

*:96 Overheads

Part 6e: Cascading Style Sheets (CSS)

More about this course about Internet application protocols can be found at URL:

<http://www.dsv.su.se/jpalme/internet-course/Int-app-prot-kurs.html>

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Relative and absolute font sizes

Before we got style sheets, HTML only allowed relative font sizes. A user could specify `` where the following values of "n" were allowed:

Non-signed value	Signed value	Example of possible rendering, for a Windows user with 12 pt as default font size using the Arial font (50 % larger here)
1	-2	The quick brown fox
2	-1	The quick brown fox
3	0	The quick brown fox
4	+1	The quick brown fox
5	+2	The quick brown fox
6	+3	The quick brown fox
7	+4	The quick brown

Rendering

Here is one **word**, which is boldfaced and with a smaller font.

Old notation:

Here is one `word` which is boldfaced and with a smaller font.

New notation:

```
<HEAD>
<STYLE type="text/css">
SPAN.xyz { font-size:10pt; font-style: bold }
</STYLE>
</HEAD><BODY>
```

Here is one `word` which is boldfaced and with a smaller font.

Note: `{ }` surrounds a group of properties for a certain style.

With CSS, absolute fonts became possible

With CSS, absolute fonts became possible, for example

```
<style type="text/css"> <!--
.arial8 { font-family: Arial; font-size: 8pt}
--> </style>
```

Absolute font size	Windows rendering (96 pixels/inch)	Macintosh rendering (72 pixels/inch)
8 pt	Arial 8 pt	Arial 8pt
10 pt	Arial 10 pt	Arial 10 pt
12 pt	Arial 12 pt	Arial 12 pt

Note: The pictures have been increased 50 % (with corresponding reduced resolution) to become more readable on an overhead screen.

Command links should not change colour

Below, a command bar is produced using a HTML table (saves download time compared to using graphical buttons). But the links in the command bar should not change colour when they have been visited, like the links in the text below the command bar.

Visited and unvisited links have the same colour:

Hem	Personligt	Logga ut	Web4Groups	Skriva brev	Hjälp
---------------------	----------------------------	--------------------------	----------------------------	-----------------------------	-----------------------

Visited and unvisited links have different colour:

Hem	Personligt	Logga ut	Web4Groups	Skriva brev	Hjälp
---------------------	----------------------------	--------------------------	----------------------------	-----------------------------	-----------------------

Archives of this list are available by anonymous ftp from [FTP://SEGATE.SUNET.SE](ftp://segate.sunet.se). You can also browse the archives by http from [HTTP://segate.sunet.se/archives/mailnews-1.html](http://segate.sunet.se/archives/mailnews-1.html). The FTP archives are better if you want to download all messages, the HTTP archives are better if you want to browse and find a particular message only.

How to stop links changing colour when visited?

Old method: only works for all links in the whole document:

```
<BODY BGCOLOR="#FFFFFF" LINK="#003399" VLINK="#003399"
ALINK="#003399">
```

Using style sheets (the HTML below is abbreviated):

```
<HTML><HEAD>
  <TITLE>CSS and link colour</TITLE>
  <STYLE type="text/css">
    A.allblue:visited { color: #003399 }
    A.allblue:link { color: #003399 }
  </STYLE></HEAD><BODY BGCOLOR="#FFFFFF">
<FONT SIZE=5>Visited and unvisited links have the same colour:
<TABLE BORDER="1" CELLPADDING="4" CELLSPACING="1" WIDTH="500">
  <TR><TD BGCOLOR="#FFCC00">
    <A class="allblue" HREF="hem.html"
      target="subwindow">
    <FONT FACE="Geneva, Helvetica" SIZE=3>
    <B>Hem</A></TD></TABLE>
<FONT SIZE=5>Archives of this list are available from
<A HREF="//SEGATE.SUNET.SE/">FTP://SEGATE.SUNET.SE
</A>.You can also browse the archives by http from
```

This link will not change colour

This link will change colour

Using style sheets to avoid too long rows

For good readability, text rows should contain about 40-60 characters per line. But if the user has set his browser to a wide window (which the user needs when viewing other web pages) ordinary text will be too wide.

