

Let's get to know each other



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WHAT WAD IS ALL ABOUT



*•••••••••••••••••





ATHENS INFORMATION TECHNOLOGY

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What you will get





The Overview Module



What we will see

- □ HTML 5 structure and new features
- Basic CSS guidelines
- Twitter Bootstrap
 - front-end framework for developing responsive, mobile first projects on the web



Double Vanilla CodeCake



WEB APPLICATIONS EVERYWHERE



How the web works



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How websites are created

All websites use HTML and CSS, but content management systems, blogging software, and e-commerce platforms often add a few more technologies into the mix.



Websites: What you see

- your browser will be receiving HTML and CSS from the web server
- The browser interprets the HTML and CSS code to create the page that you see

Some sites send JavaScript or Flash to the browser

Most web pages include extra content i.e. images, audio, video, animations



Websites: How it is created

- Small websites are often written just using HTML and CSS.
- Larger websites
 - content management system (CMS)
 - blogging tools
 - e-commerce software

make use of more **complex technologies** on the web server, but these technologies are **used to produce HTML and CSS** that is then sent to the browser

- may use a database to store data
- programming languages such as PHP, ASP.Net, Java, or Ruby on the web server
 - you do not need to know these technologies to improve <u>what</u> the user sees

Different Solutions for Different Needs



Content Management Systems

□ software system that provides:

- website authoring,
- Collaboration
- administration tools

designed to allow users with **little knowledge** of programming to create and manage website content.

They use

- content repository or a database to store page content
- metadata, and other information assets.



Popular CMSes



Image from: http://websitesetup.org/cms-comparison-wordpress-vs-joomla-drupal/



MVCs

set of PHP classes and functions that developers adhere to when developing a site

• Model: The model contains the server business logic code.

- + reading and writing to a database in addition to some pre- or post-processing.
- ÷ For example: 'A user enters a comment, but before we insert it into the database, we need to do a spam check with akismet.com; if it passes we can do the insert.'
- View: present the output to the user in a particular format, most often HTML markup, although it can be the JSON or XML format.
 - ÷ For example: 'We need to display all the comments for a forum topic, the model fetches all the comments and are then read and formatted by the view.'
- Controller: the manager. It first intercepts the URL, then calls the correct models and views before presenting it to the browser, mobile device or an API caller.
 - For example: 'In displaying all the comments for a topic, the controller makes the actual call to the model and then passes the model data to the view, which then generates the HTML output. This generated view is then shown to the calling browser by the controller.'



Popular php MVCs











CMS and MVC

CMS are usually "plug and play" websites.

- a base premade system that can be extended with modules or plugins
- No need to know any code (???) to use a CMS.
- MVC (model-view-controller) is a software architecture for developping applications.



CMSes or MVCs?

The basics:

- CMS gives you nice basic functionality; MVC gives you nice development tools.
- CMS is good for having many websites with typical functionality; MVC is good for a site with unique functionality.
- With CMS, there's no need to reinvent commonly used stuff such as breadcrumbs, easy media files, menu management, etc. But with MVC you can easily add that stuff using a CMS based on Symfony.



Customising

□ Hard vs. Easy!

- CMS restricts what you can do; there are no restrictions with MVC.
- Slow customizing for unique requirements vs. quick customizing.
- In CMS, changing the code can be hard and risky because you might lose compatibility with new versions of the CMS or other plugins. In MVC the core doesn't depend on the third-party solutions.



Checking and fixing code

□ The hard way or the easy way:

 With CMS, if a performance problem is in the core, you can't fix it. With MVC, you can fix all performance issues.



What to use, when to use it

□ HTML5 based sites

- Small sites
- No interactivity needed with a server side
- Static Data
- - When content is the key driver
 - + Taxonomies, categorization, etc
- - When services are the key driver



Criteria for selection

- Need for scalability
- Static or dynamic content
- □ Focus of the project (content, services)
- Budget
- Time constraints

Your expertise, knowledge and preferences





Some background



HTML















Update Needed







New Features

- ■Some of the most interesting new features in HTML5 :
 - New content specific elements, like article, footer, header, nav, section
 - New form controls, like calendar, date, time, email, url, search
 - The canvas element for drawing
 - The video and audio elements for media playback
 - Better support for local offline storage


Not just one thing













KEEP CALM HTML5 IS NOT READY YET..





