More CSS - Page layout + HTML5 new features

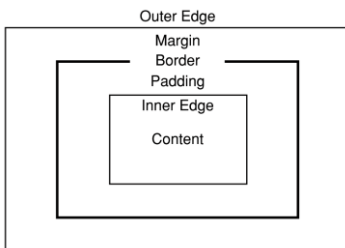Boriana Koleva
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Overview

- The Box Model
  - Borders
  - Margins and padding
- Using div tags with the box model
- HTML5
  - New features
  - Browser support

The Box Model

- Each element in a document is considered to be a rectangular box consisting of content area, padding, a border and margins

```
                    Outer Edge
          Margin
          Border
          Padding
          Inner Edge
          Content
```

Borders

- Every element has a **border-style** property
  - Controls whether the element has a border and if so, the style of the border
- **border-style** values: none, dotted, dashed, and double
- **border-width** values: thin, medium (default), thick, or a length value in pixels
  - Border width can be specified for any of the four borders (e.g., border-top-width)
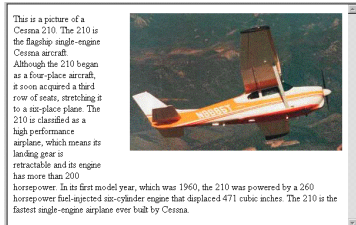

Borders

- **border-color** – any color
  - Border color can be specified for any of the four borders (e.g., border-top-color

  http://www.cs.nott.ac.uk/~bnk/WPS/border.html

Margins

- The space between the border of an element and its neighbor element
- The margins around an element can be set with **margin-left**, etc. - just assign them a length value

```
<img src = "c210.jpg" style = "float:
right; margin-left: 0.35in; margin-
bottom: 0.35in" />
```

Slide 1

This is a picture of a Cessna 210. The 210 is the flagship single-engine Cessna aircraft. Although the 210 began as a four-place aircraft, it soon acquired a third row of seats, stretching it to a six-place plane. The 210 is classified as a high performance airplane, which means its landing gear is retractable and its engine has more than 200 horsepower. In its first model year, which was 1960, the 210 was powered by a 260 horsepower fuel-injected six-cylinder engine that displaced 471 cubic inches. The 210 is the fastest single-engine airplane ever built by Cessna.

Padding

- The distance between the content of an element and its border
  - Controlled by `padding`, `padding-left`, etc.

http://www.cs.nott.ac.uk/~bnk/WPS/marpads.html

div tags with the box model

- An example of a two-column page layout
  - Left-column navigation
  - Right-column logo and content

http://www.cs.nott.ac.uk/~bnk/WPS/twocolumn.html

HTML5 new features

- The video and audio elements for media playback
- The canvas element for drawing
- New content specific elements, e.g:
  - article, footer, header, nav, section
- New form controls, e.g.:
  - calendar, date, time, email, url, search
- Better support for local offline storage

HTML5 Video

- Until now, there has never been a standard for showing video on a web page
- Most videos are shown through a plugin (like flash)
  - However, not all browsers have the same plugins
- HTML5 specifies a standard way to include video, with the video element

```
<video src="movie.ogg"
  controls="controls">
</video>
```

http://www.cs.nott.ac.uk/~bnk/WPS/video.html

Video Formats

Format	IE	Firefox	Opera	Chrome	Safari
Ogg	No	3.5+	10.5+	5.0+	No
MPEG 4	No	No	No	5.0+	3.0+
WebM	No	No	10.6+	6.0+	No

- Ogg = Ogg files with Theora video codec and Vorbis audio codec
- MPEG4 = MPEG 4 files with H.264 video codec and AAC audio codec
- WebM = WebM files with VP8 video codec and Vorbis audio codec

HTML5 Audio

- So far no standard for playing audio on web page
- Most audio are played through a plugin (flash)
  - However, not all browsers have the same plugins
- HTML5 specifies a standard way to include audio, with the audio element
- The audio element can play sound files, or an audio stream

```
<audio src="song.ogg" controls="controls">
  Your browser does not support the audio
  element.
</audio>
```