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This shows Netscape rendering of text shows the same text in three ways:

1. Ordinary plain text with a wide browser window
2. Using a table with
`<TD WIDTH=400>`
3. Using style sheets with
`<P class=`

Using style sheets to avoid too long rows

```
<HTML><HEAD>
  <TITLE>CSS and link colour</TITLE>
  <STYLE type="text/css">
    P.narrow { width: 400 }
  </STYLE>
</HEAD><BODY BGCOLOR="#FFFFFF">
<TABLE BORDER="0" CELLPADDING="8" CELLSPACING="0"
WIDTH="400"><TR><TD>
Iamque fretum Minyae Pagasaea puppe secabant,
perpetuaque trahens inopem sub nocte senectam.
</TR></TABLE>
<P class="narrow">
Iamque fretum Minyae Pagasaea puppe secabant,
perpetuaque trahens inopem sub nocte senectam.</p>
```

Using style sheets for absolute positioning

(may not work with all browsers)



Back



A flower to CSS

```
<DIV class="backimg"><IMG SRC="Arrow.GIF" WIDTH="45"
HEIGHT="31" ALIGN="BOTTOM" BORDER="0" ALT=" &lt;= "></DIV>
<DIV class="backtext"><FONT SIZE=5>Back</FONT></DIV>
```

```
<DIV class="saveimg"><IMG SRC="disk.gif" WIDTH="32"
HEIGHT="32" ALIGN="BOTTOM" BORDER="0" ALT="Disk"></DIV>
<DIV class="savetext"><FONT SIZE=5>Save on Disk</FONT></DIV>
```

```
<DIV class="flowerimg"><IMG SRC="flower1.gif" WIDTH="28"
HEIGHT="29" ALIGN="BOTTOM" BORDER="0" ALT="Flower">
<FONT SIZE=5>A flower to CSS</FONT></DIV>
```

```
</BODY></HTML>
```

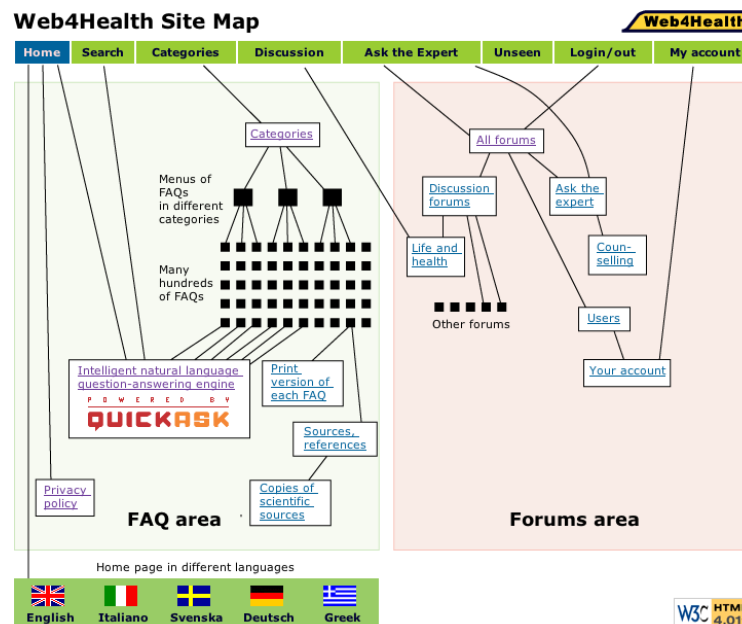
Using style sheets for absolute positioning

```
<HTML><HEAD><TITLE>CSS position command</TITLE>
<STYLE type="text/css">
div.dsvtext {position: absolute; left: 135px; top: 10px;
right:auto; bottom: auto; width:150 }
div.backimg {position: absolute; left: 300px; top: 60 px;
right:auto; bottom: auto }
div.backtext {position: absolute; left: 305px; top: 95 px;
width:100 px; bottom: auto }
div.saveimg {position: absolute; left: 40px; top: 130px;
right:auto; bottom: auto }
div.savetext {position: absolute; left: 20px; top: 130 px;
width:100 px; bottom: auto }
div.flowerimg {position: absolute; left: 150px; top:
150px; right:auto; bottom: auto }
</STYLE>
</HEAD><BODY BGCOLOR="#FFFFFF">
```

```
<IMG SRC="DSV-logo123x57.gif" WIDTH="123" HEIGHT="57"
ALIGN="BOTTOM" BORDER="0" ALT="DSV-logo">
<DIV class="dsvtext"><FONT SIZE=5>Department of
Computer and Systems Sciences</FONT></DIV>
```

continued

Web page with absolute positioning: Site map



Extract of CSS used in the site-map example:

```
.text {
font-family: verdana,geneva,helvetica,arial,non-serif;
font-size: 11px
}
#categories { position: fixed; left: 241px; top: 123px
}
```

