

CSS

Mark up languages

Using markup correctly

Cascading Style Sheets

Markup languages

Many different ones

HTML
XML
XHTML
CML
Office XML
SGML
mathML
OOXML
... and others

Markup languages

Here are some made up ones!

houseML

```
<house id="34569">  
<type>detached</type>  
<address>Kingston</address>  
<bedrooms>4</bedrooms>  
</house>
```

```
<module code="BB1754">  
<title>Information Technology for Business</title>  
<lecturer>Barry Avery</lecturer>  
<offered>  
  <course>Business Information Technology</course>  
  <course>Business Management</course>  
  <course>International Business</course>  
  <course>Accounting and Finance</course>  
</offered>  
</module>
```

moduleML

Why bother to have markup languages...

How do we store information?

Choices

binary files



plain text files

```
<house id="34569">  
<type>detached</type>  
<address>Kingston</address>  
<bedrooms>4</bedrooms>  
</house>
```

Why bother to have markup languages?

How do we store information?

Choices

binary files

- Often Proprietary
- Can be secret
- Could be patented
- Sustainable?

plain text files

```
<house id="34569">  
<type>detached</type>  
<address>Kingston</address>  
<bedrooms>4</bedrooms>  
</house>
```

Why bother to have markup languages?

How do we store information?

Choices

binary files

- Often Proprietary
- Can be secret
- Could be patented
- Sustainable?

plain text files

- Readable/Writable
- Visible
- Maintainable

History lesson Moon landing data

Much of it stored on Tapes and Drives no longer manufactured

Binary files on tape

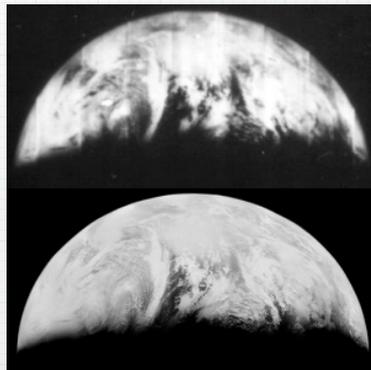
Effectively lost



History lesson Moon landing data



Old drives 'found'



Some images recovered

<http://www.collectspace.com/news/news-111408a.html>

Markup languages

Two markup languages are used to 'create' other markup languages

SGML

Standard Generalized
Markup Language

XML

Extensible Markup
Language

- Markup languages written in these are called "applications of .."

Markup languages - a brief history

SGML - Standard Generalized Markup Language

- Charles Goldfarb, Edward Mosher, Raymond Lorie
- First draft 1980
- Used to write markup for many kinds of documents in law/Science

Markup languages - a brief history

XML - Extensible Markup Language

- Tim Bray, Jean Paoli, C. M. Sperberg-McQueen, Eve Maler, François Yergeau, John Cowan
- First draft 1996
- Specifically designed for electronic documents
- Much smaller specification
- Formal

Markup languages - a brief history

HTML - Hypertext Markup Language

- Many different versions
- First draft 1991 by Tim Berners-Lee
- Specifically used for Hypertext documents
- An application of SGML

HTML - Hypertext Markup Language

Version	Year	Status
-	1993	IETF working draft
2.0	1995	IETF RFCs
3.0	April 1995	Proposed by Dave Raggett / W3C
3.2	Jan 1997	W3C Recommendation
4.0	Dec 1997	W3C Recommendation
4.1	Dec 1999	W3C Recommendation / ISO standard

HTML - Hypertext Markup Language

Version	Year	Status
-	1993	IETF working draft

<http://www.w3.org/MarkUp/draft-ietf-iiir-html-01.txt>

HTML - Hypertext Markup Language

<HTML></HTML> encloses the entire document and defines it as HTML
<HEAD></HEAD> comes after the opening <HTML> tag and contains the <TITLE>
<TITLE></TITLE> contains the name of the document and must be enclosed by <HEAD> tags
<BODY></BODY> contains all of the rest of the document - it is opened after the closing </HEAD> tag and is closed at the end of the document. The only tag to go after the closing </BODY> tag is the closing </HTML> tag.

A - anchor
ADDRESS - formatting tag, often shown in italics
B - formatting tag, bold
BASE - optional head element, sets base URL for related documents
BLOCKQUOTE - formatting tag, to indicate portions of text included from other documents
BR - line break
CITE - formatting tag, to indicate text is a citation from another source
CODE - formatting tag, to indicate text is program source code
DD - list tag, definition
DIR - list tag, directory
DL - list tag, definition list
DT - list tag, definition term
EM - formatting tag, to indicate text is to be emphasized

Looks like what we use now

HTML - Hypertext Markup Language

H1 - structural heading, top (largest) level
H2 - structural heading
H3 - structural heading
H4 - structural heading
H5 - structural heading
H6 - structural heading, bottom (smallest) level
HR - horizontal rule
I - formatting tag, italics
IMG - image anchor
ISINDEX - optional head element, indicates document is a searchable index
KBD - formatting tag, indicates expected user in source code
LI - list tag, list item
LINK - indicates relationship between documents, varies from browser to browser
MENU - list tag, compacted
META - optional head element, information for client software such as last revision date
NEXTID - optional head element used by automated markup systems to keep track of anchors
OL - list tag, ordered list
P - paragraph break
PRE - formatting tag, indicates text should be preformatted (monospaced, preserve whitespace)
SAMP - formatting tag, used to mark text output from a computer program
STRONG - formatting tag, strongly emphasize text
TT - formatting tag, typewriter text, show text in fixed font
UL - list tag, unnumbered list
VAR - formatting tag, indicated a variable in program source code

HTML - Hypertext Markup Language

TYPICAL RENDERING

H1	Bold very large font, centered. One or two lines clear space between this and anything following. If printed on paper, start new page.
H2	Bold, large font,, flush left against left margin, no indent. One or two clear lines above and below.
H3	Italic, large font, slightly indented from the left margin. One or two clear lines above and below.
H4	Bold, normal font, indented more than H3. One clear line above and below.
H5	Italic, normal font, indented as H4. One clear line above.
H6	Bold, indented same as normal text, more than H5. One clear line above.

HTML - Hypertext Markup Language

```
<HTML>
<TITLE>
  A sample HTML instance
</TITLE>
<H1>
  An Example of Structure
</H1>
Here's a typical paragraph.
<P>
<UL>
<LI>
  Item one has an
  <A NAME="anchor">
    anchor
  </A>
<LI>
  Here's item two.
</UL>
</HTML>
```

```
<OL>
<LI> When you get to the station, leave
by the southern exit, on platform one.
<LI> Turn left to face toward the mountain
<LI> Walk for a mile or so until you reach the
"Asquith Arms" then
<LI> Wait and see...
</OL>
```

```
< MENU >
<LI> The oranges should be pressed fresh
<LI> The nuts may come from a packet
<LI> The gin must be good quality
</MENU>

< DIR >
<LI> A-H<LI> I-M
<LI> M-R<LI> S-Z
</DIR>
```

```
<DL>
<DT> Term the first<DD> definition paragraph is reasonably
long but is still displayed clearly
<DT> Term2 follows<DD> Definition of term2
</DL>
```

```
<DL COMPACT>
<DT> Term<DD> definition paragraph
<DT> Term2<DD> Definition of term2
</DL>
```

HTML - Hypertext Markup Language

```
<HTML>
<TITLE>
  A sample HTML instance
</TITLE>
<H1>
  An Example of Structure
</H1>
Here's a typical paragraph.
<P>
<UL>
  <LI>
    Item one has an
    <A NAME="anchor">
      anchor
    </A>
  <LI>
    Here's item two.
  </LI>
</UL>
</HTML>
```

- Note CASE isn't important

<TITLE> <title>

- Closing tags optional

 ??