MAINTAINED BY MASATAKA YAKURA | ABOUT THIS SITE

(CREATED BY PAUL IRISH & DIVYA MANIAN)

HTML



STRUCTURE 101

How Pages Use Structure



Different documents different structures

Insurance & Authorization

ATHLETICS/HEALTH CENTER INFORMATION

No

No

No

New/Returning Student Spring/Fall Year 20 (CIRCLE ONE)

CIRCLE ONE)

. Every student must complete this form as a new student and with any subsequent changes to the information below. This form authorizes treatment and provides important information to hospitals, clinics and attending physicians. . For those participating in intercollegiate athletics, a copy of this form and a copy of the front and back of the insurance card is also required by the athletic department.

City	State Zip
Home Street Address	Cellular Phone ()
Date of Birth	Sport(s) if applicable
Name	Student ID J#

Fath O 5

ratier/ouardian/Jen			Wother/ Ouar dian		
Same as Mother/Guardian Information	Same as Father/Guardian information				
Father's Name			Mother's Name		
Telephone ()			Telephone ()		
Address			Address		
Social Security Number			Social Security Number		
Medical Insurance			Medical Insurance		
Company or Plan			Company or Plan		
Address			Address		
Policy Number			Policy Number		
Telephone ()			Telephone ()		
Is this Plan an HMO or PPO?	Yes	No	Is this Plan an HMO or PPO?	Yes	
Is pre-authorization required to obtain treatment?	Yes	No	Is pre-authorization required to obtain treatment?	Yes	
Is a second opinion required before surgery?	Yes	No	Is a second opinion required before surgery?	Yes	

Authorization

I hereby grant permission to any physician, hospital or clinic to which I am referred by the Concordia University Health Center and/or Athletic Training Staff to treat any health problems or injuries deemed reasonably necessary for my well being. I also hereby authorize Concordia University Health Center and/or Athletic Training Staff to treat any health problems or injuries for which I seek treatment and to release medical information necessary to process insurance claims in order to receive benefits.

(For those participating in intercollegiate athletics) Your signature below authorizes the Concordia University Health Center and Athletic Training Staff to discuss pertinent information related to your health or injuries. You have the right to revoke any part of this at any time by sending written notification to the Director of Health Services or the Athletic Trainer

(For all students)

* The insurance policyholder needs to sign for release of insurance information.

* The parent or guardian needs to sign for authorization for treatment and for release of information if student is less than 19 years of age.

DATE

Required: Enclose a copy of the front and back of your insurance card.

PRINTED NAME OF STUDENT

SIGNATURE OF STUDENT

SIGNATURE OF INSURANCE POLICY HOLDER/PARENT/GUARDIAN

A copy of this document shall be considered as valid as the original.

Please enclose this form in the envelope marked confidential at your earliest convenience.

Concordia University Health Center, 800 N. Columbia Avenue, Seward, NE 68434.





Different medium different layout



Image taken from the book: HTML and CSS: Design and Build Websites , Jon Ducket, 2011



HTML Describes the Structure of Pages

<nav></nav>		
<aside></aside>	<div class="content"></div>	
<figure></figure>	<article></article>	
	<section></section>	
<figcaption></figcaption>	<hgroup></hgroup>	
<details></details>	etc	
<summary></summary>		
	<section></section>	
etc	<dialog></dialog>	

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HTML5 ELEMENT LIST



Using New Structural Elements

TABLE 1.1 Class Names			TABLE 1.2 ID Names		
POPULARITY	VALUE	FREQUENCY	POPULARITY	VALUE	FREQUENCY
1	footer	179,528	1	footer	288,061
2	menu	146,673	2	content	228,661
3	style1	138,308	3	header	223,726
4	msonormal	123,374	4	logo	121,352
5	text	122,911	5	container	119,877
6	content	113,951	6	main	106,327
7	title	91,957	7	table1	101,677
8	style2	89,851	8	menu	96,161
9	header	89,274	9	layer1	93,920
10	copyright	86,979	10	autonumber1	77,350
11	button	81,503	11	search	74,887
12	main	69,620	12	nav	72,057
13	style3	69,349	13	wrapper	66,730
14	small	68,995	14	top	66,615
15	nav	68,634	15	table2	57,934
16	clear	68,571	16	layer2	56,823
17	search	59,802	17	sidebar	52,416
18	style4	56,032	18	image1	48,922
19	logo	48,831	19	banner	44,592
20	body	48,052	20	navigation	43,664