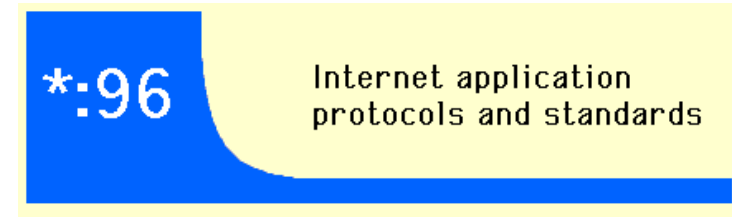
Extract of HTML used in the site-map example:

```
<div class="text" id="categories">
  <a href=
    "/en/answers/project-all-menus.htm">Categories</a>
</div>
```

Style sheet "position" tag

normal	normal flow
relative	normal flow + offset
absolute	absolute in relation to containing block
fixed	absolute in relation to web page
inherited	taken from parent object

Using tables for exact positioning



```
<TABLE BORDER=0 CELLPADDING=0 CELLSPACING=0>
  <TR><TD ROWSPAN=2 BGCOLOR="#0066FF">
    <CENTER>
      <FONT SIZE=7 COLOR="#FFFFFF"><B>*:96</B></FONT>
      <BR>&nbsp;</TD>
    <TD WIDTH=73 HEIGHT=100 BGCOLOR="#0066FF">
      <IMG SRC="exam-98-05a.gif" WIDTH=73 HEIGHT=100>
    </TD>
    <TD WIDTH=254 HEIGHT=100 BGCOLOR="#FFFFCC">
      <FONT SIZE=5><B>Internet application<BR>
        protocols and standards</B></FONT>
    </TD>
  </TR><TR>
    <TD HEIGHT=14 COLSPAN=2 BGCOLOR="#3366FF">&nbsp;</TD>
  </TR>
</TABLE>
```

Selectors in CSS

.big { font-size: 24px }	<p class=big>, <div class=big>
p.big { font-size: 24px }	<p class=big>
div.big { font-size: 24px }	<div class=big>
p#big { font-size: 24px }	<p id=big>
a.dynamic:hover { color: red ; font-weight: bold}	<a class=dynamic ...
a.dynamic:link { color: blue ; font-weight: normal}	
a.dynamic:visited { color: red ; font-weight: normal}	
h1 em {color: red }	<h1>This headline is very important</h1>

There are many more selector variants in the CSS recommendation.

Cascading in Cascading Style Sheets

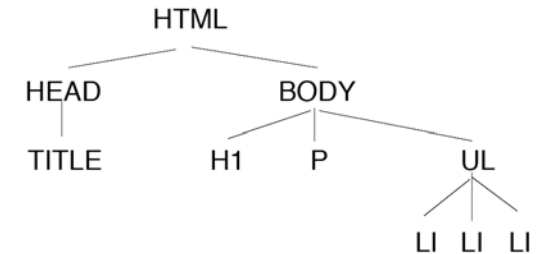
Style sheets may be specified by

- (a) Author
- (b) Reader, specially for this document
- (c) Defaults in the browser, set at delivery or modified by the user

How, then, should conflicting style sheet information be combined?

