footer">  
6. ...  
7. </div>
```

Try not to confuse these elements with the “header” and “footer” of your website. They simply refer to their container. As such, it makes sense to place, for example, meta information at the bottom of a blog post within the footer element. The same holds true for the header.

```
view plain copy to clipboard print ?  
1. <header>  
2. ...  
3. </header>  
4.  
5. <footer>  
6. ...  
7. </footer>
```

**“** It's fully appropriate to have multiple headers and footers in your projects. **”**

Divs, by nature, have no semantic structure — even after an id is applied. Now, with HTML5, we have access to the `<header>` and `<footer>` elements. The mark-up above can now be replaced with:



# Headers and footers

Sections

The screenshot shows a web browser window with the title bar "Example". The address bar contains the URL `///C:/apache-tomcat-7.0.42-windows-x64/apache-tomcat-7.0.42/webapps/CMPE297/headerandfooters.html`. The main content area displays a page titled "Things I like" by Adam Freeman. The page has a dark header section with the title and author's name. Below this, there are two main sections: "Fruits I Like" and "Activities I like". Each section has a sub-section header and a descriptive paragraph. At the bottom of the page is a footer section with a copyright notice and a link to "Visit Apress".

**Things I like**  
by Adam Freeman

**Fruits I Like**  
How I Learned to Love Citrus  
I like apples and oranges.

**Additional fruits**  
I also like bananas, mangoes, cherries, apricots, plums, peaches and grapes.

**More information**  
You can see other fruits I like [here](#).

**Activities I like**  
I like to swim, cycle and run. I am in training for my first triathlon, but it is hard work.

**Kinds of Triathlon**  
There are different kinds of triathlon - sprint, Olympic and so on.

**The kind of triathlon I am aiming for**  
I am aiming for Olympic, which consists of the following:

1. 1.5km swim
2. 40km cycle
3. 10km run

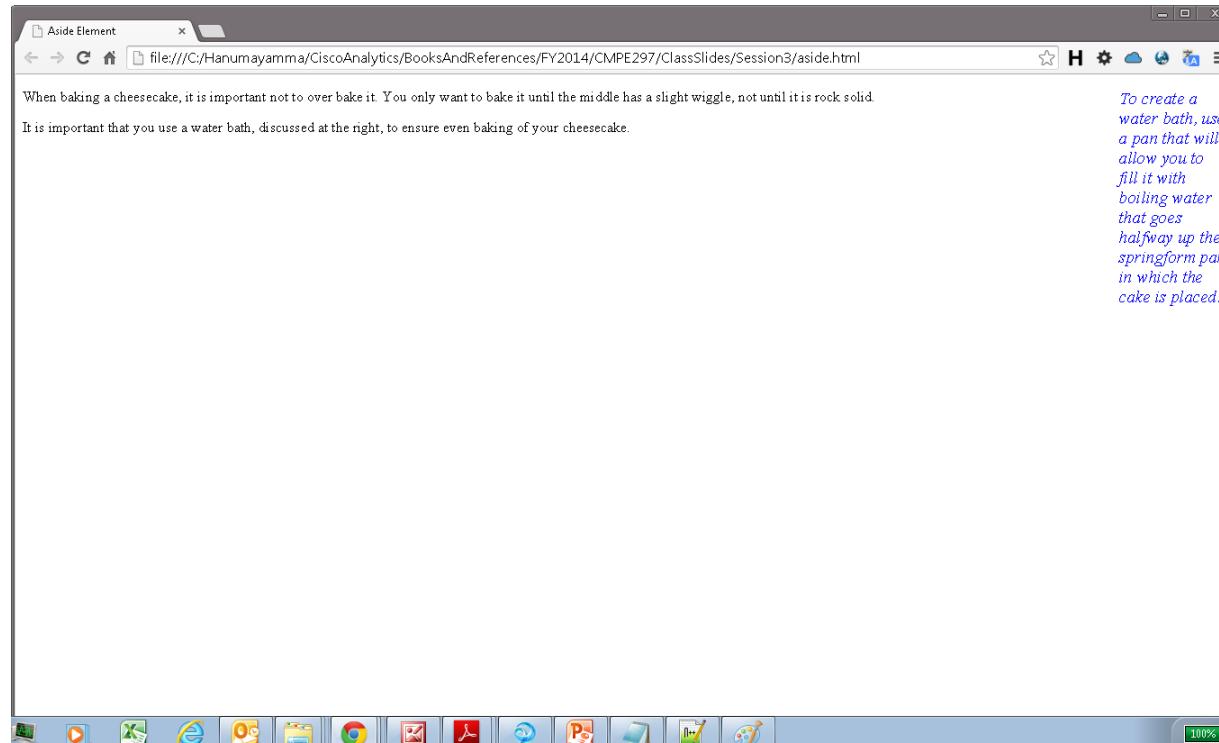
©2011, Adam Freeman. [Visit Apress](#)



# Aside Element

If want to create a side discussion in traditional HTML, you use `<div>` tags and correct use of Cascading Style Sheets (CSS) for proper positioning.

HTML5 makes the process easier by providing a new structural element, `<aside></aside>`. Like the `<section>` element, it provides a more descriptive way of sectioning the document.



# Aside Element

Sections

```
<!DOCTYPE html>
<html>
<head>
<title>
    Aside Element
</title>
</head>
<body>
    <aside style="font-size:larger;font-style:italic;color:blue;float:right;width:120px;">
        To create a water bath, use a pan that will allow you to fill it with boiling water that
        goes halfway up the springform pan in which the cake is placed.
    </aside>
    <p>
        When baking a cheesecake, it is important not to over bake it. You only want to bake it
        until the middle has a slight wiggle, not until it is rock solid.
    </p>
    <p>
        It is important that you use a water bath, discussed at the right, to ensure even baking
        of your cheesecake.
    </p>
</body>
</html>
```



# Aside Element

Placement of the `<aside></aside>` element is critical. In the above example, it is placed as part of the main document. However, if you want the sidebar to be specific to a certain section, then you must place it within that section.

This is especially important if you are using the `<article></article>` element so that the sidebar publishes with the rest of the related material.



# Aside Element

Sections

The screenshot shows a web browser window titled "Example" displaying a local file at "file:///C:/apache-tomcat-7.0.42-windows-x64/apache-tomcat-7.0.42/webapps/CMPE297/aside.html". The page content is as follows:

**Things I like**  
by Adam Freeman

**Contents**

- [Fruits I Like](#)
- [Activities I Like](#)

I like apples and oranges.

**Additional fruits**

I also like bananas, mangoes, cherries, apricots, plums, peaches and grapes.

**More information**

You can see other fruits I like [here](#)

More Information: [Learn More About Fruit](#)

**Activities I like**  
It hurts, but I keep doing it

I like to swim, cycle and run. I am in training for my first triathlon, but it is hard work.

**Kinds of Triathlon**

There are different kinds of triathlon - sprint, Olympic and so on.

**The kind of triathlon I am aiming for**

I am aiming for Olympic, which consists of the following:

A small decorative graphic of a sunflower is visible in the bottom left corner.

# HTML 5 Element list

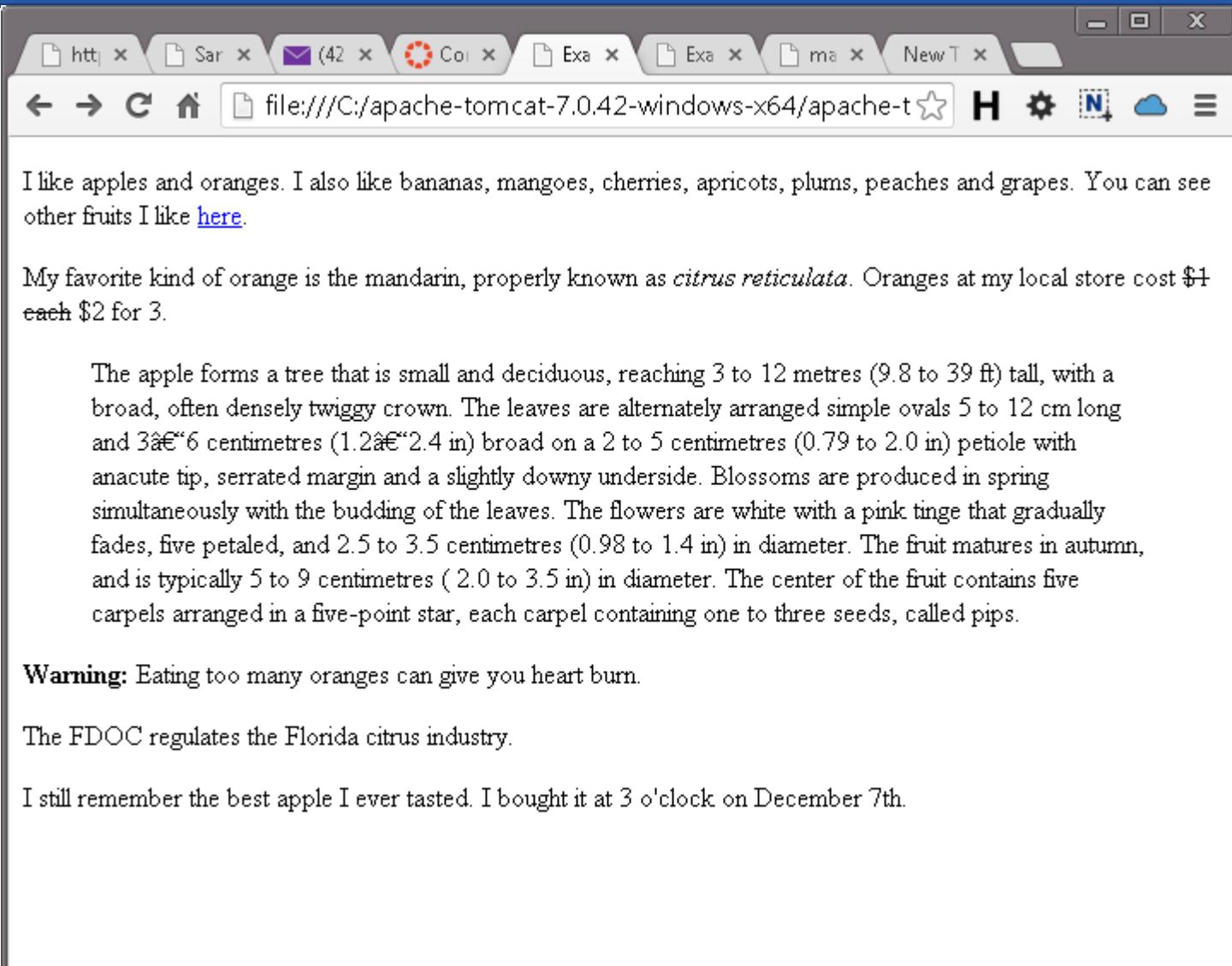
## Grouping Content

Element	Description
<p>	Defines a portion that should be displayed as a paragraph.
<hr>	Represents a thematic break between paragraphs of a section or article or any longer content.
<pre>	Indicates that its content is preformatted and that this format must be preserved.
<blockquote>	Represents a content that is quoted from another source.
<ol>	Defines an ordered list of items.
<ul>	Defines an unordered list of items.
<li>	Defines a item of an enumeration list.
<dl>	Defines a definition list, that is, a list of terms and their associated definitions.
<dt>	Represents a term defined by the next <dd>.
<dd>	Represents the definition of the terms immediately listed before it.
<figure> ⓘ	Represents a figure illustrated as part of the document.
<figcaption> ⓘ	Represents the legend of a figure.
<div>	Represents a generic container with no special meaning.



Source: [https://developer.mozilla.org/en-US/docs/Web/Guide/HTML/HTML\\_5/HTML\\_5\\_element\\_list](https://developer.mozilla.org/en-US/docs/Web/Guide/HTML/HTML_5/HTML_5_element_list)

# Usingblockquote



I like apples and oranges. I also like bananas, mangoes, cherries, apricots, plums, peaches and grapes. You can see other fruits I like [here](#).

My favorite kind of orange is the mandarin, properly known as *citrus reticulata*. Oranges at my local store cost \$1 each \$2 for 3.

The apple forms a tree that is small and deciduous, reaching 3 to 12 metres (9.8 to 39 ft) tall, with a broad, often densely twiggy crown. The leaves are alternately arranged simple ovals 5 to 12 cm long and 3–6 centimetres (1.2–2.4 in) broad on a 2 to 5 centimetres (0.79 to 2.0 in) petiole with an acute tip, serrated margin and a slightly downy underside. Blossoms are produced in spring simultaneously with the budding of the leaves. The flowers are white with a pink tinge that gradually fades, five petaled, and 2.5 to 3.5 centimetres (0.98 to 1.4 in) in diameter. The fruit matures in autumn, and is typically 5 to 9 centimetres (2.0 to 3.5 in) in diameter. The center of the fruit contains five carpels arranged in a five-point star, each carpel containing one to three seeds, called pips.

**Warning:** Eating too many oranges can give you heart burn.

The FDOC regulates the Florida citrus industry.

I still remember the best apple I ever tasted. I bought it at 3 o'clock on December 7th.



# The Figure Element

Grouping Content

Consider the following mark-up for an image:

