HTML Layouts

- Layouts were created using the `<div>` tag in older versions of HTML.
- Partitions the page into columns/blocks, each used for a specific purpose.
- `<div>` was paired with CSS styles using the id attributes.
- Layouts can also be created using tables, but it is not recommended.
- HTML5 introduces new semantic elements to handle layouts.
Semantic Elements

<header>
<nav>
<section>
<article>
<aside>
<footer>
A semantic element clearly describes its meaning to both the browser and the developer.

All the layout tags in the previous slide are semantic elements.

Some common semantic elements are:

- **Header**: specifies a header for a document or section.
- **Nav**: defines a set of navigation links.
- **Section**: defines a section in a document
- **Aside**: defines content aside from the page content.
- **Article**: defines an article.
- **Footer**: defines a footer for a document or section.
- **Figure**: Specifies self-contained content, like illustrations, diagrams, photos, code listings, etc.
An iframe is used to display a web page within a web page.

Syntax:
```html
<iframe src="demo_iframe.htm" width="200" height="200" frameborder="0" name="iframe_a"></iframe>
```

An iframe can be used as the target frame for a link.
```html
<p><a href="http://www.google.com" target="iframe_a">Google</a></p>
```
Multimedia comes in many different formats. It can be almost anything you can hear or see.

Examples: Pictures, music, sound, videos, records, films, animations, and more.

Web pages often contains multimedia elements of different types and formats.

Common audio formats include .midi, .wma, .wav, .mp3, .mp4 etc.

Common video formats include .mpg, .wmv, .avi, .flv, .mp4, .mov, etc.
HTML Video Tags

- `<video>`: Defines a video or movie.
- `<source>`: Defines multiple media resources for media elements, such as `<video>` and `<audio>`.
- `<track>`: Defines text tracks in media players.
- `<video width="320" height="240" controls>`
  `<source src="movie.mp4" type="video/mp4">`
  Your browser does not support the video tag. `</video>`
- The controls attribute adds video controls, like play, pause, and volume.
- Text between the `<video>` and `</video>` tags will only display in browsers that do not support the `<video>` element.
- Multiple `<source>` elements can link to different video files. The browser will use the first recognized format.
- To start a video automatically use the `autoplay` attribute.
HTML Plug-ins

- `<object>` and `<embed>` elements are used to add helper applications.
- Examples are java applets for maps, virus scans, etc.
- `<object>` is supported by all browsers. `<embed>` by most later versions, and doesn’t have a closing tag.
- Youtube elements are usually embedded into iframes, objects or embed elements.
- The other attributes for the video tags work here.
HTML Graphics: Canvas

- The HTML5 `<canvas>` element is used to draw graphics, on the fly, via scripting.
- The `<canvas>` element is only a container for graphics.
- By default, the `<canvas>` element has no border and no content.
- You can have multiple `<canvas>` elements on one HTML page.
  ```html
  <canvas width="200" height="100"></canvas>
  ```
- Drawing on the canvas is usually done with Javascript.
- Objects include, but are not limited to:
  - Paths
  - Text
  - Gradients
  - Images
SVG stands for Scalable Vector Graphics
SVG is used to define vector-based graphics for the Web
SVG defines the graphics in XML format
SVG graphics do NOT lose any quality if they are zoomed or resized
Every element and every attribute in SVG files can be animated
SVG is a W3C recommendation
In HTML5, you can embed SVG elements directly into your HTML page.

```html
<svg width="300" height="200">
  <polygon points="100,10 40,198 190,78 10,78 160,198" style="fill:lime;stroke:purple;stroke-width:5;fill-rule:evenodd;"/>
</svg>
```