Cascading in Cascading Style Sheets

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.0//EN">
<HTML>
<TITLE>My home page</TITLE>
<BODY>
<H1>My home page</H1>
<P>Welcome to my home page! Let me tell you about my favorite
composers:
<UL>
<LI> Elvis Costello
<LI> Johannes Brahms
<LI> Georges Brassens
</UL>
</BODY>
</HTML>
```



Measurements and inheritance:

cm, mm, in		h1 {padding-top: 5mm }
pixels ¹	px	h1 { font-size: 12px }
points = inch/72	pt	p { word-spacing: 20pt }
relative to inherited size	em	body {font-size: 16px } h1 {margin: 0,5em }
	ex	h1 {margin-left: 0,5ex }
	%	h1 {line-height: 120% }

Cascading order (section 6.3.1 in the CSS recommendation)

To find the value for an element/property combination, user agents must apply the following algorithm:

1. Find all declarations that apply to the element/property in question. Declarations apply if the associated selector matches [p. 43] the element in question. If no declarations apply, terminate the algorithm.
2. Sort the declarations by explicit weight: declarations marked 'important' carry more weight than unmarked (normal) declarations. See the section on 'important' [p. 60] rules for more information.
3. **Sort by origin: the author's style sheets override the user's style sheets which override the default style sheet.** An imported style sheet has the same origin as the style sheet from which it is imported.
4. Sort by specificity of selector: more specific selectors will override more general ones. The definition and calculation of specificity is object-language dependent. Pseudo-

elements and pseudo-classes are counted as normal elements and classes, respectively.

5. Sort by order specified: if two rules have the same weight, the latter specified wins. Rules in imported style sheets are considered to be before any rules in the style sheet itself.

The search for the property value must be terminated when any of the above steps yields a rule that has a higher weight than the other rules that apply to the same element/property combination.

This strategy gives author's style sheets considerably higher weight than those of the reader. It is therefore important that the User agent gives the user the ability to turn off the influence of a certain style sheet, e.g., through a pull-down menu.

¹ Omvandlas vid utskrift på papper antagande 96 pixels/inch

Linking to external style sheet

HTML example:

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0
Transitional//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-
transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
  <link href="http://web4health.info/web4health-v2.css"
rel="stylesheet" type="text/css">
  <link href="http://web4health.info/site-map.css"
rel="stylesheet"
type="text/css">
</head>
```

XML example:

```
<?xml-stylesheet type="text/css" href="bach.css"?>
<ARTICLE>
  <HEADLINE>Fredrick the Great meets Bach</HEADLINE>
  <AUTHOR>Johann Nikolaus Forkel</AUTHOR>
  <PARA>
    ... ..
```

Shorthand properties in CSS

```
h1 {
font-weight: bold;
font-size: 12pt;
line-height: 14pt;
font-family: Helvetica;
font-variant: normal;
font-style: normal;
}
```

may be rewritten with a single shorthand property:

```
h1 { font: bold 12pt/14pt Helvetica }
```

In this example, 'font-variant', and 'font-style' take their initial values.

Special formatting of *first line* of a paragraph

CSS	<code>p:first-line {text-transform: uppercase }</code>
HTML	<code><p>Iamque fretum Minyae Pagasaea puppe secabant, perpetuaque trahens inopem sub nocte senectam Phineus visus erat, iuvenesque Aquilone creati virgineas volucres miseri senis ore fugarant.</p></code>
Rendering	IAMQUE FRETUM MINYAE PAGASAEA puppe secabant, perpetuaque trahens inopem sub nocte senectam Phineus visus erat, iuvenesque Aquilone creati virgineas volucres miseri senis ore fugarant.

Special formatting of *first letter* of a paragraph

CSS	<code>p:first-letter {font-size: 3em }</code>
HTML	<code><p>Iamque fretum Minyae Pagasaea puppe secabant, perpetuaque trahens inopem sub nocte senectam Phineus visus erat.</p></code>
Rendering	I amque fretum Minyae Pagasaea puppe secabant, perpetuaque trahens inopem sub nocte senectam Phineus visus erat.

Special formatting of *first word* of a paragraph

CSS `span.largeword {font-size: 2em ;
text-transform: uppercase }`

HTML `<p><span
class=largeword>Iamque fretum
Minyae Pagasaea puppe secabant,
perpetuaque trahens inopem sub nocte
senectam Phineus visus erat.</p>`

Rendering **IAMQUE** fretum Minyae Pagasaea
puppe secabant, perpetuaque trahens inopem
sub nocte senectam Phineus visus erat.