```
view plain copy to clipboard print ?  
1.   
2. <p>Image of Mars. </p>
```

There unfortunately isn't any easy or semantic way to associate the caption, wrapped in a paragraph tag, with the image element itself. HTML5 rectifies this, with the introduction of the **<figure>** element. When combined with the **<figcaption>** element, we can now semantically associate captions with their image counterparts.

```
view plain copy to clipboard print ?  
1. <figure>  
2.     
3.   <figcaption>  
4.     <p>This is an image of something interesting. </p>  
5.   </figcaption>  
6. </figure>
```



# The Figure Element – Inserting Images

Grouping Content

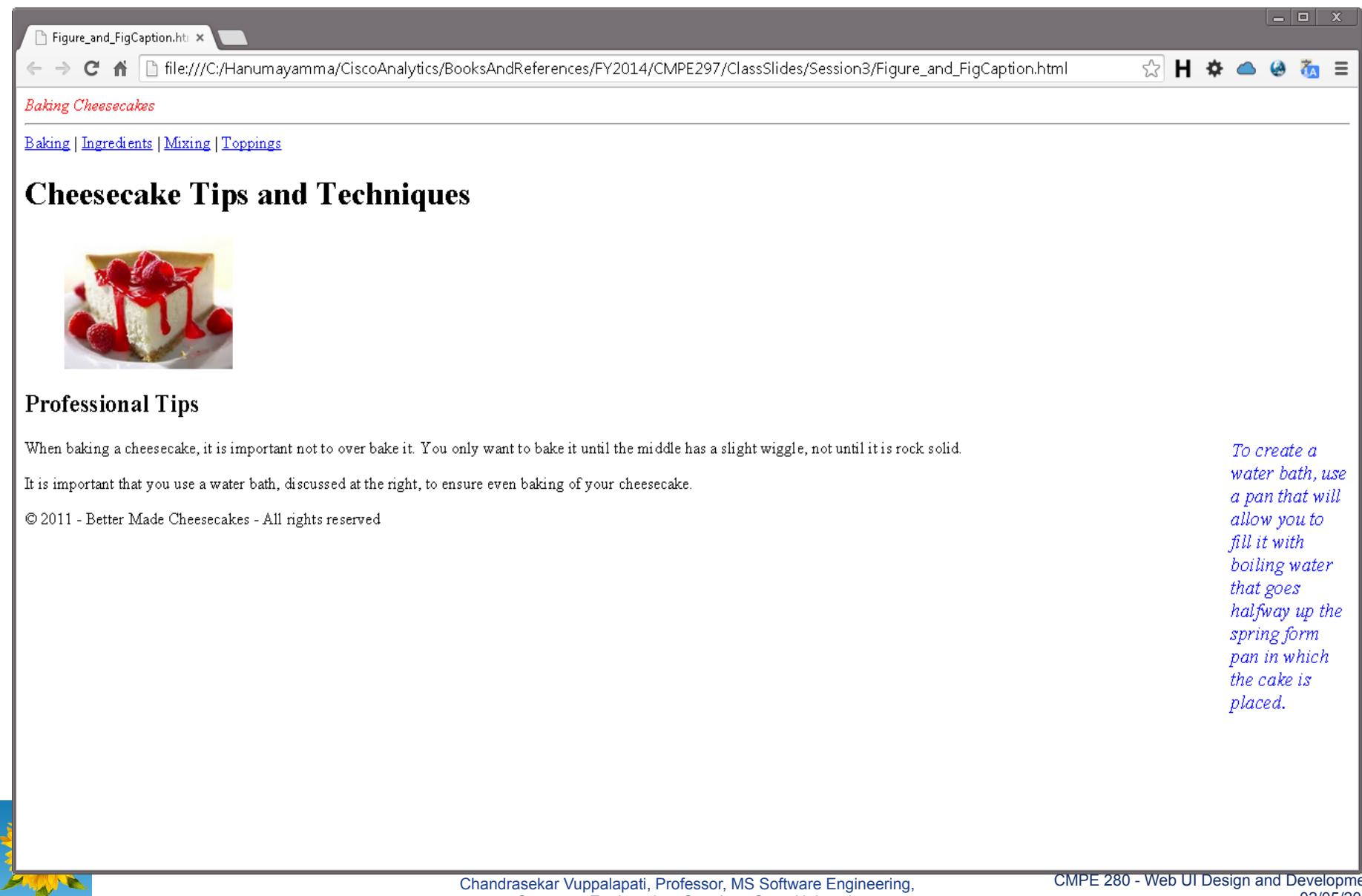
It is fairly common to insert photos, illustrations, diagrams, and so on into a web page. Up to now, a developer could just insert an `<img>` element wherever it was needed. Now you can use markup to designate where the figures should be placed using the new `<figure></figure>` element in HTML5.

In this solution, you will see an example of using the `<figure></figure>` element.



# The Figure Element – Inserting Images

Grouping Content



A screenshot of a web browser window titled "Figure\_and\_FigCaption.htm". The URL in the address bar is "file:///C:/Hanumayamma/CiscoAnalytics/BooksAndReferences/FY2014/CMPE297/ClassSlides/Session3/Figure\_and\_FigCaption.html". The page content includes a header "Baking Cheesecakes" with links to "Baking", "Ingredients", "Mixing", and "Toppings". Below this is a section titled "Cheesecake Tips and Techniques" featuring a photograph of a cheesecake topped with raspberries and a red sauce. A sidebar on the right contains the text "Professional Tips" followed by two paragraphs of text. At the bottom right, there is a blue callout box containing additional text. The footer of the slide includes a small sunflower icon and the text "Chandrasekar Vuppala, Professor, MS Software Engineering, Computer Engineering, San Jose State University." and "CMPE 280 - Web UI Design and Development 02/05/2015".

Baking Cheesecakes

[Baking](#) | [Ingredients](#) | [Mixing](#) | [Toppings](#)

## Cheesecake Tips and Techniques



### Professional Tips

When baking a cheesecake, it is important not to over bake it. You only want to bake it until the middle has a slight wiggle, not until it is rock solid.

It is important that you use a water bath, discussed at the right, to ensure even baking of your cheesecake.

© 2011 - Better Made Cheesecakes - All rights reserved

*To create a water bath, use a pan that will allow you to fill it with boiling water that goes halfway up the spring form pan in which the cake is placed.*

Chandrasekar Vuppala, Professor, MS Software Engineering,  
Computer Engineering, San Jose State University.

CMPE 280 - Web UI Design and Development  
02/05/2015

# The Figure Element – Inserting Images

Grouping Content

```
<header>
<span style="color:red;font-style:italic;">
Baking Cheesecakes
</span>
<hr>
</header>
<nav>
<a href="/Baking/" target="_blank">Baking</a> |
<a href="/ingredients/" target="_blank">Ingredients</a> |
<a href="/mixing/" target="_blank">Mixing</a> |
<a href="/toppings/" target="_blank">Toppings</a>
</nav>
<hgroup draggable="true">
<h1>Cheesecake Tips and Techniques</h1>
<figure>

</figure>
<h2>Professional Tips</h2>
</hgroup>
<aside style="font-size:larger;font-style:italic;color:blue;float:right;width:120px;">
To create a water bath, use a pan that will allow you to fill it with boiling water that
goes halfway up the spring form pan in which the cake is placed.
</aside>
<p>
When baking a cheesecake, it is important not to over bake it. You only want to bake it
until the middle has a slight wiggle, not until it is rock solid.
</p>
<p>It is important that you use a water bath, discussed at the right, to ensure even baking of
your cheesecake.</p>
<footer> &copy; 2011 - Better Made Cheesecakes - All rights reserved </footer>
```



# The Figure Element – Inserting Images

Grouping Content

Along with the new <figure> element comes another new HTML5 element called <figcaption>

</figcaption>. You place this within the <figure> element as follows:

```
<figure>
```

```

```

```
<figcaption>One of our many cheesecakes</figcaption>
```

```
</figure>
```

If you place the <figcaption> element below the picture, as shown in the example above, it will appear to the right. If you place it above, it will appear to the left.



# HTML 5 Element list

## Text-level semantics

Element	Description
<a>	Represents a <i>hyperlink</i> , linking to another resource.
<em>	Represents <i>emphasized text</i> , like a stress accent.
<strong>	Represents especially <i>important text</i> .
<small>	Represents a <i>side comment</i> , that is, text like a disclaimer or a copyright, which is not essential to the comprehension of the document.
<s>	Represents content that is no <i>longer accurate or relevant</i> .
<cite>	Represents the <i>title of a work</i> .
<q>	Represents an inline <i>quotation</i> .
<dfn>	Represents a term whose <i>definition</i> is contained in its nearest ancestor content.
<abbr>	Represents an <i>abbreviation</i> or an <i>acronym</i> ; the expansion of the abbreviation can be represented in the <code>title</code> attribute.
<data> 	Associates to its content a <i>machine-readable equivalent</i> . (This element is only in the WHATWG version of the HTML standard, and not in the W3C version of HTML5).
<time> 	Represents a <i>date and time value</i> ; the machine-readable equivalent can be represented in the <code>datetime</code> attribute.
<code>	Represents <i>computer code</i> .
<var>	Represents a <i>variable</i> , that is, <i>an actual mathematical expression or programming context, an identifier representing a constant, a symbol identifying a physical quantity, a function parameter, or a mere placeholder in prose</i> .
<samp>	Represents the <i>output</i> of a program or a computer.
<kbd>	Represents <i>user input</i> , often from the keyboard, but not necessarily; it may represent other input, like transcribed voice commands.
<sub>,<sup>	Represent a <i>subscript</i> , or a <i>superscript</i> .

Source: [https://developer.mozilla.org/en-US/docs/Web/Guide/HTML/HTML\\_5/HTML\\_5\\_element\\_list](https://developer.mozilla.org/en-US/docs/Web/Guide/HTML/HTML_5/HTML_5_element_list)



## The Data Attribute

We now officially have support for custom attributes within all HTML elements. While, before, we could still get away with things like:

```
view plain copy to clipboard print ?  
1. <h1 id=someId customAttribute=value> Thank you, Tony. </h1>
```

But now, as long as we preface our custom attribute with "data," we can officially use this method. If you've ever found yourself attaching important data to something like a `class` attribute, probably for JavaScript usage, this will come as a big help!

## HTML Snippet

```
view plain copy to clipboard print ?  
1. <div id="myDiv" data-custom-attr="My Value"> Bla Bla </div>
```

## Retrieve Value of the Custom Attribute

```
view plain copy to clipboard print ?  
1. var theDiv = document.getElementById('myDiv');  
2. var attr = theDiv.getAttribute('data-custom-attr');  
3. alert(attr); // My Val
```



# HTML 5 Element list

## Text-level semantics

Element	Description
<i>	Represents some text in an <i>alternate</i> voice or mood, or at least of different quality, such as a taxonomic designation, a technical term, an idiomatic phrase, a thought, or a ship name.
<b>	Represents a text which to which attention is drawn for <i>utilitarian purposes</i> . It doesn't convey extra importance and doesn't imply an alternate voice.
<u>	Represents a non-textual annotation for which the conventional presentation is <i>underlining</i> , such labeling the text as being misspelt or labeling a proper name in Chinese text.
<mark> ⓘ	Represents text highlighted for <i>reference</i> purposes, that is for its relevance in another context.
<ruby> ⓘ	Represents content to be marked with <i>ruby annotations</i> , short runs of text presented alongside the text. This is often used in conjunction with East Asian language where the annotations act as a guide for pronunciation, like the Japanese <i>furigana</i> .
<rt> ⓘ	Represents the <i>text of a ruby annotation</i> .
<rp> ⓘ	Represents <i>parenthesis</i> around a ruby annotation, used to display the annotation in an alternate way by browsers not supporting the standard display for annotations.
<bdi> ⓘ	Represents text that must be <i>isolated</i> from its surrounding for bidirectional text formatting. It allows embedding a span of text with a different, or unknown, directionality.
<bdo>	Represents the <i>directionality</i> of its children, in order to explicitly override the Unicode bidirectional algorithm.
<span>	Represents text with no specific meaning. This has to be used when no other text-semantic element conveys an adequate meaning, which, in this case, is often brought by global attributes like <code>class</code> , <code>lang</code> , or <code>dir</code> .
 	Represents a <i>line break</i> .
<wbr> ⓘ	Represents a <i>line break opportunity</i> , that is a suggested point for wrapping text in order to improve readability of text split on several lines.



Source: [https://developer.mozilla.org/en-US/docs/Web/Guide/HTML/HTML\\_5/HTML\\_5\\_element\\_list](https://developer.mozilla.org/en-US/docs/Web/Guide/HTML/HTML_5/HTML_5_element_list)

## Mark Element

Think of the `<mark>` element as a highlighter. A string wrapped within this tag should be relevant to the current actions of the user. For example, if I searched for "Open your Mind" on some blog, I could then utilize some JavaScript to wrap each occurrence of this string within `<mark>` tags.

```
view plain copy to clipboard print ?  
1. <h3> Search Results </h3>  
2. <p> They were interrupted, just after Quato said, <mark>"Open your Mind"</mark>. </p>
```



# The Mark Element

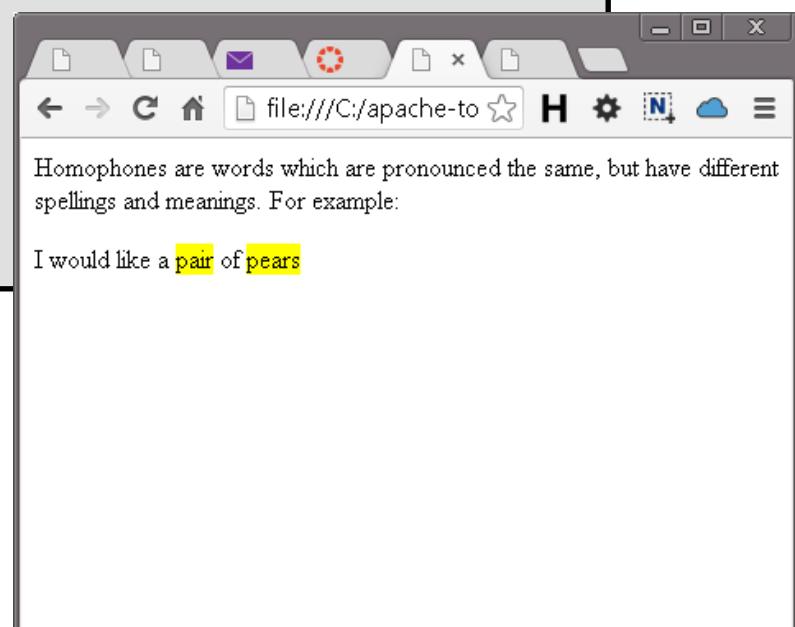
Text level Semantics

```
<!DOCTYPE HTML>
<html>
<head>
<title>Example</title>
<meta name="author" content="Adam Freeman"/>
<meta name="description" content="A simple example"/>
<link rel="shortcut icon" href="favicon.ico" type="image/x-icon" />
</head>
```

```
<body>
```

Homophones are words which are pronounced the same, but have different spellings and meanings. For example:

```
<p>
I would like a <mark>pair</mark> of <mark>pears</mark>
</p>
</body>
</html>
```

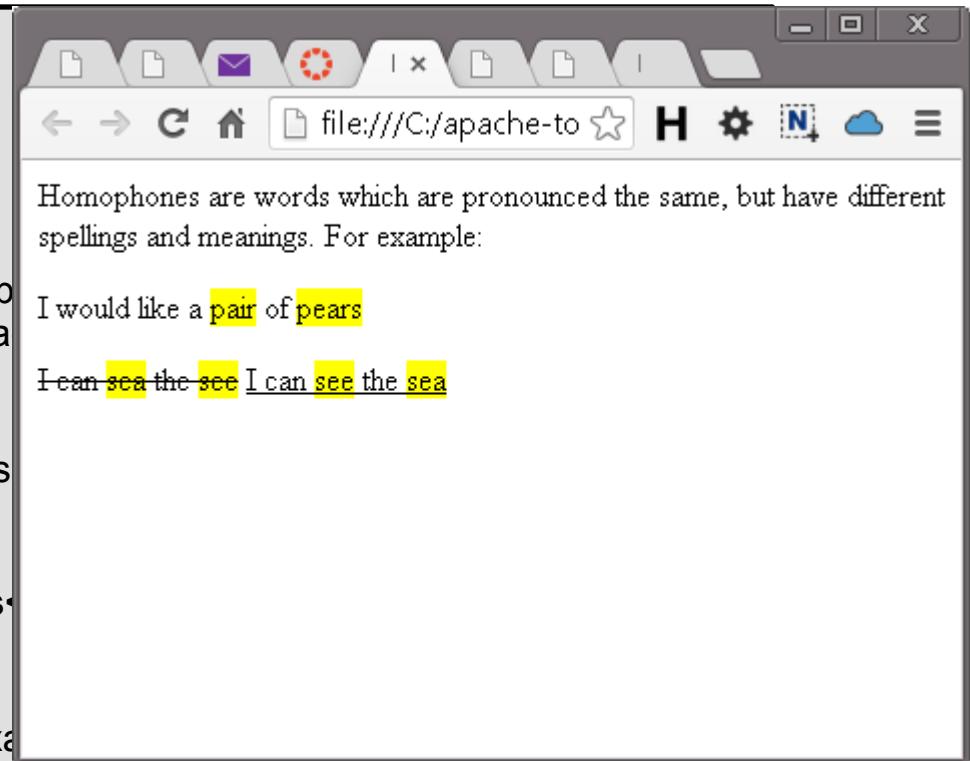


Source: <http://net.tutsplus.com/tutorials/html-css-techniques/25-html5-features-tips-and-techniques-you-must-know>

Chandrasekar Vuppalaapati, Professor, MS Software Engineering,  
Computer Engineering, San Jose State University.

# Using Del and Ins.