HTML5 element list

- Document metadata
- Grouping Content
- Text-level semantics
- Embedded content
- Tabular data
- Interactive elements



First, the DOCTYPE

- HTML 4.01 Strict
 - This DTD contains all HTML elements and attributes, but does NOT INCLUDE presentational or deprecated elements. Framesets are not allowed.
 - <!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01//EN" "http://www.w3.org/TR/html4/strict.dtd">
- HTML 4.01 Transitional
 - This DTD contains all HTML elements and attributes, INCLUDING presentational and deprecated elements (like font). Framesets are not allowed.
 - <!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">
- HTML 4.01 Frameset
 - This DTD is equal to HTML 4.01 Transitional, but allows the use of frameset content.
 - <!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Frameset//EN" "http://www.w3.org/TR/html4/frameset.dtd">

HTML 5

- <! doctype html >
- That's it. No URLs that even the most prolific web authors need to cut and paste.



Document metadata

Element	Description
<head></head>	Represents a collection of metadata about the document, including links to, or definitions of, scripts and style sheets.
<title></title>	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.
<base/>	Defines the base URL for relative URLs in the page.
<link/>	Used to link JavaScript and external CSS with the current HTML document.
<meta/>	Defines metadata that can't be defined using another HTML element.
<style></style>	



Inside the <head>

Character encoding

- <meta charset=utf-8>
 - $\div OR$

<META CHARSET=UTF-8> <META CHARSET=UTF-8 /> <META CHARSET="UTF-8"> <META CHARSET="UTF-8" /> <meta charset=utf-8> <meta charset=utf-8 /> <meta charset="utf-8"> <meta charset="utf-8"> <meta charset="utf-8">



So the structure



```
parenthesis
```

```
<!DOCTYPE html>
<meta charset=utf-8>
<title>Getting Started with HTML5</title>
I am bending all the rules of past HTML to see if it works!
```



I am bending all the rules of past HTML to see if it works!

```
<html>
</dead>
</meta charset="utf-8">
</meta charset="utf-8"</meta ch
```



Does validation matter anymore?

- Validation was always a tool—not a goal
- □ The goal is semantic markup: ensuring that the elements you choose define the meaning of your content as closely as possible
- It's possible to have a perfectly valid page made of nothing other than display tables, divs and spans, which is no semantic use to anyone
- It's a great way of ensuring that your code really does what you want. After all, browsers may make a consistent DOM from bad markup but it might not be the DOM you want.
- Also, HTML5 parsers don't exist yet in production browsers, so ensuring valid pages is absolutely what you should aim for to ensure predictable CSS and JavaScript behaviors.
 - Example validator: <u>http://html5.validator.nu</u>



Sections

Element	Description
<body></body>	Represents the content of an HTML document.
<section></section>	Defines a section in a document.
<nav></nav>	Defines a section that contains only navigation links.
<article></article>	Defines self-contained content that could exist independently of the rest of the content.
<aside></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></h6></h5></h4></h3></h2></h1>	Heading elements implement six levels of document headings;
<header></header>	Defines the header of a page or section.
<footer></footer>	Defines the footer for a page or section.
<address></address>	Defines a section containing contact information.
<main></main>	Defines the main or important content in the document. There is only one <main> element in the document.</main>



<header>

The header element can be used multiple times on a page and can include HTML headings (<h1> through <h6>), navigation, images and logos and more.



<header>



<header>

```
<a href="/"><img src=logo.png alt="home"></a>
<h1>My interesting blog</h1>
</header>
```

<header> <hgroup> <h1>My interesting blog</h1> <h2>Tedium, dullness and monotony</h2> </hgroup> </header>



<nav>

- The <nav> element is designed to mark up navigation.
- □You're not restricted to one <nav> per page.
 - i.e. site-wide <nav> in a header,
 - a <nav> which is a table of contents for the current article,
 - a <nav> below that links to other related articles on your site

The contents of a <nav> element will probably be a list of links, marked up as an unordered list or, in the case of breadcrumb trails, an ordered list.



<nav> example

<nav>

```
<a href="/">Home</a><a href="/about">About</a></nav>
```

```
<nav>
<h2>Main navigation</h2>
<a href="/about">About me</a>
<a href="/news">News</a>
</nav>
```



<footer>

- There can be more than one footer on a page
- A footer typically contains information about its section such as
 - who wrote it,
 - links to related documents,
 - copyright data



<article>

- The article element describes standalone content that could potentially be used or distributed elsewhere
 - news article,
 - forum post
 - blog entry
- □You can nest article elements.
 - For example, reader comments about a magazine nested as an article within the magazine article.



