

# HTML, CSS

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## 1 WWW

- The beginning
- The web simplified
- Cookies

## 2 HTML

- Content and form in HTML
- Other language items

## 3 CSS

## 1 WWW

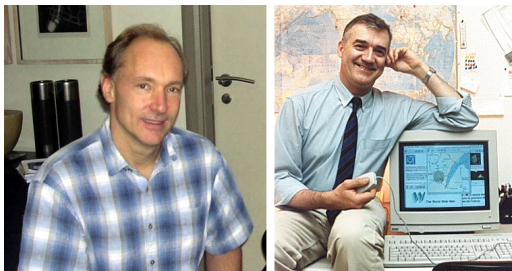
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# World Wide Web



**Pictures:** Sir Tim Berners-Lee (left) and Robert Cailliau (right)

In 1990 at CERN Sir Tim Berners-Lee and Robert Cailliau designed the WWW, to create a network where anyone can create publicly available information.

# World Wide Web

- At the end of 1990 they created the first browser, then in 1991 the WWW was made public on the internet.
- They introduced the URL (Uniform Resource Locator), HTML-t (HyperText Markup Language) and HTTP (HyperText Transfer Protocol).
- In 1993 CERN announced that the Web will be free for everyone, later in the same year the first widely used browser was created, Mosaic.

## 1 WWW

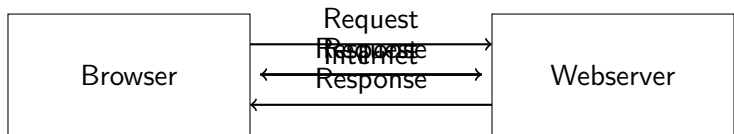
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# Browser and webserver



The browser is connected to the webserver through the internet.

The browser sends a request to the webserver, telling it what page it wants to load, it sends other information as well.

The browser receives a response that contains the HTML as well as other information.

This is how browsing works in a nutshell, whenever we go to a new page the browser sends a request and waits for a response.

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# Cookies

- A webserver may receive thousands of requests every second, for a static page this is okay, but what about for example a social website?
- The user can log in and stays logged in, but how does the webserver know who's who?
- The webserver may send more than just the HTML as a response, it can send cookies as well.
- A cookie is a temporary minimal text file, it is associated with the website that sent it, the browser stores this cookie on the users computer.
- When the browser sends a request it sends the cookies associated with that website as well, this is how a website knows who's who.

# Contents of a cookie

- *Name*: Name of the cookie
- *Value*: The data it stores
- *Attributes*:
  - *Expiry date*: when should the browser delete the cookie
  - *Domain*: which website sent this cookie
  - etc.

The browser only sends the name of the cookie and the value in the request, the others are information for the browser only.



Name:	PREF
Content:	ID=1111111111111111
Domain:	.google.hu
Path:	/
Send For:	Any type of connection
Expires:	31 December, 2015 17:02:22

# Cookie safety

- Cookies can't just contain the username of the user, it would be too easy to forge a fake cookie.
- A cookie isn't a virus, it doesn't contain an executable program.
- Typically it contains a long key (string), that is stored on the webserver as well, and is associated with the user.
- This way the users don't know what key belongs to others, but the webserver does.
- Example: most search engines personalize their results, this is based on the previous searches as well as visited websites.

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# HTML markup language – tag, attribute

- Markup language, made up of tags.
- Can be edited in a simple text editor, easy to generate through a program.
- An item is part of the HTML marked by a tag.
- The format is `<name_of_tag>content</name_of_tag>`, if it has some data `<name_of_tag>` or `<name_of_tag />`, if it is by itself.
- For example `<em>text</em>` indicates that the **text** is emphasized, while `<br>` or `<br />` is a line break.
- Tags may contain attributes, the syntax for these is `name_of_attribute="attribute"` for example  
Here is my `<a href="timetable.html">timetable</a>`.
- Comment in HTML: `<!-- whatever's here doesn't show -->`

# Example page

```
<!DOCTYPE html>
<html lang="hu">
<meta charset="utf-8" />
<body>

<h1>Title</h1>

<h2>Subtitle</h2>

<p>A paragraph.</p>

</body>
</html>
```

**Title**

**Subtitle**

A paragraph.