```
<!DOCTYPE HTML>
<html>
<head>
<title>Example</title>
<meta name="author" content="Adam Freeman"/>
<meta name="description" content="A simple example"/>
<link rel="shortcut icon" href="favicon.ico" type="image/x-icon"/>
</head>
<body>
Homophones are words which are pronounced the same and have different spellings and meanings. For example:
<p>
I would like a <mark>pair</mark> of <mark>pears</mark>
</p>
</body>
</html><!DOCTYPE HTML><html><head><title>Example</title>
<meta name="author" content="Adam Freeman"/><meta name="description" content="A simple example"/><link rel="shortcut icon" href="favicon.ico" type="image/x-icon" /></head><body>Homophones are words which are pronounced the same, but have different spellings and meanings. For example:<p>I would like a <mark>pair</mark> of <mark>pears</mark></p><p><del>I can <mark>see</mark> the <mark>see</mark></del><ins>I can <mark>see</mark> the <mark>sea</mark></ins></p></body></html>
```



# HTML 5 Element list

## Edits

Element	Description
<ins>	Defines an <i>addition</i> to the document.
<del>	Defines a <i>removal</i> from the document.

## Embedded content

Element	Description
<img>	Represents an <i>image</i> .
<iframe>	Represents a <i>nested browsing context</i> , that is an embedded HTML document.
<embed> ⓘ	Represents a <i>integration point</i> for an external, often non-HTML, application or interactive content.
<object>	Represents an <i>external resource</i> , which is treated as an image, an HTML sub-document, or an external resource to be processed by a plug-in.
<param>	Defines <i>parameters</i> for use by plug-ins invoked by <object> elements.
<video> ⓘ	Represents a <i>video</i> , and its associated audio files and captions, with the necessary interface to play it.
<audio> ⓘ	Represents a <i>sound</i> , or an <i>audio stream</i> .
<source> ⓘ	Allows authors to specify alternative media resources for media elements like <video> OR <audio>.
<track> ⓘ	Allows authors to specify timed <i>text track</i> for media elements like <video> or <audio>.
<canvas> ⓘ	Represents a <i>bitmap area</i> that scripts can be used to render graphics, like graphs, game graphics, or any visual images on the fly.
<map>	In conjunction with <area>, defines an <i>image map</i> .
<area>	In conjunction with <map>, defines an <i>image map</i> .
<svg> ⓘ	Defines an embedded <i>vectorial image</i> .
<math> ⓘ	Defines a <i>mathematical formula</i> .



Source: [https://developer.mozilla.org/en-US/docs/Web/Guide/HTML/HTML\\_5/HTML\\_5\\_element\\_list](https://developer.mozilla.org/en-US/docs/Web/Guide/HTML/HTML_5/HTML_5_element_list)

# Embed Video

With HTML5, publishing a video on a web page has become a truly simple operation. This era, in which we resorted to third-party plug-ins to make video accessible in an HTML page, is about to end. Code such as this may become a distant memory:

```
<object width="640" height="480">
<param name="movie" value="your_video.swf">
<embed src="your_video.swf" width="500" height="500">
</embed>
</object>
```

The end user will no longer have to download additional plug-ins or update to the correct version of the ones they have installed in order to watch a video. Nor will they undergo brutal browser crashes due to the instability of some of the third-party plug-ins.



# Embed Video

Let's see how things are changing with HTML5.

With the introduction of the new <video> tag, all we have to do is declare this markup in the web page, specify the video to load, and the browser will do the rest (assuming it supports the video element):

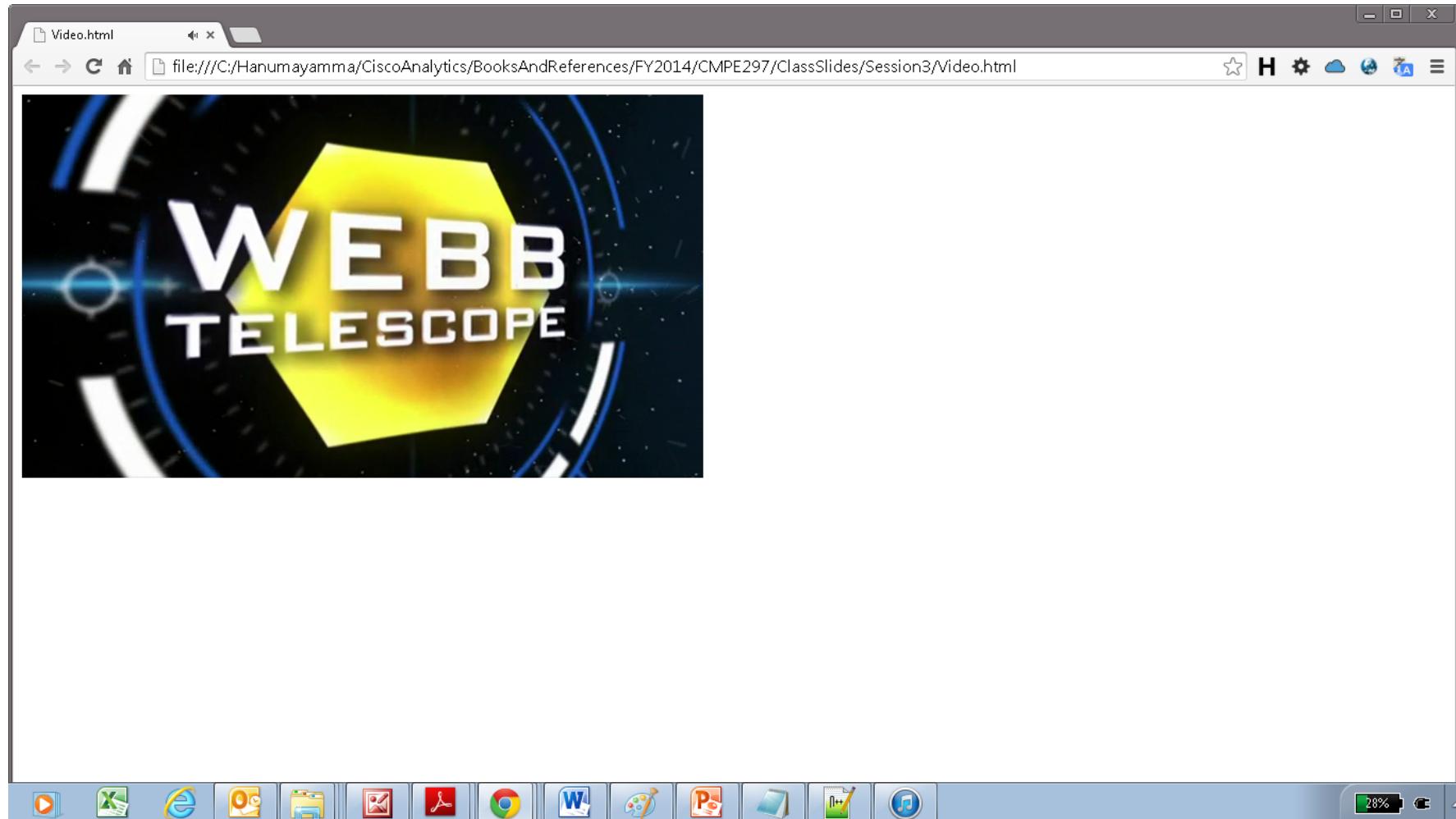
<video src="your\_video.ogg" /> The src attribute contains the address of the media resource (video or audio) to be shown in the page. In the code example above, we asked it to load the video in the Ogg Theora format.

Even if this code alone is enough to make the video usable, it is preferable to specify the dimensions of the video container using the width and height attributes: <video width="640" height="360" src="your\_video.mp4" />



# Embed Video

Embedded Content



# Embed Video

Embedded Content