- Attributes don't have to be in quotes

- Because HTML is an application of SGML (ish)

HTML - Versions

Version	Year	Changes
-	1993	
2.0	1995	tables, image maps, internationalisation
3.0	April 1995	Style sheet links, tables, text flow and maths symbols
3.2	Jan 1997	Includes vendor specific tags
4.0	Dec 1997	Offers "flavours" of HTML - adds, cleans and deprecates features
4.1	Dec 1999	Tweaks, fixes and ISO - standardisation

HTML 4.0 + "flavours"

Strict	Deprecated features forbidden
Transitional	Deprecated features allowed
Frameset	Frames are allowed

Marks some elements and attributes as deprecated

Valid syntax for markup is specified in separate **doctype** files

HTML 4.0 + "flavours"

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"
"http://www.w3.org/TR/html4/loose.dtd">
<html>
<head>
...
</head>
<body>
...
</body>
</html>
```

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01//EN"
"http://www.w3.org/TR/html4/strict.dtd">
<html>
<head>
...
</head>
<body>
...
</body>
</html>
```

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Frameset//EN"
"http://www.w3.org/TR/html4/frameset.dtd">
<html>
<head>
...
</head>
<frameset>
...
</frameset>
</html>
```

Markup languages - a brief history

XHTML - Hypertext Markup Language as an XML application

- A few versions (1.0, 1.1 and 2.0)
- First draft 1998 by W3C
- Reformulate HTML using XML rather than SGML
- XHTML is an application of XML
- Consequence - formal requirements in syntax

XHTML

Tags must be in lower case

```
<TITLE>My title </TITLE>
```

```
<title>My title </title>
```

End tags cannot be omitted

<p>Most tags have an end tag that's required so don't forget your end tag </p>

Empty elements must close properly so

```
<image src = "myimage.png" / >
```

XHTML

Tags must be correctly nested

```
<b>Example text in bold  
with <i>incorrect</b> nesting </i>  
<b>Example text in bold  
with <i>correct</i> nesting </b>
```

Attribute values must be in quotes

```
<img src=incorrectly_quoted.jpg />  

```

Special head required for correct validation

```
<?xml version="1.0" encoding="utf-8"?>  
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"  
  "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">  
<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">  
  
<head>  
  <title>An XHTML 1.0 Strict standard template</title>  
  <meta http-equiv="content-type" content="text/html; charset=utf-8" />
```

OR - others available ...

<http://www.w3.org/QA/2002/04/valid-dtd-list.html>

Most people just cut and paste one in

So what about this course?

- Use **XHTML** semantically for content

XHTML - Hypertext Markup Language as an XML application

- Use **CSS** for design

CSS - Cascading Style Sheets

Semantic XHTML

- No official specification
- Use XHTML to convey the meaning of the document (content)
- NOT presentation (style) or how conveyed

Semantic

adj.

Of or relating to meaning, especially meaning in language.

Of, relating to, or according to the science of semantics.

Semantic XHTML

- Avoid presentation markup

Good
<h1>, <h2>, ..<h6>
<p>, ,
,
<blockquote>, <cite>

Tags we have been using anyway..except use

Bad
<font color="...",
align="center" ...
<font ...face="...
<blink>
bgcolor="#FFFFFF"
text="#000080"
<hr>, <i>,
... etc..

- Use these tags to mark up the documents structure

<html>	HTML document
<head>	Meta information block
<title>	Window bar text
<body>	Displayed block
<h1> ..<h6>	Headings
<p>	Paragraphs
<a>	Hyperlinks (anchors)
	Images

- Use these tags to mark up the documents structure

	list item
 	Unordered / ordered lists
<table>	Table
<tr>	Table row
<th> <td>	Table heading / data
	Make something stand out
	Emphasise something

Semantic XHTML example

Flash drives

Flash drive capacities

Here is a picture of a 128MB flash drive which was popular at one time. Note the USB connector. 128MB is regarded as being rather small now.



Current capacities

Current standards are measured in Gigabytes (1GB, 2GB) with increasingly larger sized devices scheduled to appear soon.

So we start off with the raw design (text)...

Flash drives

Flash drive capacities

Here is a picture of a 128MB flash drive which was popular at one time. Note the USB connector. 128MB is regarded as being rather small now.

Include image here

Current capacities

Current standards are measured in Gigabytes (1GB, 2GB) with increasingly larger sized devices scheduled to appear soon.

Now start to mark it up...

Flash drives

Main heading

Flash drive capacities

Here is a picture of a 128MB flash drive which was popular at one time. Note the USB connector. 128MB is regarded as being rather small now.

Include image here

Current capacities

Current standards are measured in Gigabytes (1GB, 2GB) with increasingly larger sized devices scheduled to appear soon.

Add main heading tag

Flash drives

Flash drive capacities

Here is a picture of a 128MB flash drive which was popular at one time. Note the USB connector. 128MB is regarded as being rather small now.

Include image here

Current capacities

Current standards are measured in Gigabytes (1GB, 2GB) with increasingly larger sized devices scheduled to appear soon.

Add main heading tag

```
<h1>Flash drives</h1>
```

Flash drive capacities

Here is a picture of a 128MB flash drive which was popular at one time. Note the USB connector. 128MB is regarded as being rather small now.

Include image here

Current capacities

Current standards are measured in Gigabytes (1GB, 2GB) with increasingly larger sized devices scheduled to appear soon.

Now sub-headings...

`<h1>Flash drives</h1>`

Flash drive capacities

Sub heading

Here is a picture of a **128MB** flash drive which was popular at one time. Note the **USB** connector. **128MB** is regarded as being rather small now.

Include image here

Current capacities

Sub heading

Current standards are measured in **Gigabytes (1GB, 2GB)** with increasingly larger sized devices scheduled to appear soon.

Now sub-headings...

`<h1>Flash drives</h1>`

Flash drive capacities

Here is a picture of a **128MB** flash drive which was popular at one time. Note the **USB** connector. **128MB** is regarded as being rather small now.

Include image here

Current capacities

Current standards are measured in **Gigabytes (1GB, 2GB)** with increasingly larger sized devices scheduled to appear soon.

Add sub-heading tags

`<h1>Flash drives</h1>`

`<h2>Flash drive capacities</h2>`

Here is a picture of a **128MB** flash drive which was popular at one time. Note the **USB** connector. **128MB** is regarded as being rather small now.

Include image here

Current capacities

Current standards are measured in **Gigabytes (1GB, 2GB)** with increasingly larger sized devices scheduled to appear soon.

Add sub-heading tags

`<h1>Flash drives</h1>`

`<h2>Flash drive capacities</h2>`

Here is a picture of a 128MB flash drive which was popular at one time. Note the USB connector. 128MB is regarded as being rather small now.

Include image here

`<h2>Current capacities</h2>`

Current standards are measured in Gigabytes (1GB, 2GB) with increasingly larger sized devices scheduled to appear soon.

Now paragraphs...

`<h1>Flash drives</h1>`

`<h2>Flash drive capacities</h2>`

Here is a picture of a 128MB flash drive which was popular at one time. Note the USB connector. 128MB is regarded as being rather small now.

Include image here

`<h2>Current capacities</h2>`

Current standards are measured in Gigabytes (1GB, 2GB) with increasingly larger sized devices scheduled to appear soon.

Now paragraphs...

`<h1>Flash drives</h1>`

`<h2>Flash drive capacities</h2>`

Here is a picture of a 128MB flash drive which was popular at one time. Note the USB connector. 128MB is regarded as being rather small now.

Include image here

`<h2>Current capacities</h2>`

Current standards are measured in Gigabytes (1GB, 2GB) with increasingly larger sized devices scheduled to appear soon.

Now paragraphs...

<h1>Flash drives</h1>

<h2>Flash drive capacities</h2>

<p>Here is a picture of a 128MB flash drive which was popular at one time. Note the USB connector. 128MB is regarded as being rather small now.</p>

Include image here

<h2>Current capacities</h2>

Current standards are measured in Gigabytes (1GB, 2GB) with increasingly larger sized devices scheduled to appear soon.

Now paragraphs...

<h1>Flash drives</h1>

<h2>Flash drive capacities</h2>

<p>Here is a picture of a 128MB flash drive which was popular at one time. Note the USB connector. 128MB is regarded as being rather small now.</p>

Include image here

<h2>Current capacities</h2>

<p>Current standards are measured in Gigabytes (1GB, 2GB) with increasingly larger sized devices scheduled to appear soon.</p>

Now add image...

<h1>Flash drives</h1>

<h2>Flash drive capacities</h2>

<p>Here is a picture of a 128MB flash drive which was popular at one time. Note the USB connector. 128MB is regarded as being rather small now.</p>

Include image here

<h2>Current capacities</h2>

<p>Current standards are measured in Gigabytes (1GB, 2GB) with increasingly larger sized devices scheduled to appear soon.</p>

Now add image...