<section>

- The section element describes a section of a document, usually with a heading for each section
- These elements can be nested.
- The section element may also be nested in an article.



<article> <section> or <div>?

🛛 div

- When you simply want to contain information for styling.
- For not semantically related elements.

section

- represents a generic section of a document or application
- a thematic grouping of content, typically with a heading

🗆 article

 A specific type of section element in that it represents a self-contained composition in a document, page, application, or site and that is, in principle, independently distributable or reusable, e.g. in syndication.

Nesting

- Articles in sections (like a newspaper)
- Sections in articles (like a word document)



<aside>

The aside element describes content that's related to the surrounding content (such as an article) but is somewhat separate from the flow of the text.

For example, an aside in a news story might include some background history.

```
3 E
    <html>
                                                                     div id="header"
4 -
        <head>
            <title>I am still in HTML4</title>
 5
        </head>
 6
                                                                        div class="post"
7 E
        <body>
                                                              div id=
            <div id="header">
8 -
                                                               "side-
                                                               bar"
9
                <h1>This is my HTML4 structure</h1>
            </div>
10
                                                                        div class="post"
            <div id="sidebar">
11 🕀
                <h2>Menu</h2>
12
                                                                     div id="footer"
13 🕀
                14
                    <a href="index.html">Home</a>
15
                    <a href="pastProjects.html">Past Projects</a>
16
                </div>
17
            <div class="post">
Â
19
                <h2>My first website</h2>
20
                This was my first website developed with HTML4
21
            </div>
            <div class="post">
8 E
23
                <h2>My second website</h2>
24
                This is my second website but the first one developed with HTML5
            </div>
25
26 🕀
            <div id="footer">
                <small> This is copyrighted by Eri.</small>
27
28
            </div>
29
        </body>
30
    </html>
```

```
3 - <html>
                                                                     header
 4 🖃
        <head>
            <title>I am still in HTML4</title>
 5
                                                                         article
 6
        </head>
 7 E
        <body>
 8 E
            <header>
                                                             nav
 9
                <h1>This is my HTML5 structure</h1>
                                                                         article
            </header>
10
11 🕀
            < nav >
                <h2>Menu</h2>
12
                                                                     footer
13 E
                14
                    <a href="index.html">Home</a>
15
                    <a href="pastProjects.html">Past Projects</a>
                16
            </nav>
17
18 
            <article>
19
                <h2>My first website</h2>
20
                This was my first website developed with HTML4
            </article>
21
            <article>
22 E
23
                <h2>My second website</h2>
24
                This is my second website but the first one developed with HTML5
25
            </article>
26 E
            <footer>
27
                <small> This is copyrighted by Eri.</small>
            </footer>
28
29
        </body>
20
    </1 + m 1 >
```



Grouping Content

Element	Description
	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></pre>	Indicates that its content is preformatted and that this format must be preserved
<blockquote></blockquote>	Represents a content that is quoted from another source
<0 >	Defines an ordered list of items
<u ></u >	Defines an unordered list of items
< i>	Defines a item of an enumeration list
<d ></d >	Defines a definition list, that is, a list of terms and their associated definitions
<figure></figure>	Represents a figure illustrated as part of the document
<figcaption></figcaption>	Represents the legend of a figure
<div></div>	Represents a generic container with no special meaning



<figure> and <figcaption>

<figure>

</figure>

<figcaption>

Fig1. - I love minions and bananas.
</figcaption>



Fig1. - I love minions and bananas.



Text-level semantics

Element	Description
<a>	Represents a hyperlink , linking to another resource
	Represents emphasized text, like a stress accent
	Represents especially important text
<small></small>	Represents a side comment , that is, text like a disclaimer or a copyright, which is not essential to the comprehension of the document
<\$>	Represents content that is no longer accurate or relevant
<cite></cite>	Represents the title of a work
<q></q>	Represents an inline quotation
<time></time>	Represents a date and time value





Element	Description
_,	Represent a subscript , or a superscript
<j></j>	Fore italics text
	For bold text
<u></u>	For underlined text
<mark></mark>	Represents text highlighted for reference purposes, that is for its relevance in another context

Article 3

At distant inhabit amongst by. Appetite welcomed interest the goodness boy not. Estimable education for disposing pronounce her.