```
<video width="640" height="360"src="GalaxyEvolution_ipod_lg.m4v"  
autoplay poster="galaxy.png"> Video is not supported in this browser! </  
video>
```



# Embed Video

If you don't set these values, the browser will use the dimensions of the original video asset. Other properties that are supported by the video tag are:

-  *preload*: Tells the browser to preload the video content while the page is loading. This way the user won't have to wait for the video to load when playing the video.
-  *autoplay*: Tells the browser to play the video automatically as soon as it's available. You need to be careful with this attribute because you aren't always sure that the user will want to see the video. This is especially true if the user is connected via a **mobile device**, and **bandwidth is more expensive**.
-  *loop*: Re-executes the video as soon as it ends.
-  *controls*: If specified, it tells the browser to display a built-in set of controls such as play, stop, pause, and volume.
-  *poster*: Specifies an image file that the user agent (browser) can show when no video data is available.



# Video Code Support

Embedded Content

	H.264	Ogg Theora	VP8 (WebM)
	native	with install	with installs
	native for now; with install from Microsoft	native	native
	native	with install	no
	with install from Microsoft	native	native
	no	native	native



[http://www.htmlgoodies.com/html5/client/how\\_to\\_embed\\_video\\_using\\_html5.html#fbid=nl\\_ZYe4kUYQ](http://www.htmlgoodies.com/html5/client/how_to_embed_video_using_html5.html#fbid=nl_ZYe4kUYQ)

Chandrasekarappanapati, Professor, MS Software Engineering,  
Computer Engineering, San Jose State University.

## Tabular data

Element	Description
<u>&lt;table&gt;</u>	Represents <i>data with more than one dimension</i> .
<u>&lt;caption&gt;</u>	Represents the <i>title of a table</i> .
<u>&lt;colgroup&gt;</u>	Represents a <i>set of one or more columns</i> of a table.
<u>&lt;col&gt;</u>	Represents a <i>column</i> of a table.
<u>&lt;tbody&gt;</u>	Represents the block of rows that describes the <i>concrete data</i> of a table.
<u>&lt;thead&gt;</u>	Represents the block of rows that describes the <i>column labels</i> of a table.
<u>&lt;tfoot&gt;</u>	Represents the block of rows that describes the <i>column summaries</i> of a table.
<u>&lt;tr&gt;</u>	Represents a <i>row of cells</i> in a table.
<u>&lt;td&gt;</u>	Represents a <i>data cell</i> in a table.
<u>&lt;th&gt;</u>	Represents a <i>header cell</i> in a table.



Source: [https://developer.mozilla.org/en-US/docs/Web/Guide/HTML/HTML\\_5/HTML\\_5\\_element\\_list](https://developer.mozilla.org/en-US/docs/Web/Guide/HTML/HTML_5/HTML_5_element_list)

# HTML 5 Element list

Forms

## Forms

Element	Description
<form>	Represents a <i>form</i> , consisting of controls, that can be submitted to a server for processing.
<fieldset>	Represents a <i>set of controls</i> .
<legend>	Represents the <i>caption</i> for a <fieldset>.
<label>	Represents the <i>caption</i> of a form control.
<input>	Represents a <i>typed data field</i> allowing the user to edit the data.
<button>	Represents a <i>button</i> .
<select>	Represents a control allowing <i>selection among a set of options</i> .
<datalist> ⓘ	Represents a <i>set of predefined options</i> for other controls.
<optgroup>	Represents a <i>set of options</i> , logically grouped.
<option>	Represents an <i>option</i> in a <select> element, or a suggestion of a <datalist> element.
<textarea>	Represents a <i>multiline text edit control</i> .
<keygen> ⓘ	Represents a <i>key-pair generator control</i> .
<output> ⓘ	Represents the <i>result of a calculation</i> .
<progress> ⓘ	Represents the <i>completion progress</i> of a task.
<meter> ⓘ	Represents a scalar <i>measurement</i> (or a fractional value), within a known range.



Source: [https://developer.mozilla.org/en-US/docs/Web/Guide/HTML/HTML\\_5/HTML\\_5\\_element\\_list](https://developer.mozilla.org/en-US/docs/Web/Guide/HTML/HTML_5/HTML_5_element_list)

# Suggest-like autocomplete

In this day and age, any user likes an autocomplete system that helps simplify their web experience.

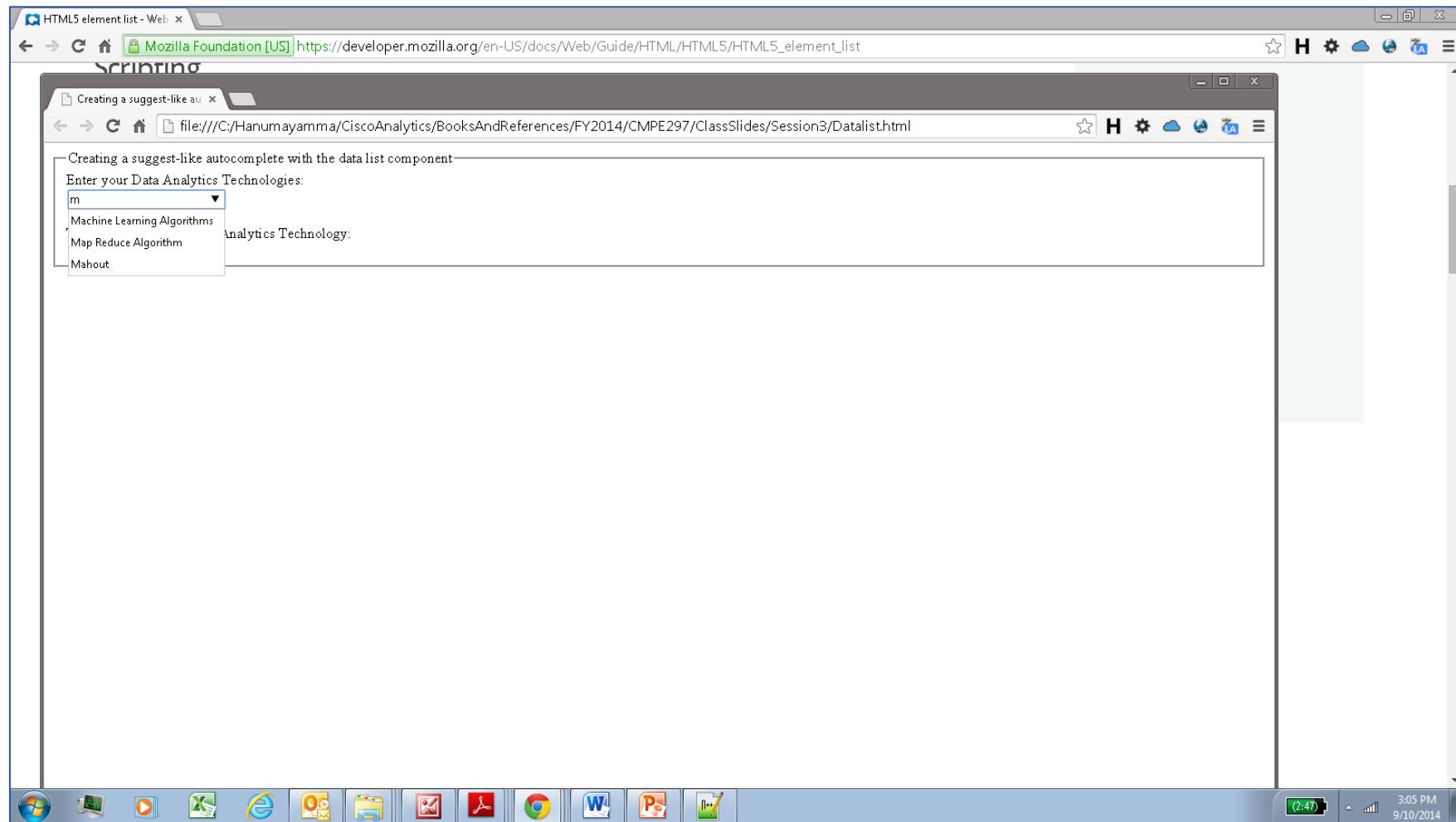
In the past, creating such a system was a not so simple a task. It could require quite a few hours of work. You can find various solutions and libraries for free or at some expense by searching the Web.

With HTML5 the new `<datalist>` markup was introduced. This tag denotes a set of option elements that represent predefined options for other controls. Therefore, it can be associated with a form control, such as a text input. When the control gets the focus, it will provide a list of predefined options to the user as data is filled in, as well as enabling the user to type something in on their own.

**Older browsers, or those that don't support datalists, will render a simple text field.**



# Suggest-like autocomplete



# Suggest-like autocomplete

```
<html>
<head>
<title>Creating a suggest-like autocomplete with the data list component</title>
</head>
<body>
<form id="myForm">
<fieldset>
<legend>Creating a suggest-like autocomplete with the data list component</legend>
<label> Enter your Data Analytics Technologies:<br/>
<input type="text" name="inputDataAnalytics" list="DataAnalyticsTechList"/>
<datalist id="DataAnalyticsTechList">
<option value="Google File System">
<option value="Hadoop Clusters">
<option value="Pentaho Visualizations">
<option value="In Memory Databases">
<option value="Real-Time Cloud">
<option value="No SQL Databases">
<option value="Machine Learning Algorithms">
<option value="Hive SQL">
<option value="Cache Technologies">
<option value="Pig">
<option value="Map Reduce Algorithm">
<option value="Google Big Table">
<option value="Cassandra">
<option value="HBase">
<option value="Mahout">
<option value="ZooKeeper">
<option value="R">
</datalist>
</label>
<p>
<label> This is your favorite Data Analytics Technology:</label>
<output name="myOutput" onforminput="this.value=DataAnalyticsTechList.value" />
</label>
</p>
</fieldset>
</form>
</body>
</html>
```



# Suggest-like autocomplete

To make your code compatible with older browsers and with those that don't support datalist, you can use the <select> tag.

By doing so, this tag will only be displayed in browsers that don't support the datalist elements:

```
<label> Enter your Data Analytics Technology:<br/>
<input type="text" name="inputDataAnalytics" list="DataAnalyticsTechList"/>
<datalist id="DataAnalyticsTechList">
<label> or select one from the list:
<select name="DataAnalyticsTechList">
<option value="Google File System"><option value="Hadoop
Clusters"><option value="Pentaho Visualizations"><option value="In
Memory Databases">
</select>
</label>
</datalist>
</label>
```



### Interactive elements

Element	Description
<details> ⓘ	Represents a <i>widget</i> from which the user can obtain additional information or controls.
<summary> ⓘ	Represents a <i>summary</i> , <i>caption</i> , or <i>legend</i> for a given <details>.
<menuitem> ⓘ	Represents a <i>command</i> that the user can invoke.
<menu> ⓘ	Represents a <i>list of commands</i> .

Source: [https://developer.mozilla.org/en-US/docs/Web/Guide/HTML/HTML\\_5/HTML\\_5\\_element\\_list](https://developer.mozilla.org/en-US/docs/Web/Guide/HTML/HTML_5/HTML_5_element_list)



# Using Summary

The image shows two side-by-side web browser windows, both titled "Example".

**Left Browser Window:** Displays a page titled "Things I like" by Adam Freeman. A section titled "Activities I like" contains the text "It hurts, but I keep doing it". Below this, a paragraph says "I like to swim, cycle and run". A link labeled "► Kinds of Triathlon" is shown, with a purple rectangular box highlighting the entire link area.

**Right Browser Window:** Displays the same "Things I like" page. The "Activities I like" section and its text are identical. The paragraph about swimming, cycling, and running is also present. The "Kinds of Triathlon" link is also present, but it is enclosed in a yellow rectangular box, indicating it is the target of a summary element.

# Assignment

The goal of the assignment is to create Shareable Content Objects (SCOs) using HTML5 technologies. As part of the exercise, you will be creating three types of question SCOs: A) Math SCO, b) English SCO, and C) Audio/Video SCO.

[Log-in Page](#):

**User Login**

Username:

Password:

[Create Account/Forgot?](#)



# Assignment

Page: Math Question

## Question 1

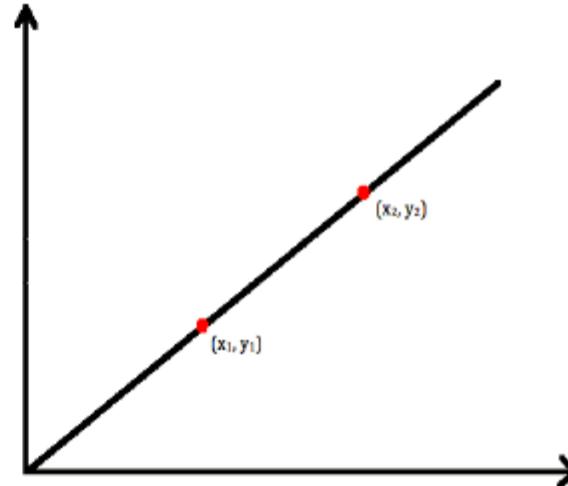
Given points  $(x_1, y_1)$  and  $(x_2, y_2)$  select the formula to find the equation of the given line.

$y = mx + b$

$(x - h)^2 + (y - k)^2 = r^2$

$y - y_1 = m(x - x_1)$

$$y - y_2 = \frac{y_2 - y_1}{x_2 - x_1} (x - x_2).$$



**Submit & Next Question**

**Cancel & Clear Selection**



# Assignment

Page: Math Question

## Question 1

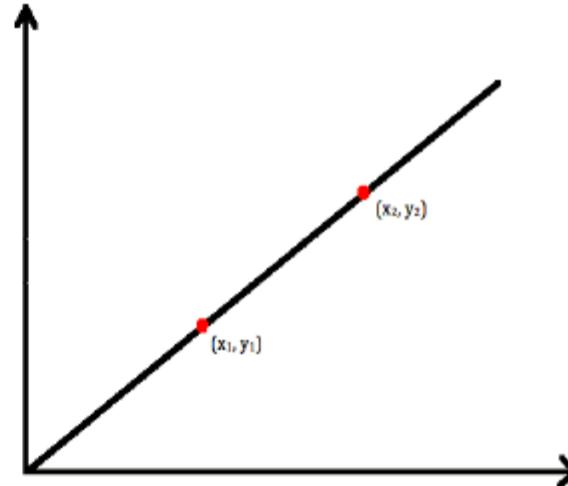
Given points  $(x_1, y_1)$  and  $(x_2, y_2)$  select the formula to find the equation of the given line.

$y = mx + b$

$(x - h)^2 + (y - k)^2 = r^2$

$y - y_1 = m(x - x_1)$

$$y - y_2 = \frac{y_2 - y_1}{x_2 - x_1} (x - x_2).$$



**Submit & Next Question**

**Cancel & Clear Selection**



# Assignment

Cosine Page:

## Question 2

Select the cosine theorem formula.

$\cos(\alpha \pm \beta) = \cos \alpha \cos \beta \mp \sin \alpha \sin \beta$

$\sin(\alpha \pm \beta) = \sin \alpha \cos \beta \pm \cos \alpha \sin \beta$

$\sin \alpha + \sin \beta = 2 \sin\left(\frac{\alpha + \beta}{2}\right) \cos\left(\frac{\alpha - \beta}{2}\right)$

$\sin \alpha - \sin \beta = 2 \cos\left(\frac{\alpha + \beta}{2}\right) \sin\left(\frac{\alpha - \beta}{2}\right)$

**Submit & Next Question**

**Cancel & Clear Selection**



# Assignment

Page: English SCO

## Question 3

As per the latest twitter news, complete the article snippet given by selecting appropriate choices for the blanks.

When the first mark(\_\_\_\_) is selected show the following options. Do likewise for other marks.

- Option 1 Mark 1: \$650
- Option 2 Mark 1: \$550
- Option 3 Mark 1: \$650
- Option 1 Mark 2: Twitter
- Option 1 Mark 2: Google
- Option 1 Mark 2: Facebook

"Twitter wants more cash. The company announced two \$\_\_\_\_\_ million debt offerings in a filing today, each with a potential \$100 increase provided that the sales are oversubscribed. Assuming full tip, including the \$100 million boosters, \_\_\_\_\_ will raise up to \$1.5 billion with the two offerings.

Source: <http://techcrunch.com/2014/09/10/twitter-to-raise-up-to-1-5b-in-debt-offering/>

**Submit & Next Question**

**Cancel & Clear Selection**



# Assignment

## Audio & Video SCO:

### Question 4

Watch the video and answer the following question.  
What is the source as mentioned in the video?

NASA.Gov

Data.Gov

Facebook

XYZ.net



The video player displays a vibrant, multi-colored nebula or galaxy against a dark background. A large red YouTube play button is centered in the middle of the video frame. The video player interface includes a title bar labeled "Universe", a progress bar at 0:00 / 2:36, and standard video control buttons like play, pause, and volume.

#### Expedition 40 Undocks Ending Mission

Source: <http://www.nasa.gov/multimedia/videogallery/index.html#.VBFB5S5dVOE>

**Submit & Next Question**

**Cancel & Clear Selection**



# Assignment

## Survey SCO

**Survey**

How did you like the center ?

Comments:

Select Text Area Location:

City:

Room Number#:



# Assignment

## Survey SCO

**Survey**

How did you like the center ?

Comments:

Select Text Area Location:

City:

Room Number#:



# Assignment

## Summary Page:

**Score Card**

▼ Quantitative Section

**Number of Questions Answered: 2**

**Number of Correct Answers: 2**

**Score: 100**

► Reading Section

► Audio/Video Section

**Thank You!!**

[Finish](#)



# Periodic Table of the Elements

html																			col	table
head	span																			
title	a																			
meta	rt	dfn	em	i	small	ins	s	br	p	blockquote	legend	optgroup	address	h3	nav	menu	th			
base	rp	abbr	time	b	strong	del	kbd	hr	ol	dl	label	option	datalist	h4	article	command	tbody			
link	noscript	q	var	sub	mark	bdi	wbr	figcaption	ul	dt	input	output	keygen	h5	footer	summary	thead			
style	script	cite	samp	sup	ruby	bdo	code	figure	li	dd	textarea	button	progress	h6	hgroup	details	tfoot			

Source: <http://ioshduck.com/periodic-table.html>

img	area	map	embed	object	param	source	iframe	canvas	track	audio	video
-----	------	-----	-------	--------	-------	--------	--------	--------	-------	-------	-------

■ Root element

■ Metadata and scripting

■ Embedding content

■ Text-level semantics

■ Grouping content

■ Forms

■ Document sections

■ Tabular data

■ Interactive elements

I {C}

HTML5

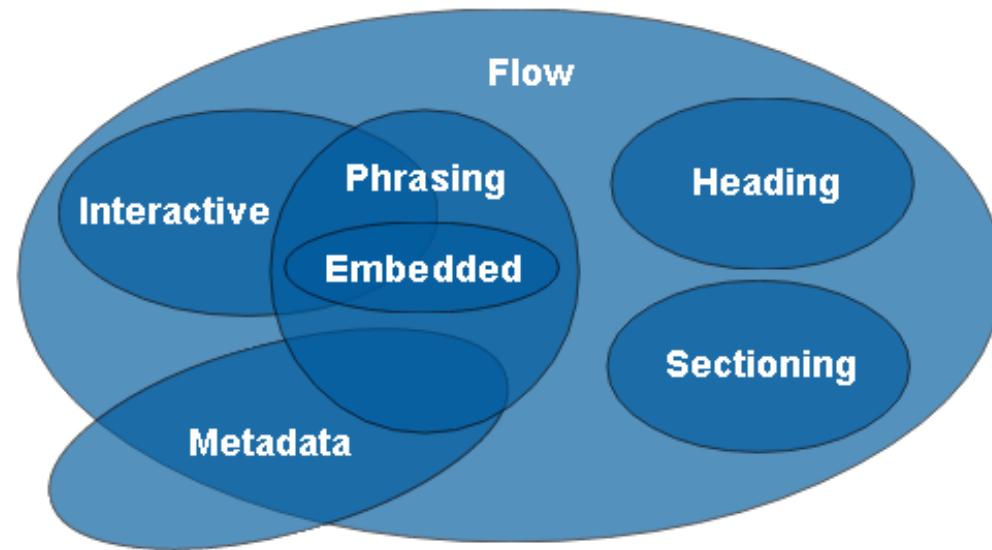
# HTML Content Models

## A Description of element's expected content.

Each element in HTML falls into zero or more **categories** that group elements with similar characteristics together. The following broad categories are used in this specification:

### Kinds of content

- Metadata content
- Flow content
- Sectioning content
- Heading content
- Phrasing content
- Embedded content
- Interactive content

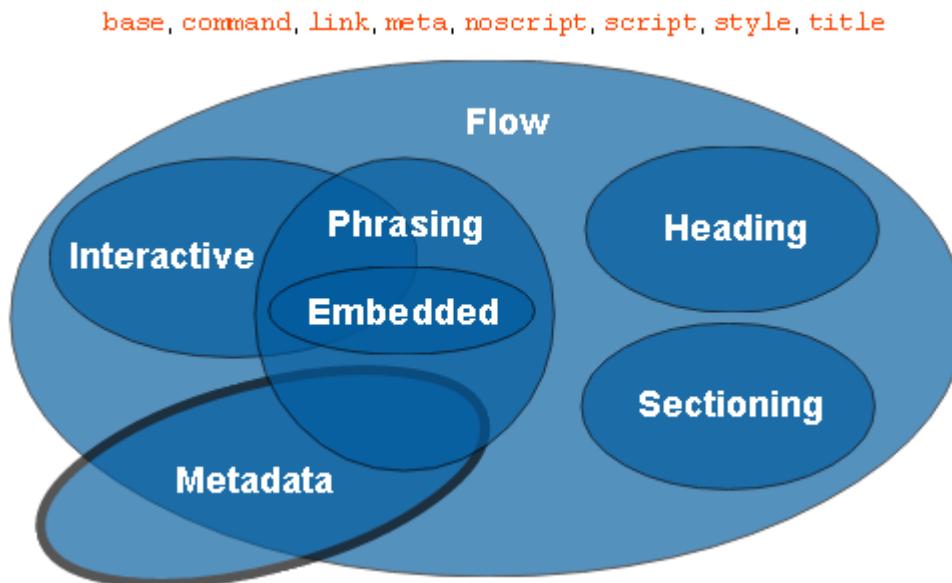


Source: <http://www.w3.org/TR/2011/WD-html5-20110525/content-models.html#flow-content>



# Metadata Content

**Metadata content** is content that sets up the presentation or behavior of the rest of the content, or that sets up the relationship of the document with other documents, or that conveys other "out of band" information. Elements from other namespaces whose semantics are primarily metadata-related (e.g. RDF) are also metadata content.



Source: <http://www.w3.org/TR/2011/WD-html5-20110525/content-models.html#flow-content>



# Metadata Content