```
<h1>Flash drives</h1>
```

```
<h2>Flash drive capacities</h2>
```

```
<p>Here is a picture of a 128MB flash drive which was popular at one time. Note the USB connector. 128MB is regarded as being rather small now.</p>
```

```

```

```
<h2>Current capacities</h2>
```

```
<p>Current standards are measured in Gigabytes (1GB, 2GB) with increasingly larger sized devices scheduled to appear soon.</p>
```

So we end up with this:

Flash drives

Flash drive capacities

Here is a picture of a 128MB flash drive which was popular at one time. Note the USB connector. 128MB is regarded as being rather small now.



Current capacities

Current standards are measured in Gigabytes (1GB, 2GB) with increasingly larger sized devices scheduled to appear soon.

And NOT this:



Flash drive

Getting Started Latest Headlines

Flash drives

Flash drive capacities

Here is a picture of a 128MB flash drive which was popular at one time. Note the USB connector. 128MB is regarded as being rather small now.



Current capacities

Current standards are measured in Gigabytes (1GB, 2GB) with increasingly larger sized devices scheduled to appear soon.

Which comes from this mess:

```
<html>
<head>
<title><b>Flash drive</b></title>
```

No other tags allowed in titles
Missing </head>

```
<body>
<b><p>Flash drives</p></b>
```

Attempting to use other tags rather
than <h1>

```
<p><i>Flash drive capacities</i></p>
```

```
<p>Here is a picture of a 128MB flash drive which was popular at one time. Note  
the USB connector. 128MB is regarded as being rather small now.</p>
</img>
```

```
<p><i>Current capacities</i></p>
```

```
Current standards are measured in Gigabytes (1GB, 2GB) with increasingly larger  
sized devices scheduled to appear soon.</p>
```

```
</html>
```

Which comes from this mess:

```
<html>
<head>
<title><b>Flash drive</b></title>
```

```
<body>
<b><p>Flash drives</p></b>
```

```
<p><i>Flash drive capacities</i></p>
```

Attempting to use other tags rather
than <h2>

```
<p>Here is a picture of a 128MB flash drive which was popular at one time. Note  
the USB connector. 128MB is regarded as being rather small now.</p>
</img>
```

Image tag not properly closed

```
<p><i>Current capacities</i></p>
```

Missing <h2>

```
Current standards are measured in Gigabytes (1GB, 2GB) with increasingly larger  
sized devices scheduled to appear soon.</p>
```

Missing <p>

```
</html>
```

Missing </body>

CSS

What they are

How to use them

Start with a document - semantic XHTML

Flash drives

Flash drive capacities

Here is a picture of a 128MB flash drive which was popular at one time. Note the USB connector. 128MB is regarded as being rather small now.



Current capacities

Current standards are measured in Gigabytes (1GB, 2GB) with increasingly larger sized devices scheduled to appear soon.

```
<h1>Flash drives</h1>
```

```
<h2>Flash drive capacities</h2>
```

```
<p>Here is a picture of a 128MB flash drive which was popular at one time. Note the USB connector. 128MB is regarded as being rather small now.</p>
```

```

```

```
<h2>Current capacities</h2>
```

```
<p>Current standards are measured in Gigabytes (1GB, 2GB) with increasingly larger sized devices scheduled to appear soon.</p>
```

Lets make it more "colourful" in Frontpage

Flash drives

Flash drive capacities

Here is a picture of a 128MB flash drive which was popular at one time. Note the USB connector. 128MB is regarded as being rather small now.



Current capacities

Current standards are measured in Gigabytes (1GB, 2GB) with increasingly larger sized devices scheduled to appear soon.

```
<body bgcolor="#FFFFFF" text="#000080">
```

```
<h1 align="center"><font color="#408080" size="6" face="Tunga">Flash drives</font></h1>
```

```
<h2 align="right"><font color="#FF0000" face="Impact">Flash <blink>drive</blink>
```

```
capacities</font></h2>
```

```
<blockquote>
<p><font face="Arial Narrow">Here is a picture of a 128MB flash drive which was popular at one time. Note the USB connector. 128MB is regarded as being rather small now.</font></p>
</blockquote>
```

```
<p align="center"> </p>
```

Source is messy and confusing

```
<h2 align="center"><font color="#800040" face="Comic Sans MS">Current capacities</font></h2>
```

```
<blockquote>
<p><font face="Arial Narrow">Current standards are measured in Gigabytes (1GB, 2GB) with increasingly larger sized devices scheduled to appear soon.</font></p>
</blockquote>
```

```
</blockquote>
</body>
```

```
<body bgcolor="#FFFFFF" text="#000080">
```

```
<h1 align="center"><font color="#408080"
size="6" face="Tunga">Flash
drives</font></h1>
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capacities</font></h2>
```

```
<blockquote>
```

```
<p><font face="Arial Narrow">Here is a
picture of a 128MB
flash drive which was popular at one time.
Note the USB
```

```
connector. 128MB is regarded as being
rather small now.</font></p>
</blockquote>
```

```
<p align="center"> </p>
```

Lost the content ...

```
<h2 align="center"><font color="#800040"
face="Comic Sans MS">Current
capacities</font></h2>
```

```
<blockquote>
```

```
<p><font face="Arial Narrow">Current
standards are measured
in Gigabytes (1GB, 2GB) with increasingly
larger sized
devices scheduled to appear soon.</font></
p>
```

```
</blockquote>
```

```
</body>
```

```
<body bgcolor="#FFFFFF" text="#000080">
```

```
<h1 align="center"><font color="#408080"
size="6" face="Tunga">Flash
drives</font></h1>
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```

```
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```
<blockquote>
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```
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Lost the content ...

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<h2 align="center"><font color="#800040"
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```
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Note the USB
```

```
connector. 128MB is regarded as being
rather small now.</font></p>
</blockquote>
```

```
<p align="center"> </p>
```

... in with the 'style' or design

```
<h2 align="center"><font color="#800040"
face="Comic Sans MS">Current
capacities</font></h2>
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```
<blockquote>
```

```
<p><font face="Arial Narrow">Current
standards are measured
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p>
```

```
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```
</blockquote>
```

```
</body>
```

Also

- What happens when the same content is to be used in different ways...
...displayed in different styles

Print

- Typically B&W
- Headers & Footers
- Page numbers



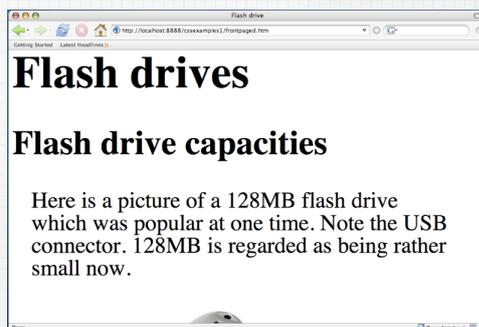
PDA's / Mobile devices

- Smaller screen
- May not support full range of colours or fonts



Readers for visual impairments

- Enlarges text
- May discard pictures
- May read the page aloud



Solution:

Separate Design
from content

Design
Cascading Style Sheets

Design

Content

Content

Semantic HTML

Flash drives

Flash drive capacities

Here is a picture of a 128MB flash drive which was popular at one time. Note the USB connector. 128MB is regarded as being rather small now.



Current capacities

Current standards are measured in Gigabytes (1GB, 2GB) with increasingly larger sized devices scheduled to appear soon.

Content

+

Design

Final transformed document

```
body {
background: teal;
}

h1 {
font-family: Arial, sans-serif;
font-size: 200%;
color: navy;
background: silver;
text-align: center;
}

h2 {
font-family: Arial, sans-serif;
background: #255788;
color: white;
text-align: right;
}

p {
font-family: "Lucida Grande";
color: white;
}
```

A style sheet



Flash drives

Flash drive capacities

Here is a picture of a 128MB flash drive which was popular at one time. Note the USB connector. 128MB is regarded as being rather small now.



Current capacities

Current standards are measured in Gigabytes (1GB, 2GB) with increasingly larger sized devices scheduled to appear soon.

Content

+

Design

Final transformed document

```
body {
background: black;
}

h1 {
font-family: Courier New, Courier, mono;
font-size: 200%;
color: magenta;
background: silver;
text-align: left;
}

h2 {
font-family: Arial, sans-serif;
background: red;
color: white;
text-align: center;
}

p {
font-family: Arial, Helvetica, sans-serif;
color: white;
}
```

A different style sheet



Flash drives

Flash drive capacities

Here is a picture of a 128MB flash drive which was popular at one time. Note the USB connector. 128MB is regarded as being rather small now.



Current capacities

Current standards are measured in Gigabytes (1GB, 2GB) with increasingly larger sized devices scheduled to appear soon.

