

HTML5 – adding semantics to webpages

- HTML / XHTML were simple page-oriented structures
 - Headings, paragraphs, lists, tables, images etc
- Gradually generic structures take over as use of the Web explodes
 - `<div>` & ``
- HTML5 recognises major new structures that are useful for
 - **search engines**; Google or Yahoo! can weight content in footer elements lower, or extra weight to content in the header.
 - **usability** for people with disabilities, screen readers etc

Structure of HTML5 Web page

```
<!DOCTYPE html>
```

```
<html>
```

```
<head>
```

```
<title>Title of the document</title>
```

```
</head>
```

```
<body>
```

```
    This is a really simple HTML5 page
```

```
</body>
```

```
</html>
```

Navigation support

`<nav>`: Represents a major navigation block. It groups links to other pages or to parts of the current page whose role is simply navigation

```
<nav>
<ul>
<li><a href="/">Home</a></li>
<li><a href="/events">Current Events</a></li>
<li><a href="/contact">Contact us</a></li>
</ul>
</nav>
```

Headers & Footers

<Header>: tag specifies a header for a document or section, the title and datestamp of a blog entry or news article

```
<body>
<header>
<h1>Little Green Guys With Guns</h1>
<nav>
<ul>
<li><a href="/games">Games</a>
<li><a href="/forum">Forum</a>
<li><a href="/download">Download</a>
</ul>
</nav>
</header>
<p>You have three active games:</p>
<!-- this is still part of the subsection entitled "Games" -->
...
```

```
<article>
<header>
<h1>Military Offers Assurances to Egypt and Neighbors</h1>
Published : <time datetime="2011-02-13" pubdate>February 13 2011</time>
</header>
<p>
CAIRO - As a new era dawned in Egypt on Saturday,
the army leadership sought to reassure Egyptians and
the world that it would shepherd a transition to civilian
rule and honor international commitments like the peace treaty with Israel.
</p>
</article>
```

Header & Footer

<footer>: Material that comes at the base of the page or article, e.g. copyright and contact information.

```
<ARTICLE>
<H1>My Favorite Trains</H1>
<P>I love my trains. My favorite train of all time is a Kof.</P>
<P>It is fun to see them pull some coal cars because they look so
dwarfed in comparison.</P>
<FOOTER> <!-- footer for article -->
<P>Published <TIME PUBDATE DATETIME="2009-09-15T14:54-07:00"></TIME></P>
</FOOTER>
</ARTICLE>
```

```
<FOOTER> <!-- site wide footer -->
<NAV>
<P><A HREF="/credits.html">Credits</A>-
<A HREF="/tos.html">Terms of Service</A> -
<A HREF="/index.html">Blog Index</A></P>
</NAV>
<P>Copyright © 2009 Gordon Freeman</P>
</FOOTER>
```

```
</BODY>
```

Articles

`<article>`: Articles and blog entries are common, an alternative to `<div class="article">`

used for distributable content in e.g. RSS feeds

An article may contain a header and footer and a title.

```
<body>
<h1>My blog</h1>
<article>

<header>
<h1>The Very First Rule of Life</h1>
<p><time pubdate datetime="2009-10-09T14:28:08:00"></time></p>
</header>

<p>If there's a microphone anywhere near you, assume it's hot and
sending whatever you're saying to the world. Seriously.</p>
<p>...</p>

<footer>
<a href="?comments=1">Show comments...</a>
</footer>

</article>
</body>
```

Asides (not as important)

`<aside>`: The "aside" element is a section that somehow related to main content, but it can be separate from that content

```
<article>
```

```
<p>
```

```
As of writing, the only web browser completely support date time input is Opera.
```

```
In HTML5, it is the job of web browser to ensure user can only enter a valid date time into the input textbox.
```

```
</p>
```

```
<aside>
```

```
Picking a date from Calendar is not the only way to input a date value even though it's HTML5 specifications does not mention anything about displaying a calendar for date inp
```

```
</aside>
```

```
</article>
```

Media - audio & video

- Until now, there has not been a standard for playing media files.
- Today, most audio & video is played by a plug-in (e.g. Adobe Flash).
- HTML5 provides new elements for media
 - But only understands a limited set of formats

```
<video src="movie.webm"></video>
```

```
<audio src="music.mp3"></audio>
```


Overall Structure of Web page



- > <header>
- > <nav>
- > <article>
- > <section>
- > <aside>
- > <footer>

Other Tags

- > <canvas>
- > <hgroup>
- > <address>
- > <figure>
- > <meter>
- > <progress>
- > <time>

Drawing – Canvas

Provides a surface for programs to draw on using a standard API
Avoids the need to download pre-generated images from the network.

- Lines
- Arcs
- Text
- Gradients
- Patterns.

```
<canvas id="myCanvas">  
</canvas>
```

Also provides image and pixel manipulation.

```
<script>  
  var myCanvas = document.getElementById("myCanvas");  
  var drawingContext = myCanvas.getContext("2d");  
  
  canvasContext.fillRect(100, 100, 100, 100);  
</script>
```

Lots of software companies rely on web technologies to test market hypotheses in order to develop viable businesses. They often need to quickly build web services that are at the core of their Minimum Viable Products (MVPs). MVPs must be reliable whereas they are based on specifications and hypotheses that are likely to change. Web programming as an element of software engineering does not mean developing code of one or more web programming languages only. It is complex activity related to method, technology, design and codification of applications (web apps) representing organized software structures of content and functionality in the web.

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