```
<html xmlns="http://www.w3.org/1999/xhtml" xmlns:r="http://www.w3.org/1999/02/22-rdf-syntax-ns#">
<head>
<title>Hedral's Home Page</title>
<r:RDF> <Person xmlns="http://www.w3.org/2000/10/swap/pim/contact#" r:about="http://hedral.example.com/#"> <fullName>Cat Hedral</fullName>
<mailbox r:resource="mailto:hedral@damowmow.com"/> <personalTitle>Sir</personalTitle> </Person>
</r:RDF>
</head>
<body>
<h1>My home page</h1> <p>I like playing with string, I guess. Sister says squirrels are fun too so sometimes I follow her to play with them.</p>
</body>
</html>
```

Source: <http://www.w3.org/TR/2011/WD-html5-20110525/content-models.html#metadata-content-0>



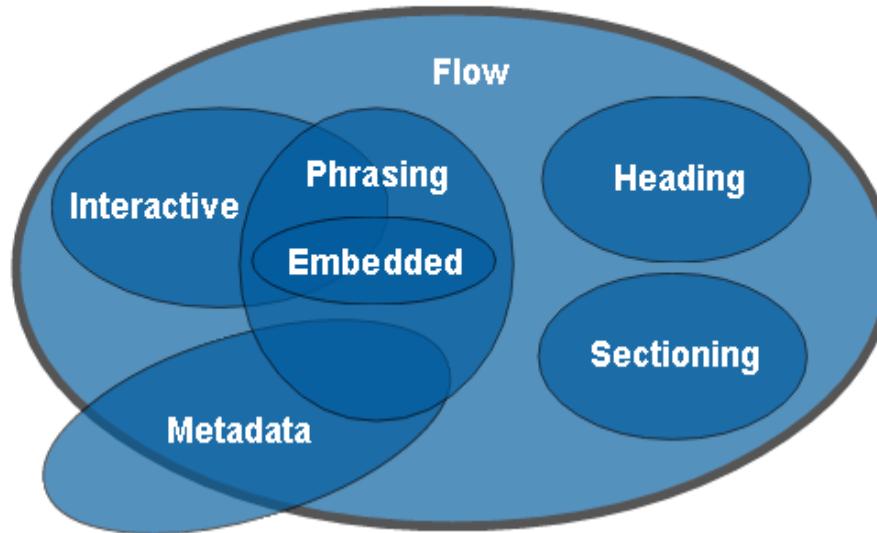
# Meta Data Content

Element	Description	New/Changed
Base	Sets the base for relative URLs	Unchanged
Link	Defines a relationship with an external resource, usually a stylesheet or a favicon	Changed
Meta	Provides information about the document	Changed
Noscript	Contains content that will be displayed when scripting is disabled or unavailable in the browser	Unchanged
Script	Defines a script block, either inline or in an external file	Changed
Style	Defines a CSS style	Changed
Title	Sets the title for the document	No



# Flow Content

Most elements that are used in the body of documents and applications are categorized as flow content.



## Flow content

a, abbr, address, area\*, article, aside, audio, b, bdi, bdo, blockquote, br, button, canvas, cite, code, command, datalist, del, details, dfn, div, dl, em, embed, fieldset, figure, footer, form, h1, h2, h3, h4, h5, h6, header, hgroup, hr, i, iframe, img, input, ins, kbd, keygen, label, link\*, map, mark, math, menu, meta\*, meter, nav, noscript, object, ol, output, p, pre, progress, q, ruby, s, samp, script, section, select, small, span, strong, style\*, sub, sup, svg, table, textarea, time, u, ul, var, video, wbr, Text\*

\* Under certain circumstances (see prose).

Source: <http://www.w3.org/TR/2011/WD-html5-20110525/content-models.html#flow-content>



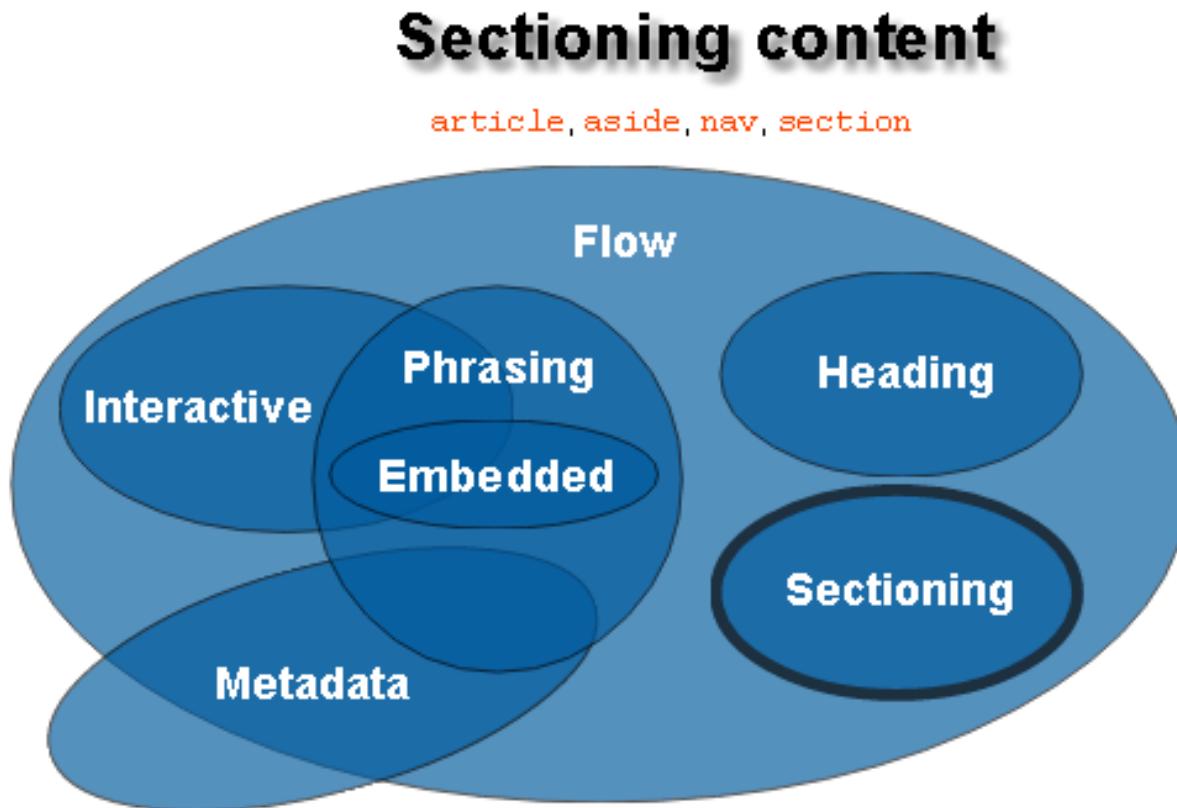
# Flow Content

Element	Description	New/Changed
Base	Sets the base for relative URLs	Unchanged
Link	Defines a relationship with an external resource, usually a stylesheet or a favicon	Changed
Meta	Provides information about the document	Changed
Noscript	Contains content that will be displayed when scripting is disabled or unavailable in the browser	Unchanged
Script	Defines a script block, either inline or in an external file	Changed
Style	Defines a CSS style	Changed
Title	Sets the title for the document	No



# Sectioning Content

**Sectioning content is content the defines scope of heading and footers.**



Source: <http://www.w3.org/TR/2011/WD-html5-20110525/content-models.html#flow-content>



# Sectioning Content

Element	Description	Type	New/ Changed
address	Denotes contact information for a document or article	Flow	New
article	Denotes an independent block of content	Flow	New
aside	Denotes content that is tangentially related to the surrounding content	Flow	New
details	Creates a section the user can expand to get additional details	Flow	New
Footer	Denotes a footer region	Flow	New
h1-h6	Denotes a heading	Flow	New
header	Denotes a heading region	Flow	New



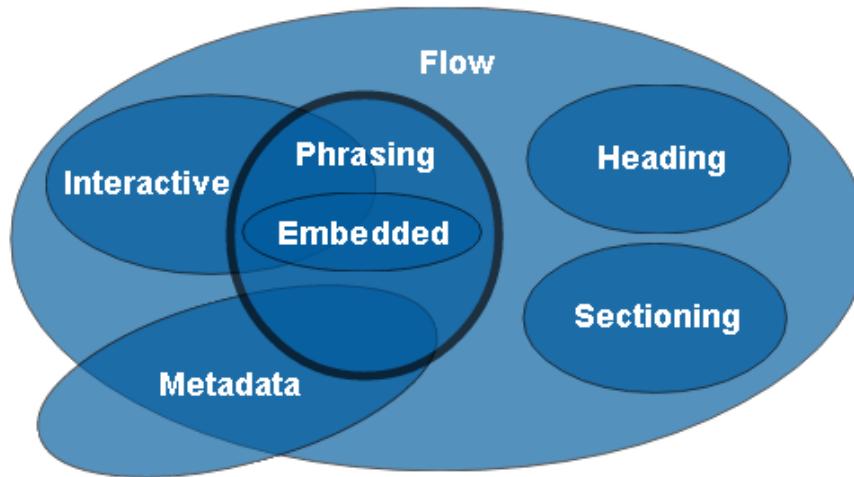
# Sectioning Content

Element	Description	Type	New/ Changed
hgroup	Hides all but the first of a set of headings from the document outline	Flow	New
nav	Denotes a significant concentration of navigation elements	Flow	New
section	Denotes a significant concept or topics	Flow	New
summary	Denotes a title or description for the content in an enclosing details element	Flow	New



# Phrasing and Embedding Content

**Phrasing content** is the text of the document, as well as elements that mark up that text at the intra-paragraph level. Runs of phrasing content form paragraphs. **Embedded content** is content that imports another resource into the document, or content from another vocabulary that is inserted into the document.



## Phrasing content

`a*, abbr, area*, audio, b, bdi, bdo, br, button, canvas, cite, code, command, datalist, del*, dfn, em, embed, i, iframe, img, input, ins*, kbd, keygen, label, link*, map*, mark, math, meta*, meter, noscript, object, output, progress, q, ruby, s, samp, script, select, small, span, strong, sub, sup, svg, textarea, time, u, var, video, wbr, Text*`

\* Under certain circumstances; see prose.

Source: <http://www.w3.org/TR/2011/WD-html5-20110525/content-models.html#flow-content>

# Phrasing and Embedding Content

Element	Description	Type	New/ Changed
area	Denotes an area for a client-side image map	Phrasing	Changed
audio	Denotes an audio resource	N/A	New
canvas	Provides a dynamic graphics canvas	Phrasing/ Flow	New
embed	Embeds content in an HTML document using a Plugin	Phrasing	New
iframe	Embeds one document in another by creating a browsing context	Phrasing	Changed
img	Embeds an image	Phrasing	Changed
map	Denotes the definition of a client-side image map	Phrasing/ Flow	Changed
meter	Embeds a representation of a numeric value displayed within the range of possible values	Phrasing	New



# Phrasing and Embedding Content

Element	Description	Type	New/ Changed
object	Embeds content in an HTML document, and can also be used to create browsing contexts and to create client-side image maps	Phrasing / Flow	Changed
param	Denotes a parameter that will be passed to a plugin through the object element	N/A	Unchanged
progress	Embeds a representation of progress toward a goal or completion of a task	Phrasing	New
embed	Embeds content in an HTML document using a Plugin	Phrasing	New
iframe	Embeds one document in another by creating a browsing context	Phrasing	Changed
img	Embeds an image	Phrasing	Changed
	Denotes the definition of a client-side image map	Phrasing/ Flow	Changed



# Video

<http://www.apple.com/html5/showcase/video/>  
<http://techcrunch.com/2010/06/03/apple-html5/>



**Try it out:** Use the control panel to the right to scale up or down or add a mask while the video is playing.

**About this demo:** The HTML5 video tag allows you to integrate video within your website's code. And Safari offers HTTP streaming, so playback quality dynamically adjusts to the available speed of wired or wireless networks — perfect for viewing on mobile devices such as iPad, iPhone, and iPod touch.

*Tron Legacy* © 2010 Disney Enterprises Inc. All rights reserved.

Scale

Mask  ON  OFF

Perspective  ON  OFF



## <h2>HTML5 Showcase</h2>