Content

+

Design

Final transformed document

```
body {
background: white;
}

h1 {
font-family: Arial, sans-serif;
font-size: 200%;
color: blue;
background: silver;
border: 1px solid black;
}

h2 {
font-family: Arial, sans-serif;
background: silver;
color: blue;
text-align: left;
border: 1px solid black;
}

p {
font-family: "Lucida Grande";
color: black;
}
```

A different style sheet



Cascading Style Sheets

CSS level 1	17 Dec 1996, revised 11 Jan 1999	http://www.w3.org/TR/REC-CSS1
CSS level 2	12-May-1998, revision Working Draft 11 April 2006	http://www.w3.org/TR/REC-CSS2/ http://www.w3.org/TR/CSS21/
CSS level 3	(As at Oct 2006) Working draft documents	http://www.w3.org/Style/CSS/current-work

Variable browser support for different levels

http://www.webdevout.net/browser_support.php

How to use CSS:

```
<html>  
<head>  
<title>Flash drive</title>
```

Add a **link** to your external style file in the head of your HTML document

```
</head>  
<body>  
<h1>Flash drives</h1>
```

```
<h2>Flash drive capacities</h2>
```

How to use CSS:

```
<html>  
<head>  
  
<title>Flash drive</title>
```

Insert **<link>** tag here

```
</head>  
<body>  
<h1>Flash drives</h1>
```

```
<h2>Flash drive capacities</h2>
```

How to use CSS:

```
<html>
<head>
<link rel="stylesheet" type="text/css" href="style1.css" />
<title>Flash drive</title>

</head>
<body>
<h1>Flash drives</h1>

<h2>Flash drive capacities</h2>
```

How to use CSS:

```
<html>
<head>
<link rel="stylesheet" type="text/css" href="style1.css" />
....
```

<link> element

- Defines relationship between two linked documents

How to use CSS:

```
<html>
<head>
<link rel="stylesheet" type="text/css" href="style1.css" />
....
```

<link> element

- An empty element that can only appear in the head
 - Can appear many times
- Only has attributes inside

How to use CSS:

```
<html>
<head>
<link rel="stylesheet" type="text/css" href="style1.css" />
....
```

- **rel** defines the type of relationship between two linked documents

alternate	next	previous
contents	stylesheet	chapter
section	help	index

How to use CSS:

```
<html>
<head>
<link rel="stylesheet" type="text/css" href="style1.css" />
....
```

- **rel** defines the type of relationship between two linked documents

alternate	next	previous
contents	stylesheet	chapter
section	help	index

How to use CSS:

```
<html>
<head>
<link rel="stylesheet" type="text/css" href="style1.css" />
....
```

- **type** indicates the nature of the document at the end of the link
- A MIME type

MIME types

- Multimedia Internet Mail Extensions
- Originally created to indicate what kind of file was attached to an email message...
- ...and how it could be transmitted and processed

```
text/css
text/javascript
image/gif
```

<http://www.iana.org/assignments/media-types/>

How to use CSS:

```
<html>
<head>
<link rel="stylesheet" type="text/css" href="style1.css" />
....
```

- **href** indicates the location/name of the stylesheet

<link> example

- Use the <link> **rel**, **type** and **href** attributes

```
<html>
<head>
<link rel="stylesheet" type="text/css" href="style1.css" />
<title>Flash drive</title>

<body>
<h1>Flash drives</h1>
```

Tip

Use the **rel** and **type** values as shown and change the **href** value to be the name of your external stylesheet

External Style sheets

- Simple text files (create in the same way as HTML files)
- Tradition indicates using **.css** as the extension (no requirement to do this)
- Write **style rules** in sequence as follows

Style rule syntax

```
selector { property1: value1;  
           property2: value2;  
           property3: value3;  
           ....  
           }
```

Style rule syntax

```
selector { property1: value1;  
           property2: value2;  
           property3: value3;  
           ....  
           }
```

selector identifies HTML element that the rule will be applied to..

Style rule syntax

selector { property1: value1;
property2: value2;
property3: value3;
....
}

Declaration block specifies property / value pairs that will be applied to the selector element

Semi-colon separates each pair

Syntax example

h1

```
{ color: green ;  
background-color: black  
}
```

Every h1 element....

... will have green text on a black background, e.g.

flash drives

Syntax

- White space and line returns are ignored

```
h1 { color: green ;background-color: black }
```

Tip

Better to place each property/value pair on its own line, a semi-colon at the end of every line

background-color property

This property sets the background color of an element

value	color name or transparent or inherit
initial value	transparent
applies to	all elements
inherited	no

color names - 16 built in names

Color Name	
Aqua	Aqua
Black	Black
Blue	Blue
Fuchsia	Fuchsia
Gray	Gray
Green	Green
Lime	Lime
Maroon	Maroon

Color Name	
Navy	Navy
Olive	Olive
Purple	Purple
Red	Red
Silver	Silver
Teal	Teal
White	White
Yellow	Yellow

- Other colours can be specified by a number

color property

This property describes the text colour of an element (often referred to as the foreground colour).

value	color
initial value	UA specific
applies to	all elements
inherited	yes

One of 16 built in color names

Depends on the User Agent*

.. more on this in a minute...

*Web browser or client

How Style sheets are applied

- html elements may inherit properties from containing html elements
- To determine if inheritance applies, look in the specification for the CSS property

```
<HTML>
<head>
  <title>
  Flash drive
  </title>
</head>
<body>
  <h1>
  Flash drives
  </h1>
  <h2>
  Flash drive capacities
  </h2>
  <p>
  Here is a picture of a 128MB flash drive which was popular at one time. Note the USB connector. 128MB is
  regarded as being rather small now.
  </p>
  
  <h2>
  Current capacities
  </h2>
  <p>
  Current standards are measured in Gigabytes (1GB, 2GB) with increasingly larger sized devices scheduled to
  appear soon.
  </p>
</body>
</html>
```

..which is inside the <html> element

..is inside the <body> element

This <h2> element..

```
<HTML>
<head>
  <title>
  Flash drive
  </title>
</head>
<body>
  <h1>
  Flash drives
  </h1>
  <h2>
  Flash drive capacities
  </h2>
  <p>
  Here is a picture of a 128MB flash drive which was popular at one time. Note the USB connector. 128MB is
  regarded as being rather small now.
  </p>
  
  <h2>
  Current capacities
  </h2>
  <p>
  Current standards are measured in Gigabytes (1GB, 2GB) with increasingly larger sized devices scheduled to
  appear soon.
  </p>
</body>
</html>
```

So if we say this will be red

..this will inherit the red

..as will this (unless we tell it not to)

font-family property

The value is a prioritized list of font family names and/or generic family names. Values are separated by a comma to indicate that they are alternatives

value	family-name, family-name, ...generic-family
initial value	UA specific
applies to	all elements
inherited	yes

font-family example

```
body { font-family: gill, helvetica,  
        sans-serif }
```

If **gill** is available use this

Otherwise if **helvetica** is available use this

Otherwise use any available **sans-serif** font

font-families

- CSS Fonts fall into 5 different generic-families

- **serif** (e.g., Times)
- **sans-serif** (e.g., Arial or Helvetica)
- *cursive* (e.g., Zapf-Chancery)
- *fantasy* (e.g., Western)
- **monospace** (e.g., Courier)

serif fonts

- serifs - A small decorative line added as embellishment to the basic form of a character



serif

sans-serif fonts

- sans-serifs - without the small decorative lines..



sans-serif

cursive fonts

- cursive fonts - looks like hand writing



cursive

fantasy fonts

- Exotic fonts

fantasy

monospace fonts

- Evenly spaced characters

monospace



font-family example

```
body { font-family: gill, helvetica,  
        sans-serif }
```

Make the last font in the list
one of the five generic font families (in
case any of the others are not available)

fonts common to PCs and Macs

Windows fonts / Mac fonts / Font family

Normal style
Arial, Arial, Helvetica, <i>sans-serif</i>
Arial Black, Arial Black, Gadget, sans-serif
Comic Sans MS, Comic Sans MS ⁵ , <i>cursive</i>
Courier New, Courier New, Courier ⁶ , <i>monospace</i>
Georgia ¹ , Georgia, <i>serif</i>
Impact, Impact⁵, Charcoal⁶, sans-serif
Lucida Console, Monaco ⁵ , <i>monospace</i>
Lucida Sans Unicode, Lucida Grande, <i>sans-serif</i>
Palatino Linotype, Book Antiqua ³ , Palatino ⁶ , <i>serif</i>
Tahoma, Geneva, <i>sans-serif</i>
Times New Roman, Times, <i>serif</i>
Trebuchet MS ¹ , Helvetica, <i>sans-serif</i>

fonts common to PCs and Macs

Times New Roman, Times, <i>serif</i>
Trebuchet MS ¹ , Helvetica, <i>sans-serif</i>
Verdana, Verdana, Geneva, <i>sans-serif</i>
Symbol, Symbol (Symbol ² , Symbol ²)
Webdings, Webdings (Webdings ² , Webdings ²)
Wingdings, Zapf Dingbats (Wingdings ² , Zapf Dingbats ²)
MS Sans Serif ⁴ , Geneva, <i>sans-serif</i>
MS Serif ⁴ , New York ⁶ , <i>serif</i>

<http://www.ampsoft.net/webdesign-1/WindowsMacFonts.html>

font-size property

This property describes the size of the font

value	absolute-size or relative-size or length or percentage or inherit
initial value	medium
applies to	all elements
inherited	yes

font-sizes

absolute-size possible values are:

xx-small or **x-small** or **small** or **medium** or **large** or **x-large** or **xx-large**

On a computer screen a scaling factor of 1.2 is suggested between adjacent indexes

(from the CSS 2 standard)

font-sizes

relative-size possible values are:

smaller or **larger**

compared to the parent element

font-sizes

percentage-size:

83% or **100%** or **120%** or **140%** or ...