# The most important tags

- `<h1>Title</h1>` (heading)
- `<h6>Subtitle</h6>` (heading)
- `<p>Paragraph</p>`
- `<em>Emphasize</em>` (emphasize)
- `<strong>Strong emphasize</strong>`
- `<a>Link</a>` (anchor)
- `<ul>Unordered list</ul>`
- `<ol>Ordered list</ol>`
- `<li>List item</li>`
- `<blockquote>Quotation</blockquote>`
- `<div>Division</div>`
- `<span>Inline division</span>`
- `<img>` (image)

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# Content and visual representation

## ■ Some non-content, visual tags:

- `<i>Italic</i>`
- `<b>Bold</b>`
- `<sub>Subscript</sub>`
- `<sup>Superscript</sup>`
- `<pre>Preformatted</pre>`
- `<hr />` (horizontal rule – thematic change in the content)
- `<br />` (line brake)

## ■ Organizing content

- `div` and `span` indicates semantic cohesion.
- `div` usually contains more text, even more `divs`, that can also contain more `divs`
- `span` does this inline.

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# Attributes

- title title for an HTML item:

```
<p title="This is very important!">Here's the important pa
```

- href together with the a tag gives us links:

```
HTML <a href="http://www.w3schools.com">course</a>.
```

- src is a reference, alt alternative visualization, width and height is size in pixels:

```

```

- style="attribute:value" this sets the item's style:

```
<body style="background-color:lightgrey">
```

```
<p style="color:red">Red paragraph.</p>
```

```
<p style="font-family:courier">Courier paragraph.</p>
```

```
<h1 style="text-align:center">Centered title</h1>
```

# Special characters

character	html	name
<	&lt;	less-than
>	&gt;	greater-than
&	&amp;	ampersand
	&nbsp;	non-breaking space

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# CSS

- CSS: Cascading Style Sheets
- Aim: separating content from visualization
- Possibility for separation: .css files
- Serves to format HTML items
- Advantages: reusable, easy to modify
- Documentation: [www.w3schools.com/css](http://www.w3schools.com/css),
- Validating: [jigsaw.w3.org/css-validator/](http://jigsaw.w3.org/css-validator/)

# CSS syntax

- CSS follows the following basic syntax:

```
identifier {attribute: value; attribute2: value2;}
```

- Example:

```
p {color: red;}
```

Or it can be separated to make it readable:

```
p {  
  color:#f00;  
  background: white;  
}
```

- Modifying more tags at once:

```
h1, h2 {color: red;}
```

- Comment:

```
/* Whatever is here doesn't show. */
```

# CSS placement

- Inline (inline):

```
<p style=".....CSS code.....">content</p>
```

- Embedded, in the *head* tag of the html:

```
<style>  
    CSS formatting  
</style>
```

- Separate file, link in the *head* tag:

```
<link rel="stylesheet" href=".....css">
```

- Inline is prioritised, then embedded, lastly the separate file.



# Grouping

We can group tags in the html, we can give them unique names, or create classes.

**id** for every page an id is unique to one html item.

```
<div id="hirek">.....</p>
```

**class** more than one tag can have the same class, and an item can have more than one class

```
<p class="comment">.....</p>
```

```
<p class="comment">.....</p>
```

```
...
```

```
<div class="comment">.....</div>
```

# Identifiers

- item identifier: an HTML tag

```
p {color: red;}
```

- id identifier: references the item with this id

```
#news {background: white;}
```

- class identifier: identifies the tags with this tag

```
.comment {font-size: small;}
```

- we can combine item and class identifiers:

```
p.comment {color: blue;}
```

this makes those p tags blue that belong to the comment class

# Modifying links

- Links have special states that can have separate styles
  - baseline (`link`),
  - if the linked website has been visited (`visited`),
  - if the cursor is above the link (`hover`),
  - when we click on the link (`active`).
- Example (LoVe-HAtE order):

```
a:link {  
  color: green;  
  text-decoration: underline;  
}  
a:visited { color: purple; }  
a:hover {  
  color: blue;  
  text-decoration: none;  
}  
a:active { color:red; }
```

# Questions

- What are cookies, what are they used for?
- Which tag is used to include a picture in a website?
- Which tag can be used to link another website?
- With which attribute can we provide inline CSS formatting?
- How can we separate content from visualization in HTML?
- What states does a link have? Give an example where CSS is used to modify them.
- What's the difference between class and id? Give an example for both.