```
<div id="videoContainer" class="videoContainer">
  <div class="videoPlayer" id="videoPlayer">
    <video id="videoShowcase" width="848" height="352" poster="http://images.apple.com/html5/showcase/video/images/tron_legacy.jpg" autoplay="autoplay" autobuffer="autobuffer" loop="loop">
      <source src="http://movies.apple.com/media/us/html5/showcase/2011/demos/apple-html5-demo-tron-us_848x352.m4v" type='video/mp4; codecs="avc1.42E01E, mp4a.40.2"'>
      <source src="/105/media/us/html5/showcase/2011/demos/apple-html5-demo-tron-us_848x352.webm" type='video/webm; codecs="vp8, vorbis"'>
      <source src="http://movies.apple.com/media/us/html5/showcase/2010/demos/apple-html5-demo-tron_legacy-us-20100601_r848-2cie.mov">
    </video>
  </div>
</div>
</div>
</div>
<div id="videoControls">
  <h3 id="videoSizeSliderTitle">Scale</h3>
  <div id="videoSizeSlider" class="horizontalSlider">
    <div class="sliderTrack"></div>
    <div class="sliderThumb"></div>
    <div class="sliderTicks"></div>
  </div>
  <fieldset id="mask" class="toggle selfclear">
    <legend>Mask</legend>
    <div class="toggle-control">
      <label><input type="checkbox" id="videoMask" name="videoMask" value="videoMask" /></label>
    </div>
  </fieldset>
</div>
```



# Video

<http://www.apple.com/html5/showcase/video/>



**Try it out:** Use the control panel to the right to scale up or down or add a mask while the video is playing.

**About this demo:** The HTML5 video tag allows you to integrate video within your website's code. And Safari offers HTTP streaming, so playback quality dynamically adjusts to the available speed of wired or wireless networks — perfect for viewing on mobile devices such as iPad, iPhone, and iPod touch.

*Tron Legacy* © 2010 Disney Enterprises Inc. All rights reserved.

Visit the Safari Dev Center to learn more and download sample code ▶

360°

<http://www.apple.com/html5/showcase/threesixty/>



**Try it out:** Rotate iPod touch a full 360 degrees with your finger or by clicking and dragging.

**About this demo:** JavaScript lets you incorporate 360-degree elements on your web page.

## <h2>HTML5 Showcase</h2>

```
<div id="videoContainer" class="videoContainer">
  <div class="videoPlayer" id="videoPlayer">
    <video id="videoShowcase" width="848" height="352" poster="http://images.apple.com/html5/
showcase/video/images/tron_legacy.jpg" autoplay="autoplay" autobuffer="autobuffer" loop="loop">
      <source src="http://movies.apple.com/media/us/html5/showcase/2011/demos/apple-html5-demo-tron-
us_848x352.m4v" type='video/mp4; codecs="avc1.42E01E, mp4a.40.2"'>
      <source src="/105/media/us/html5/showcase/2011/demos/apple-html5-demo-tron-us_848x352.webm"
type='video/webm; codecs="vp8, vorbis"'>
      <source src="http://movies.apple.com/media/us/html5/showcase/2010/demos/apple-html5-demo-
tron_legacy-us-20100601_r848-2cie.mov">
    </video>
  </div>
  </div>
  </div>
  <div id="videoControls">
    <h3 id="videoSizeSliderTitle">Scale</h3>
    <div id="videoSizeSlider" class="horizontalSlider">
      <div class="sliderTrack"></div>
      <div class="sliderThumb"></div>
      <div class="sliderTicks"></div>
    </div>
    <fieldset id="mask" class="toggle selfclear">
      <legend>Mask</legend>
      <div class="toggle-control">
        <label><input type="checkbox" id="videoMask" name="videoMask" value="videoMask" /></label>
      </div>
    </fieldset>
  </div>
</div>
```



# Transitions

<http://www.apple.com/html5/showcase/transitions/>

## 2D Transitions:

- Dissolve
- Toss
- Slide In
- Iris
- Fade Through

## 3D Transitions:

- Cube
- Rotate In
- Horizontal Flip
- Multi-Flip
- Unfold

**Try it out:** Click any of the transitions above to see them in action.

**About this demo:** Add Keynote-style transitions to objects on your web pages by using CSS 2D and 3D transforms like the ones displayed here.



Watch it again

## <h2>HTML5 Showcase</h2>

```
<div id="videoContainer" class="videoContainer">
  <div class="videoPlayer" id="videoPlayer">
    <video id="videoShowcase" width="848" height="352" poster="http://images.apple.com/html5/showcase/video/images/tron_legacy.jpg" autoplay="autoplay" autobuffer="autobuffer" loop="loop">
      <source src="http://movies.apple.com/media/us/html5/showcase/2011/demos/apple-html5-demo-tron-us_848x352.m4v" type='video/mp4; codecs="avc1.42E01E, mp4a.40.2"'>
      <source src="/105/media/us/html5/showcase/2011/demos/apple-html5-demo-tron-us_848x352.webm" type='video/webm; codecs="vp8, vorbis"'>
      <source src="http://movies.apple.com/media/us/html5/showcase/2010/demos/apple-html5-demo-tron_legacy-us-20100601_r848-2cie.mov">
    </video>
  </div>
  </div>
  </div>
  </div>
  <div id="videoControls">
    <h3 id="videoSizeSliderTitle">Scale</h3>
    <div id="videoSizeSlider" class="horizontalSlider">
      <div class="sliderTrack"></div>
      <div class="sliderThumb"></div>
      <div class="sliderTicks"></div>
    </div>
    <fieldset id="mask" class="toggle selfclear">
      <legend>Mask</legend>
      <div class="toggle-control">
        <label><input type="checkbox" id="videoMask" name="videoMask" value="videoMask" /></label>
      </div>
    </fieldset>
  </div>
```



# Body Element

The body element represents the main content of the document.

- The <body> ... </body> contains the markup with the **visible content**.

## Body Attributes

onafterprint	User printed current document
onbeforeprint	User requested printing of current document.
onbeforeunload	Document is about to be unloaded.
Onblur	Document lost focus
Onerror	Document failed to load properly.
Onfocus	Document received focus.
Onhashchange	Fragment identifier part of the document's current address changed.
Onload	Document finished loading.
Onmessage	Document received a message.
Onoffline	Network connections failed.
Ononline	Network connections returned.
Onresize	Document view was resized
Onunload	Document is going away.



# References

- HTTP Headers -  
<https://chrome.google.com/webstore/detail/http-headers/hplfkkmefamockhligfdcfgfnbcdddbg?hl=en>
- Web Developer - <http://chrисpederick.com/work/web-developer/installerd/chrome/04/>
- HTML Tutorials: [http://www.w3.org/2002/03/tutorials.html#webdesign\\_htmlcss](http://www.w3.org/2002/03/tutorials.html#webdesign_htmlcss)
- Difference from HTML4: <http://www.w3.org/TR/html5-diff/#doctype>
- HTML Elements - <http://www.w3.org/TR/html5/syntax.html#elements-0>
- HTML5 A vocabulary and associated APIs for HTML and XHTML  
- <http://www.w3.org/TR/2011/WD-html5-20110525/spec.html#contents>
- \*\*\* HTML 5 Content models -  
<http://www.w3.org/TR/2011/WD-html5-20110525/content-models.html#flow-content>
- Safari Handling Events -  
<https://developer.apple.com/library/safari/documentation/AppleApplications/Reference/SafariWebContent/HandlingEvents/HandlingEvents.html>
- Safari HTML Basics -  
[https://developer.apple.com/library/safari/documentation/AppleApplications/Reference/SafariWebContent/IntroductiontoHTML/IntroductiontoHTML.html##apple\\_ref/doc/uid/TP40002080-SW1](https://developer.apple.com/library/safari/documentation/AppleApplications/Reference/SafariWebContent/IntroductiontoHTML/IntroductiontoHTML.html##apple_ref/doc/uid/TP40002080-SW1)
- Safari HTML References -  
[https://developer.apple.com/library/safari/documentation/AppleApplications/Reference/SafariHTMLRef/Introduction.html##apple\\_ref/doc/uid/TP40002049](https://developer.apple.com/library/safari/documentation/AppleApplications/Reference/SafariHTMLRef/Introduction.html##apple_ref/doc/uid/TP40002049)
- Creating Compatible Web Content -  
[https://developer.apple.com/library/safari/documentation/AppleApplications/Reference/SafariWebContent/CreatingContentforSafarioniPhone/CreatingContentforSafarioniPhone.html##apple\\_ref/doc/uid/TP40006482-SW1](https://developer.apple.com/library/safari/documentation/AppleApplications/Reference/SafariWebContent/CreatingContentforSafarioniPhone/CreatingContentforSafarioniPhone.html##apple_ref/doc/uid/TP40006482-SW1)
- Periodic Table of Elements - <http://joshduck.com/periodic-table.html>
- HTML 5 Elements list -  
[https://developer.mozilla.org/en-US/docs/Web/Guide/HTML/HTML5/HTML5\\_element\\_list](https://developer.mozilla.org/en-US/docs/Web/Guide/HTML/HTML5/HTML5_element_list)



# References

- 28 HTML5 Features, Tips, and Techniques you must know -  
<http://net.tutsplus.com/tutorials/html-css-techniques/25-html5-features-tips-and-techniques-you-must-know/>
- Search Engine Optimization -  
[https://static.googleusercontent.com/external\\_content/untrusted\\_dlcp/www.google.com/en/us/webmasters/docs/search-engine-optimization-starter-guide.pdf](https://static.googleusercontent.com/external_content/untrusted_dlcp/www.google.com/en/us/webmasters/docs/search-engine-optimization-starter-guide.pdf)