A percentage value specifies an absolute font size relative to the parent element's font size.

text-align property

This property describes how text is aligned within the element.

value	left or right or center or justify
initial value	UA specific
applies to	block level elements*
inherited	yes

*more on this next week

Example CSS file used in class



```
body {  
  background-color: teal;  
  color: white;  
}
```

```
h1 {  
  background-color: silver;  
  color: navy;  
  font-family: Arial, sans-serif;  
  font-size: 200%;  
  text-align: center;  
}
```

```
h2 {  
  background-color: navy;  
  font-family: Arial, sans-serif;  
  text-align: right;  
}
```

```
p {  
  font-family: "Lucida Grande", sans-serif;  
}
```

3 ways to attach styles

- in-line
- internal style sheet
- external style sheet

3 ways to attach styles

- in-line
- internal style sheet
- external style sheet

in-line

- insert the style directly into an element start tag
- use the **style** attribute

`<p>Web browsers allow users to ask for, receive and display pages that have been formatted (typically) in a markup language such as HTML. </p>`

`<h2>Common browsers</h2>`

`<p>There are a number of browsers in use (from a variety of different sources) such as IE7, Firefox and Safari.</p>`

`<p>There are other browsers as well (Opera, Konquerer).</p>`

style attribute

- Uses

`style=" name-value pairs"`

e.g.

`style="font-size: 12pt; color: fuchsia"`

in-line

- To apply this style to two of the <p> elements

```
<p>Web browsers allow users to ask for, receive and display pages that have been formatted (typically) in a markup language such as HTML. </p>
```

```
<h2>Common browsers</h2>
```

```
<p>There are a number of browsers in use (from a variety of different sources) such as IE7, Firefox and Safari.</p>
```

```
<p>There are other browsers as well (Opera, Konquerer).</p>
```

in-line

- To apply this style to two of the <p> elements

```
<p style="font-size: 12pt; color: fuchsia" >Web browsers allow users to ask for, receive and display pages that have been formatted (typically) in a markup language such as HTML. </p>
```

```
<h2>Common browsers</h2>
```

```
<p>There are a number of browsers in use (from a variety of different sources) such as IE7, Firefox and Safari.</p>
```

```
<p>There are other browsers as well (Opera, Konquerer).</p>
```

in-line

- To apply this style to two of the <p> elements

```
<p style="font-size: 12pt; color: fuchsia" >Web browsers allow users to ask for, receive and display pages that have been formatted (typically) in a markup language such as HTML. </p>
```

```
<h2>Common browsers</h2>
```

```
<p style="font-size: 12pt; color: fuchsia" >There are a number of browsers in use (from a variety of different sources) such as IE7, Firefox and Safari.</p>
```

```
<p>There are other browsers as well (Opera, Konquerer).</p>
```

Advantages

- Simple to place a style/see where a style is being used
- Approach commonly seen with pre-css html editors

Disadvantages

- Lots of repetition
- No-reuse
- Mangles design in with content

3 ways to attach styles

- in-line
- internal style sheet
- external style sheet

3 ways to attach styles

- in-line
- internal style sheet
- external style sheet

internal

- insert the style into the head of the document
- use the **style** element



```
<head>  
<title>Browsers</title>  
</head>
```

```
<body>  
<p>Web browsers allow users to ask for, receive and display pages that have been formatted  
(typically) in a markup language such as HTML. </p>
```

```
<h2>Common browsers</h2>
```

```
<p>There are a number of browsers in use (from a variety of different sources) such as IE7,  
Firefox and Safari.</p>
```

style element

- Uses

```
<style type="text/css">  
...style information  
</style>
```

e.g.

```
<style type="text/css">  
p {font-size: 12pt; color: fuchsia }  
body { font-family: gill, helvetica, sans-serif }  
</style>
```

internal

insert the style element

```
<head>  
<title>Browsers</title>  
</head>  
  
<body>  
<p>Web browsers allow users to ask for, receive and display pages that have been formatted  
(typically) in a markup language such as HTML. </p>  
  
<h2>Common browsers</h2>  
  
<p>There are a number of browsers in use (from a variety of different sources) such as IE7,  
Firefox and Safari.</p>  
  
<p>There are other browsers as well (Opera, Konquerer).</p>
```

internal

insert the style element

```
<head>  
<style type="text/css">  
p {font-size: 12pt; color: fuchsia }  
body { font-family: gill, helvetica, sans-serif }  
</style>  
<title>Browsers</title>  
</head>  
  
<body>  
<p>Web browsers allow users to ask for, receive and display pages that have been formatted  
(typically) in a markup language such as HTML. </p>  
  
<h2>Common browsers</h2>  
  
<p>There are a number of browsers in use (from a variety of different sources) such as IE7,  
Firefox and Safari.</p>  
  
<p>There are other browsers as well (Opera, Konquerer).</p>
```

Advantages

- Browser has to only get 'one' page from the web server
- Style information directly associated with page

Disadvantages

- Lots of repetition if more than one page in a site (style has to be in each page)
- Maintenance of a large number of pages costly

Tip

Use internal style sheets during the design process, or where a page has a unique style

3 ways to attach styles

- in-line
- internal style sheet
- external style sheet

3 ways to attach styles

- in-line
- internal style sheet
- external style sheet

(this is the way we have seen)



external

- insert a link to the stylesheet in the head of the document

- use the **link** element

```
<head>  
<title>Browsers</title>  
</head>
```

```
<body>  
<p>Web browsers allow users to ask for, receive and display pages that have been formatted (typically) in a markup language such as HTML. </p>
```

```
<h2>Common browsers</h2>
```

```
<p>There are a number of browsers in use (from a variety of different sources) such as IE7, Firefox and Safari.</p>
```

external

- insert a link to the stylesheet in the head of the document

- use the **link** element

```
<head>  
<link rel="stylesheet" type="text/css" href="style1.css" />  
<title>Browsers</title>  
</head>
```

```
<body>  
<p>Web browsers allow users to ask for, receive and display pages that have been formatted (typically) in a markup language such as HTML. </p>
```

```
<h2>Common browsers</h2>
```

Advantages

- Style separated from content
- Great for maintenance of large site designs

Disadvantages

- Two retrievals required (one for the HTML, one for the style sheet)

External style sheets are the preferred mechanism for most sites nowadays

3 ways to declare styles

- tag style
- id style
- class style

3 ways to declare styles

- tag style
 - id style
 - class style
- (this is the way we have seen)
- 

```
<html>
<head>
<link rel="stylesheet" type="text/css" href="cssforlecture1.css" />
<title>Browsers</title>
</head>

<body>
<h1>Web browsers</h1>
<h2>What they do</h2>

<p>Web browsers allow users to ask for, receive and display pages that have been formatted
(typically) in a <a href="http://www.w3.org/Markup/">markup language</a> such as
HTML.  </p>

<h2>Common browsers</h2>

<p>There are a number of browsers in use (from a variety of different sources):</p>
<ul>
<li>Microsofts Internet Explorer 7</li>
<li>Mozillas Firefox</li>
<li>Apples Safari</li>
</ul>
<p>There are other browsers as well (Opera, Konquerer).</p>
</body>
</html>
```

h2 { color: green ;
background-color: black
}

3 ways to declare styles

- tag style
- id style
- class style

3 ways to declare styles

- tag style
- id style
- class style

id style

- Uses the **id** attribute
- Used to assign a **unique** name to any element

```
<p id="introduction">Web browsers allow users to ask for, receive and display pages that have been formatted (typically) in a markup language such as HTML. </p>
```

```
<h2>Common browsers</h2>
```

```
<p id="explanation">There are a number of browsers in use (from a variety of different sources) such as IE7, Firefox and Safari.</p>
```

```
<p>There are other browsers as well (Opera, Konquerer).</p>
```

id style

```
#introduction {  
  color: blue;  
  background-color: yellow;  
}
```

```
#explanation {  
  color: black;  
  background-color: yellow;  
}
```

- Use the **#** symbol to indicate an **id** name in the style sheet

Watch-out

ids in a single document **MUST** be unique; try to use single short words - no spaces are allowed

id style

- Watch out for **id** mania

```
<html>
<head>
<title>Browsers</title>
</head>
```

id style

```
<body>
<h1 id="title">Web browsers</h1>
<h2 id="subtitle">What they do</h2>
```

- Far too many ids

```
<p id="myfirstparagraph">Web browsers allow users to ask for, receive and display pages that have been formatted (typically) in a <a href="http://www.w3.org/Markup/">markup language</a> such as HTML.  </p>
```

```
<h2 id="anothersubtitle">Common browsers</h2>
```

```
<p id="mythirdparagraph">There are a number of sources:</p>
<ul id="myorderedlist">
<li>Microsofts Internet Explorer 7</li>
<li>Mozillas Firefox</li>
<li>Apples Safari</li>
</ul>
<p id="myforthparagraph">There are other browsers as well (Opera, Konquerer).</p>
</body>
```

- Poorly chosen names as well - try to avoid design led names - focus on content context

id style

- ids work best with div and span tags to structure a document - more on this later

3 ways to declare styles

- tag style
- id style
- class style

3 ways to declare styles

- tag style
- id style
- class style

class style

- a **class** is a group of elements that will share a common style

Probably best explained by example...

class style

Web browsers

What they do

Web browsers allow users to ask for, receive and display pages that have been formatted (typically) in a

markup language such as HTML.