Audio Formats

Format	IE 8	Firefox 3.5	Opera 10.5	Chrome 3.0	Safari 3.0
Ogg Vorbis	No	Yes	Yes	Yes	No
MP3	No	No	No	Yes	Yes
Wav	No	Yes	Yes	No	Yes

Canvas Element

- Uses JavaScript to draw graphics on a web page
- A rectangular area, you control every pixel of it
- It has several methods for drawing paths, boxes, circles, characters, and adding images
- Create a Canvas element
  - Add a canvas element to the HTML5 page.
  - Specify the id, width, and height of the element

```
<canvas id="myCanvas" width="200"
        height="100"></canvas>
```

Canvas Element

- Draw with JavaScript:

```
<script type="text/javascript">
  var c=document.getElementById("myCanvas");
  var cxt=c.getContext("2d");
  cxt.fillStyle="#FF0000";
  cxt.fillRect(0,0,150,75);
</script>
```

http://www.cs.nott.ac.uk/~bnk/WPS/canvas.html

Canvas Element – line example

- Draw a line by specifying where to start, and where to stop

```
<script type="text/javascript">
  var
  c=document.getElementById("myCanvas");
  var cxt=c.getContext("2d");
  cxt.moveTo(10,10);
  cxt.lineTo(150,50);
  cxt.lineTo(10,50);
  cxt.stroke();
</script>
```

http://www.cs.nott.ac.uk/~bnk/WPS/canvas-line.html

New content specific elements

- New elements for better structure
- `<article>` - for external content
  - E.g. text from a news-article, blog, forum, or any other content from an external source
- `<header>` - for an introduction of a document or section, could include navigation
- `<nav>` - for a section of navigation
- `<section>` - for a section in a document
  - Such as chapters, headers, footers, etc
- `<time>` - for defining a time or a date, or both

New form controls

- Several new input types for forms
  - allow for better input control and validation
- email - used for input fields that should contain an e-mail address
  - The value of the email field is automatically validated when the form is submitted
  - `<input type="email" name="user_email" />`
- url - used for input fields that should contain a URL address
  - The value of the url field is automatically validated when the form is submitted
  - `<input type="url" name="user_url" />`

New form controls

- HTML5 has several new input types for selecting date and time:
  - date - selects date, month and year
  - month - selects month and year
  - week - selects week and year
  - time - selects time (hour and minute)
  - datetime - selects time, date, month and year (UTC time)
  - datetime-local - selects time, date, month and year (local time)
  - `<input type="date" name="user_date" />`

Browser Support

Input type	IE	Firefox	Opera	Chrome	Safari
email	No	No	9.0	No	No
url	No	No	9.0	No	No
number	No	No	9.0	7.0	No
range	No	No	9.0	4.0	4.0
Date pickers	No	No	9.0	No	No
search	No	No	11.0	No	No
color	No	No	11.0	No	No

Opera has the best support for the new input types. However, you can already start using them in all major browsers. If they are not supported, they will behave as regular text fields.

HTML5 Web Storage

- Two new objects for storing data on the client:
  - localStorage - stores data with no time limit
  - sessionStorage - stores data for one session
- So far this done with cookies
  - But not suitable for large amounts of data, because they are passed on by every request to the server
- In HTML5, the data is used only when asked for
  - It is possible to store large amounts of data without affecting the website's performance
- Data is stored in different areas for different websites, and a website can only access data stored by itself
- HTML5 uses JavaScript to store and access the data

HTML5 Browser Support

- HTML5 is not yet an official standard, and no browser has full HTML5 support
- Canvas support - Firefox 3.0+, Safari 3.0+, Chrome 3.0+, Opera 10.0+
- HTML5 Storage support – IE8+, Firefox 3.5+, Safari 4.0+, Chrome 4.0+, Opera 10.5+
- Upcoming Internet Explorer 9 will be supporting most HTML5 features