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

```html
<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>
  <p>You have three active games:</p>
  <!-- this is still part of the subsection entitled "Games" -->
  ...
```
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>
<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 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 on 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>
```

```javascript
var myCanvas = document.getElementById("myCanvas");
var drawingContext = myCanvas.getContext("2d");

canvasContext.fillRect(100, 100, 100, 100);
</script>```