Common browsers

There are a number of browsers in use (from a variety of different sources):

- Microsoft's Internet Explorer 7
- Mozilla's Firefox
- Apple's Safari

There are other browsers as well (Opera, Konquerer).

We want this <h2> element to be blue

We also want this <p> element to have the same style

class style

- Uses the **class** attribute
- Used to assign a **class** name to any element

```
<h2 class="bluestyle" >What they do</h2>
```

```
<p class="bluestyle">Web browsers are the use on the display pages to handle display page and  
(usually) for a browser to help the user mark the page as "picture.jpg". </p>  
<h2>Common browsers</h2>  
<h2>Common browsers</h2>  
<p>There are a number of browsers in use (from a variety of different sources) such as ...  
<p>There are a number of browsers in use (from a variety of different sources) such as ...
```

class style

```
.bluestyle {  
  color: blue;  
}
```

```
h3.bluestyle {  
  color: blue;  
  size: 120%;  
}
```

- Use the **.** symbol to indicate a **class** name in the style sheet

Cascading Style Sheets



Boxes

Start with some HTML in a browser

Web browsers

What they do

Web browsers allow users to ask for, receive and display pages that have been formatted (typically) in

a markup language such as HTML.

Common browsers

There are a number of browsers in use (from a variety of different sources):

- Microsofts Internet Explorer 7
- Mozilla's Firefox
- Apples Safari

There are other browsers as well (Opera, Konquerer).

h1
h2

img

anchor (hyperlink)

ul / li

```
<html>  
<head>  
<title>Browsers</title>  
</head>
```

```
<body>  
<h1>Web browsers</h1>  
<h2>What they do</h2>
```

```
<p>Web browsers allow users to ask for, receive and display pages that have been formatted  
(typically) in a http://www.w3.org/Markup/ markup language such as  
HTML.  </p>
```

```
<h2>Common browsers</h2>
```

```
<p>There are a number of browsers in use (from a variety of different sources):</p>
```

```
<ul>  
<li>Microsofts Internet Explorer 7</li>  
<li>Mozilla's Firefox</li>  
<li>Apples Safari</li>  
</ul>
```

```
<p>There are other browsers as well (Opera, Konquerer).</p>  
</body>  
</html>
```

Source

Blocks

- The placement of elements creates a logical structure in the document
- Elements cause the document to be subdivided into blocks

```
<html>
<head>
<title>Browsers</title>
</head>
```

Initial containing block

```
<body>
<h1>Web browsers</h1>
<h2>What they do</h2>
```

```
<p>Web browsers allow users to ask for, receive and display pages that have been formatted
(typically) in a <a href="http://www3.org/Markup/">markup language</a> such as
HTML.  </p>
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<h2>Common browsers</h2>
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<p>There are other browsers as well (Opera, Konquerer).</p>
```

```
</body>
</html>
```

```
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<head>
<title>Browsers</title>
</head>
```

Initial containing block

```
<body>
<h1>Web browsers</h1>
<h2>What they do</h2>
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</ul>
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```
<p>There are other browsers as well (Opera, Konquerer).</p>
```

```
</body>
</html>
```

```
<html>
<head>
<title>Browsers</title>
</head>
```

body block 'inside' the outer block

```
<body>
<h1>Web browsers</h1>
<h2>What they do</h2>
```

```
<p>Web browsers allow users to ask for, receive and display pages that have been formatted
(typically) in a <a href="http://www3.org/Markup/">markup language</a> such as
HTML.  </p>
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<h2>Common browsers</h2>
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</body>
</html>
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<title>Browsers</title>
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body block 'inside' the outer block

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<li>Microsofts Internet Explorer 7</li>
<li>Mozillas Firefox</li>
<li>Apples Safari</li>
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```
</ul>
<p>There are other browsers as well (Opera, Konquerer).</p>
```

```
</body>
</html>
```

```
<html>
<head>
<title>Browsers</title>
</head>
```

headings / paragraphs

```
<body>
<h1>Web browsers</h1>
<h2>What they do</h2>
```

```
<p>Web browsers allow users to ask for, receive and display pages that have been formatted (typically) in a <a href="http://www.w3.org/Markup/">markup language</a> such as HTML.  </p>
```

```
<h2>Common browsers</h2>
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<p>There are a number of browsers in use (from a variety of different sources):</p>
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<li>Microsofts Internet Explorer 7</li>
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<li>Apples Safari</li>
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```
</ul>
<p>There are other browsers as well (Opera, Konquerer).</p>
```

```
</body>
</html>
```

```
<html>
<head>
<title>Browsers</title>
</head>
```

headings / paragraphs

```
<body>
<h1>Web browsers</h1>
<h2>What they do</h2>
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<p>Web browsers allow users to ask for, receive and display pages that have been formatted (typically) in a <a href="http://www.w3.org/Markup/">markup language</a> such as HTML.  </p>
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<li>Apples Safari</li>
```

```
</ul>
<p>There are other browsers as well (Opera, Konquerer).</p>
```

```
</body>
</html>
```

```
<html>
<head>
<title>Browsers</title>
</head>
```

anchor

```
<body>
<h1>Web browsers</h1>
<h2>What they do</h2>
```

```
<p>Web browsers allow users to ask for, receive and display pages that have been formatted (typically) in a markup language such as HTML. 
```

```
<h2>Common browsers</h2>
```

```
<p>There are a number of browsers in use (from a variety of different sources):</p>
```

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<ul>
<li>Microsofts Internet Explorer 7</li>
<li>Mozillas Firefox</li>
<li>Apples Safari</li>
</ul>
```

```
<p>There are other browsers as well (Opera, Konquerer).</p>
```

```
</body>
</html>
```

```
<html>
<head>
<title>Browsers</title>
</head>
```

image

```
<body>
<h1>Web browsers</h1>
<h2>What they do</h2>
```

```
<p>Web browsers allow users to ask for, receive and display pages that have been formatted (typically) in a markup language such as HTML. 
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```
<h2>Common browsers</h2>
```

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<p>There are a number of browsers in use (from a variety of different sources):</p>
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<li>Apples Safari</li>
</ul>
```

```
<p>There are other browsers as well (Opera, Konquerer).</p>
```

```
</body>
</html>
```

```
<html>
<head>
<title>Browsers</title>
</head>
```

unordered list

```
<body>
<h1>Web browsers</h1>
<h2>What they do</h2>
```

```
<p>Web browsers allow users to ask for, receive and display pages that have been formatted (typically) in a markup language such as HTML. 
```

```
<h2>Common browsers</h2>
```

```
<p>There are a number of browsers in use (from a variety of different sources):</p>
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</ul>
```

```
<p>There are other browsers as well (Opera, Konquerer).</p>
```

```
</body>
</html>
```

```
<html>
<head>
<title>Browsers</title>
</head>
```

list items

```
<body>
<h1>Web browsers</h1>
<h2>What they do</h2>
```

```
<p>Web browsers allow users to ask for, receive and display pages that have been formatted (typically) in a <a href="http://www.w3.org/Markup/">markup language</a> such as HTML. </p>
```

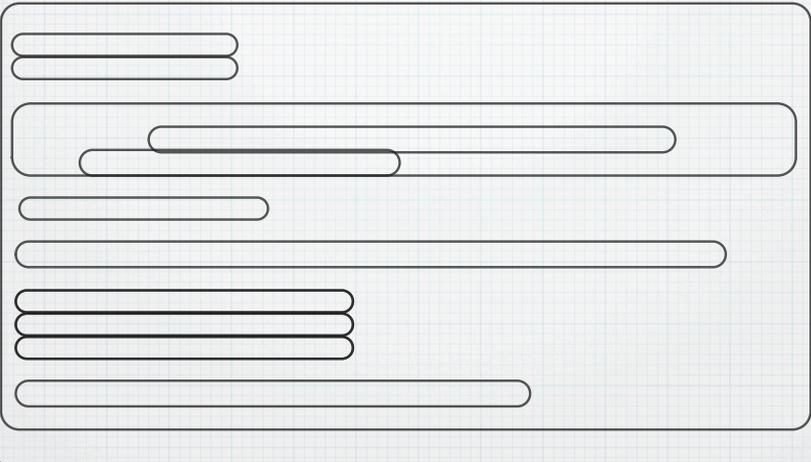
```
<h2>Common browsers</h2>
```

```
<p>There are a number of browsers in use (from a variety of different sources):</p>
```

```
<ul>
<li>Microsofts Internet Explorer 7</li>
<li>Mozillas Firefox</li>
<li>Apples Safari</li>
```

```
</ul>
<p>There are other browsers as well (Opera, Konquerer).</p>
</body>
</html>
```

Blocks within blocks



Blocks

- Two common types of blocks

Block level elements

In-line block elements

So what's the difference?

