Internet Software Technologies
HTML

IMCNE

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The Web

- WWW: network of information systems.
- Information unit: documents or pages.
- Web pages can link other documents containing related information:
  - hypertext,
  - hypermedia
- Client-server architecture: web servers -browser
- Main protocol used: **http**
- Client applications to access web pages: *browser*
- Web sites hosts server programs called **http server**.

Web foundation

1. *Naming scheme based on **URLs***
2. *Network protocol:* **HTTP**
3. