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>` & `<span>`

- 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

```html
<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>
        <li><a href="/forum">Forum</a></li>
        <li><a href="/download">Download</a></li>
      </ul>
    </nav>
  </header>
  <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>
</body>

You have three active games:

!!-- this is still part of the subsection entitled "Games" -->

...
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 PUBLDATE 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.

```html
<body>
<h1>My blog</h1>
<article>
  <header>
    <h1>The Very First Rule of Life</h1>
    <time datetime="2009-10-09T14:28:08:00"></time>
  </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>
  ...
  
  <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 input
</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>`
- `<meter>`
- `<hgroup>`
- `<progress>`
- `<address>`
- `<time>`
- `<figure>`
Drawing – Canvas

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

- Lines
- Arcs
- Text
- Gradients
- Patterns.

Also provides image and pixel manipulation.

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

<script>
    var myCanvas = document.getElementById("myCanvas");
    var drawingContext = myCanvas.getContext("2d");

    canvasContext.fillRect(100, 100, 100, 100);
</script>
```
Data should be provided using a standard format (HTML, XML, RDF etc). Data should be interlinked with other data. 29 URIs identify any resource.