Block level elements

- Are laid out vertically inside the containing block

Web browsers

What they do

Web browsers allow users to ask for, receive and display pages that have been formatted (typically) in

a markup language such as HTML.



p

Common browsers

There are a number of browsers in use (from a variety of different sources):

- Microsofts Internet Explorer 7
- Mozilla's Firefox
- Apples Safari

There are other browsers as well (Opera, Konquerer).

h1
h2

h2

p

in-line elements

- are laid out horizontally in the containing block

Web browsers

What they do

Web browsers allow users to ask for, receive and display pages that have been formatted (typically) in

a markup language such as HTML.



anchor

img

Common browsers

There are a number of browsers in use (from a variety of different sources):

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- Apples Safari

There are other browsers as well (Opera, Konquerer).

Defaults

Block level elements

In-line elements

p

h1

img

a

h2

h3 ...

strong

emph

ol

ul ...

li

Note

Lists / List items use a different display style for its elements, called list-item. For the moment, think of ol/ul/li as being block

So what can we do with blocks?

- Change the blocks nature **display property**
- Float them **float property**
- Clear space next to them **clear property**
- Treat them as boxes and change the visual aspects

the CSS box model

display property

This property can be used to change how an element block is situated

value	inline or block or none or inherit*
initial value	element specific / inline
applies to	all elements
inherited	no (unless value indicates it)

***Other values are available**

Demo

Empty stylesheet

```
h1 {  
}  
img {  
}  
a {  
}
```

Web browsers

What they do

Web browsers allow users to ask for, receive and display pages that have been formatted (typically) in

a [markup language](#) such as HTML.



Common browsers

There are a number of browsers in use (from a variety of different sources):

- Microsoft's Internet Explorer 7
- Mozilla's Firefox
- Apple's Safari

There are other browsers as well (Opera, Konqueror).

Demo - change h1 to none

stylesheet

```
h1 {  
  display: none;  
}  
  
img {  
  
}  
  
a {  
  
}
```

Web browsers

What they do

Web browsers allow users to ask for, receive and display pages that have been formatted (typically) in a

[markup language](#) such as HTML.



Common browsers

There are a number of browsers in use (from a variety of different sources):

- Microsofts Internet Explorer 7
- Mozilla's Firefox
- Apples Safari

There are other browsers as well (Opera, Konquerer).

Demo - change img to none

stylesheet

```
h1 {  
  display: none;  
}  
  
img {  
  display: none;  
}  
  
a {  
  
}
```

What they do

Web browsers allow users to ask for, receive and display pages that have been formatted (typically) in a [markup language](#) such as HTML.

Common browsers

There are a number of browsers in use (from a variety of different sources):

- Microsofts Internet Explorer 7
- Mozilla's Firefox
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There are other browsers as well (Opera, Konquerer).

- Apples Safari

There are other browsers as well (Opera, Konquerer).

Demo - change a to block

stylesheet

```
h1 {  
  display: none;  
}  
  
img {  
  display: none;  
}  
  
a {  
  display: block;  
}
```

What they do

Web browsers allow users to ask for, receive and display pages that have been formatted (typically) in a [markup language](#) such as HTML.

Common browsers

There are a number of browsers in use (from a variety of different sources):

- Microsofts Internet Explorer 7
- Mozilla's Firefox
- Apples Safari

There are other browsers as well (Opera, Konquerer).

float property

- This property 'floats' a block **left or right**
- The block floats to the side until its edge touches another block

float property

Any in-line element floated becomes a block style element

value	left or right or none or inherit
initial value	none
applies to	all but positioned elements
inherited	no (unless value indicates it)

Demo

Empty stylesheet

```
h1 {  
}  
img {  
}  
a {  
}
```

Web browsers

What they do

Web browsers allow users to ask for, receive and display pages that have been formatted (typically) in

a [markup language](#) such as HTML.



Common browsers

There are a number of browsers in use (from a variety of different sources):

- Microsoft's Internet Explorer 7
- Mozilla's Firefox
- Apple's Safari

There are other browsers as well (Opera, Konqueror).

Demo - floating to the right

stylesheet

```
h1 {  
}  
img {  
  float: right;  
}  
a {  
}
```

Web browsers

What they do

Web browsers allow users to ask for, receive and display pages that have been formatted (typically) in a [markup language](#) such as HTML.



Common browsers

There are a number of browsers in use (from a variety of different sources):

- Microsoft's Internet Explorer 7
- Mozilla's Firefox
- Apple's Safari

There are other browsers as well (Opera, Konquerer).

Demo - floating to the left

stylesheet

```
h1 {  
}  
img {  
  float: left;  
}  
a {  
}
```

Web browsers

What they do

Web browsers allow users to ask for, receive and display pages that have been formatted (typically) in a [markup language](#) such as HTML.



Common browsers

There are a number of browsers in use (from a variety of different sources):

- Microsoft's Internet Explorer 7
- Mozilla's Firefox
- Apple's Safari

There are other browsers as well (Opera, Konquerer).

clear property

- This property clears space on a blocks left or right

value	left or right or none or inherit or both
initial value	none
applies to	block-level elements
inherited	no (unless value indicates it)

Demo

Empty stylesheet

```
h1 {  
}  
img {  
}  
a {  
}
```

Web browsers

What they do

Web browsers allow users to ask for, receive and display pages that have been formatted (typically) in a [markup language](#) such as HTML.



Common browsers

There are a number of browsers in use (from a variety of different sources):

- Microsoft's Internet Explorer 7
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- Apple's Safari

There are other browsers as well (Opera, Konquerer).

Demo - floating the image to the right

stylesheet

```
h1 {  
}  
img {  
  float: right;  
}  
h2 {  
}
```

Web browsers

What they do

Web browsers allow users to ask for, receive and display pages that have been formatted (typically) in a [markup language](#) such as HTML.

Common browsers

There are a number of browsers in use (from a variety of different sources):

- Microsoft's Internet Explorer 7
- Mozilla's Firefox
- Apple's Safari

There are other browsers as well (Opera, Konquerer).



Demo - now to clear the h2 heading

stylesheet

```
h1 {  
}  
img {  
  float: right;  
}  
h2 {  
  clear: right;  
}
```

Web browsers

What they do

Web browsers allow users to ask for, receive and display pages that have been formatted (typically) in a [markup language](#) such as HTML.

Common browsers

There are a number of browsers in use (from a variety of different sources):

- Microsoft's Internet Explorer 7
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There are other browsers as well (Opera, Konquerer).



CSS box model

- **Blocks** can be styled as **boxes**
- **Boxes** have properties such as

height margin
border width padding

CSS box model



CSS box model



border

- Can set the border-style

none
hidden
dotted
dashed
solid
double
groove
ridge
inset
outset

- Can set the border-width

px
pt
em

1pt=1/72inch
em=based of the
width of an 'M'

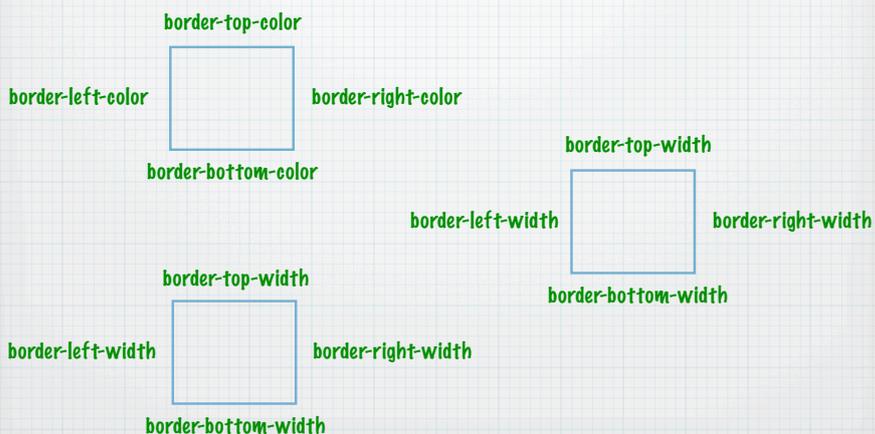
border

- Can set the border-color

Standard colour
technique using 24bit
palette

border

- Can set the values individually for the 4 sides



Demo

Empty stylesheet

```
h1 {  
}  
h2 {  
}  
a {  
}
```

Web browsers

What they do

Web browsers allow users to ask for, receive and display pages that have been formatted (typically) in

a [markup language](#) such as HTML.



Common browsers

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- Apples Safari

There are other browsers as well (Opera, Konquerer).

Demo

stylesheet

```
h1 {  
}  
h2 {  
border-style: solid;  
}  
a {  
}
```

Web browsers

What they do

Web browsers allow users to ask for, receive and display pages that have been formatted (typically) in

a [markup language](#) such as HTML.



Common browsers

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- Microsofts Internet Explorer 7
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- Apples Safari

There are other browsers as well (Opera, Konquerer).

Demo

stylesheet

```
h1 {  
}  
h2 {  
border-style: dotted;  
}  
a {  
}
```

Web browsers

What they do

Web browsers allow users to ask for, receive and display pages that have been formatted (typically) in

a [markup language](#) such as HTML.



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There are a number of browsers in use (from a variety of different sources):

- Microsofts Internet Explorer 7
- Mozilla's Firefox
- Apples Safari

There are other browsers as well (Opera, Konquerer).

Demo

stylesheet

```
h1 {
```

```
h2 {
```

```
border-style: dashed;
```

```
a {
```

Web browsers

What they do

Web browsers allow users to ask for, receive and display pages that have been formatted (typically) in



a [markup language](#) such as HTML.

Common browsers

There are a number of browsers in use (from a variety of different sources):

- Microsofts Internet Explorer 7
- Mozilla's Firefox
- Apples Safari

There are other browsers as well (Opera, Konquerer).

Demo

stylesheet

```
h1 {
```

```
h2 {
```

```
border-style: solid;
```

```
border-color:red;
```

```
a {
```

Web browsers

What they do

Web browsers allow users to ask for, receive and display pages that have been formatted (typically) in



a [markup language](#) such as HTML.

Common browsers

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- Microsofts Internet Explorer 7
- Mozilla's Firefox
- Apples Safari

There are other browsers as well (Opera, Konquerer).

Demo

stylesheet

```
h1 {
```

```
h2 {
```

```
border-style: solid;
```

```
border-color:red;
```

```
border-width:10px;
```

```
a {
```

Web browsers

What they do

Web browsers allow users to ask for, receive and display pages that have been formatted (typically)



in a [markup language](#) such as HTML.

Common browsers

There are a number of browsers in use (from a variety of different sources):

- Microsofts Internet Explorer 7
- Mozilla's Firefox
- Apples Safari

width

1px=1 pixel

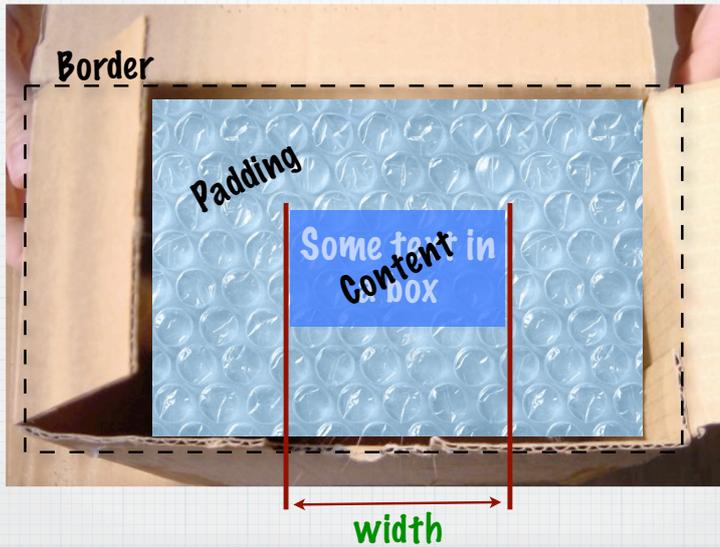
1pt=1/72inch

- Can set the element **width**

em=current font size of current element - used to be based on the width of the letter 'M'

% as a percentage of the containing block

CSS box model



Demo

stylesheet

```
h1 {  
  }  
h2 {  
  border-style: solid;  
  width:50%;  
  }  
a {  
  }
```

Web browsers

What they do

Web browsers allow users to ask for, receive and display pages that have been formatted (typically) in a



markup language such as HTML.

Common browsers

There are a number of browsers in use (from a variety of different sources):

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- Mozilla's Firefox
- Apple's Safari

There are other browsers as well (Opera, Konquerer).

padding

1px=1 pixel

1pt=1/72inch

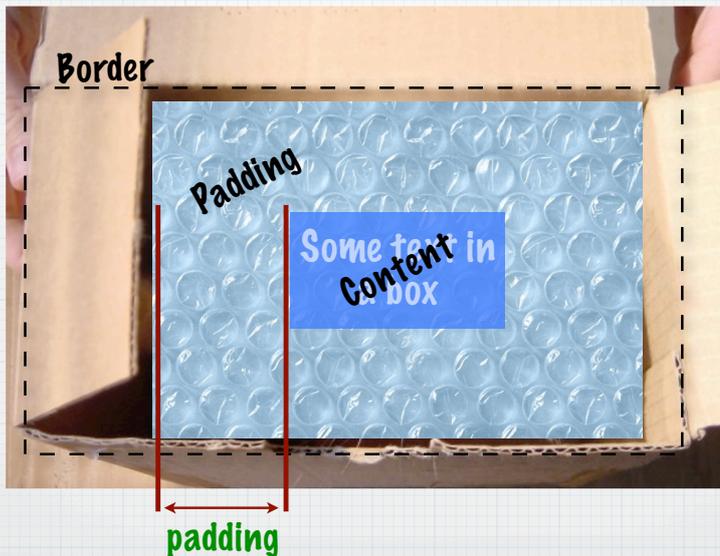
- Can set the elements padding size

em=current font size of current element - used to be based on the width of the letter 'M'

% as a percentage of the containing block

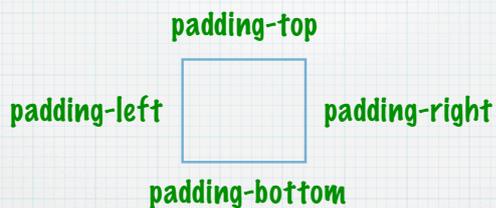
- Padding sits between the content and the border

CSS box model



padding

- Can set the padding individually for the 4 sides



Demo

stylesheet

```
h1 {  
  }  
h2 {  
  border-style: solid;  
  width: 50%;  
  padding: 10px;  
  }  
a {  
  }  
}
```

Web browsers

What they do

Web browsers allow users to ask for, receive and display pages that have been formatted (typically) in a

[markup language](#) such as HTML.



Common browsers

There are a number of browsers in use (from a variety of different sources):

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- Mozilla's Firefox
- Apples Safari

There are other browsers as well (Opera, Konquerer).

margin

- Can set the size of the space around an element

1px=1 pixel

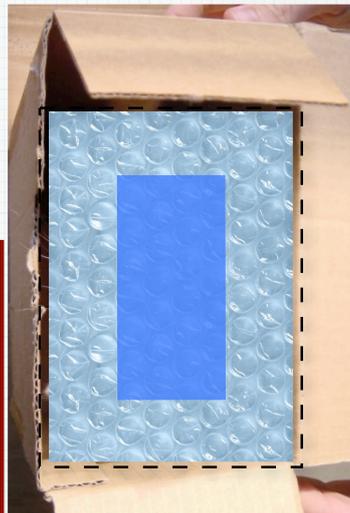
1pt=1/72inch

em=current font size of current element - used to be based on the width of the letter 'M'

% as a percentage of the containing block

- Special rules are used to calculate the gap between two horizontal elements with margins

CSS box model



margin

```
h1 {  
}
```

```
h2 {  
border-style: solid;  
width: 50%;  
padding: 10px;  
margin: 20px;  
}
```

```
a {  
}
```

Web browsers

What they do

Web browsers allow users to ask for, receive and display pages that have been formatted (typically) in a



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Common browsers

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