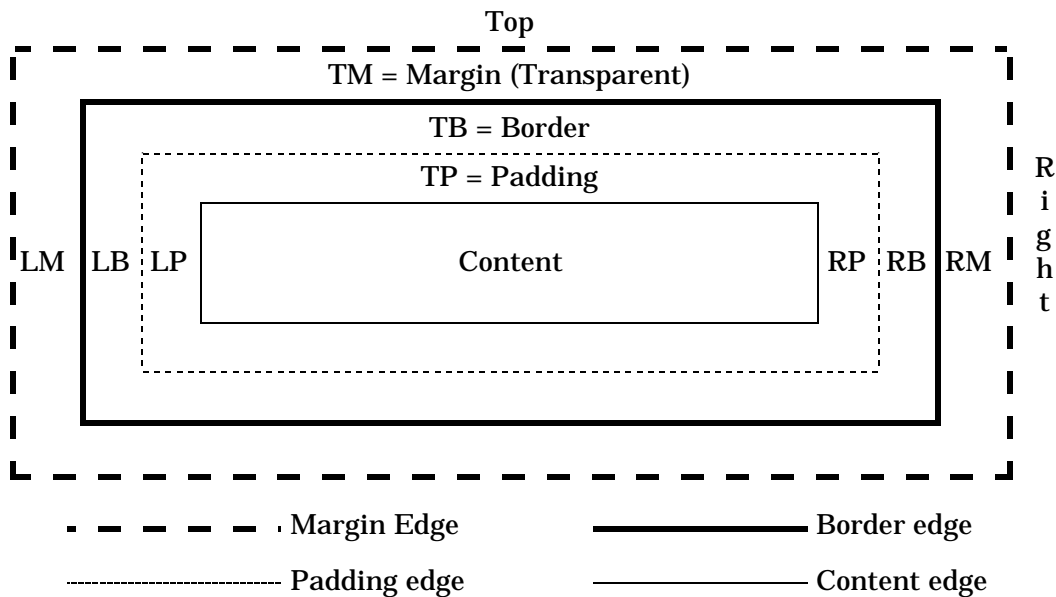
Different formatting for screen viewing and printing

```
@media print {
.dummy {} /* some faulty browser need this */
.pagebreak
{ page-break-before: always }
h1 { font-size: 18pt }
} /* end of media print */

@media screen, print {
.dummy {}
h1 { font-family: Verdana, Arial, Helvetica, sans-serif;
text-align: left;
padding-top: 0.2cm;
padding-bottom: 0.2cm;
font-weight: bold }
} /* end of media screen, print */

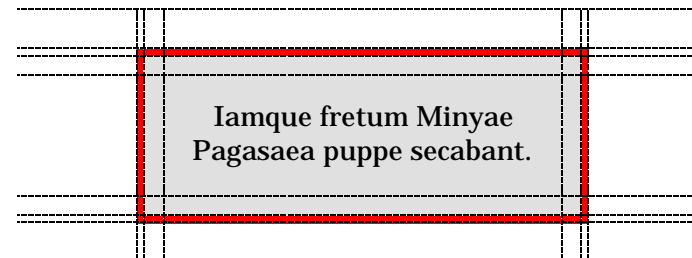
@media screen{
.dummy {}
h1 { font-size: 26px }
} /* End of media screen */
```

Box model



Example of use of box model

```
<style type="text/css">
div.mybox {
margin: 1cm 3cm; border: 5pt solid red;
padding: 5mm; background-color: #CCCCCC;
text-align: center; font-size: 20pt }
</style>
</head><body>
<div class=mybox>Iamque fretum Minyae Pagasaea puppe
secabant.</div>
</body></html>
```



Inline and block boxes

```
<style type="text/css">
.inlinebox { display: inline; padding: 5mm }
.blockbox { display: block; border: 6pt solid red }
</style></head><body>
  <div class=blockbox>
    <div class=inlinebox>Text in the first left block</div>
    <div class=inlinebox>Text in the first right block</div>
  </div>
  <div class=blockbox>
    <div class=inlinebox>Text in the second left block</div>
    <div class=inlinebox>Text in the second right block</div>
  </div>
```

Text in the first left block Text in the first right block

Text in the second left block Text in the second right block

Text in the first left block Text in the first right block

Text in the second left block Text in the second right
block

The display property

block	A block box (laid out vertically).
inline	One or more inline boxes (laid out horizontally). Split into several boxes if all does not fit into the line.
inline-block	??????
list-item	<ul style="list-style-type: none"> • a list of • items
run-in	Either block or in-line depending on context??????

Static and relative positioning

position:

static	Normal flow
relative	Normal flow plus offset
absolute	Fixed position in relation to surrounding block
fixed	Fixed position in relation to: <ul style="list-style-type: none"> • Window (screen) • Page (printing)

Combined with top, bottom, right, left which can have:

- absolute value
- percentage (of containing block)
- auto
- inherit

Float

```
<STYLE type="text/css">
IMG { float: left }
BODY, P, IMG { margin: 1em }
</STYLE></HEAD><BODY>
<P>
<IMG src="gunborg-palme-154px.jpg" alt="A floating picture">
Iamque fretum Minyae Pagasaea puppe secabant, perpetuaque
trahens inopem sub nocte senectam Phineus visus erat,
iuvenesque Aquilone creati virgineas volucres miseri senis ore
fugarant, multaue perpepsi ... ..
```