Embedded content

Element	Description
	Represents an image
<iframe></iframe>	Represents a nested browsing context , that is an embedded HTML document
<embed/>	Represents a integration point for an external, often non-HTML, application or interactive content
<object></object>	Represents an external resource , which is treated as an image, an HTML sub-document, or an external resource to be processed by a plug-in
<param/>	Defines parameters for use by plug-ins invoked by <object> elements</object>
<video></video>	Represents a video , and its associated audio files and captions, with the necessary interface to play it
<audio></audio>	Represents a sound , or an audio stream



Embedded Content (cont..)

<source/>	Allows authors to specify alternative media resources for media elements like <video> or <audio></audio></video>	
<track/>	Allows authors to specify timed text track for media elements like <video> or <audio></audio></video>	
<canvas></canvas>	Represents a bitmap area that scripts can be used to render graphics, like graphs, game graphics, or any visual images on the fly	
<map></map>	In conjunction with <area/> , defines an image map	
<area/>	In conjunction with <map>, defines an image map</map>	
<svg></svg>	Defines an embedded vectorial image	
$$	Defines a mathematical formula	



<audio>

Browser	мрз	Wav	Ogg
Internet Explorer	YES	NO	NO
Chrome	YES	YES	YES
Firefox	NO Update: Firefox 21 running on Windows 7, Windows 8, Windows Vista, and Android now supports MP3	YES	YES
Safari	YES	YES	NO
Opera	NO	YES	YES

Attribute		Value	Description
autoplay	New	autoplay	Specifies that the audio will start playing as soon as it is ready
<u>controls</u>	New	controls	Specifies that audio controls should be displayed (such as a play/pause button etc).
loop	New	Іоор	Specifies that the audio will start over again, every time it is finished
muted	New	muted	Specifies that the audio output should be muted
preload	New	auto metadata none	Specifies if and how the author thinks the audio should be loaded when the page loads
src	New	URL	Specifies the URL of the audio file

<audio controls loop>

Images from W3Schools

<source src="filename.ogg" type="audio/ogg">
</audio>



<video>

Browser	MP4	WebM	Ogg
Internet Explorer	YES	NO	NO
Chrome	YES	YES	YES
Firefox	NO Update: Firefox 21 running on Windows 7, Windows 8, Windows Vista, and Android now supports MP4	YES	YES
Safari	YES	NO	NO
Opera	NO	YES	YES

Attribute		Value	Description
<u>autoplay</u>	New	autoplay	Specifies that the video will start playing as soon as it is ready
<u>controls</u>	New	controls	Specifies that video controls should be displayed (such as a play/pause button etc).
<u>height</u>	New	pixels	Sets the height of the video player
loop	New	Іоор	Specifies that the video will start over again, every time it is finished
muted	New	muted	Specifies that the audio output of the video should be muted
poster	New	URL	Specifies an image to be shown while the video is downloading, or until the user hits the play button
preload	New	auto metadata none	Specifies if and how the author thinks the video should be loaded when the page loads
<u>src</u>	New	URL	Specifies the URL of the video file
width	New	pixels	Sets the width of the video player


Tabular Data

Element	Description
	Represents data with more than one dimension
<caption></caption>	Represents the title of a table
<col/>	Represents a column of a table
	Represents the block of rows that describes the concrete data of a table
<thead></thead>	Represents the block of rows that describes the column labels of a table
<tfoot></tfoot>	Represents the block of rows that describes the column summaries of a table
	Represents a row of cells in a table
	Represents a data cell in a table
>	Represents a header cell in a table



Interactive Elements

Element	Description
<details></details>	Represents a widget from which the user can obtain additional information or controls
<summary></summary>	Represents a summary , caption , or legend for a given <details></details>

Questions?

Sources



Introducing HTML5 Bruce Lawson, Remy Sharp New Riders Publishing, 2010





HTML and CSS: Design and Build Websites Jon Duckett ISBN: 978-1-118-00818-8

Additional Sources

- W3Schools: <u>http://www.w3schools.com/</u>
- Mozilla Developer Network: <u>https://developer.mozilla.org</u>

Lets get our hands dirty



Mud and dust

We only need a text editor

Netbeans



"First you say we should simplify our lives, and now you want me to make you a bacon, lettuce, and tomato sandwich!"



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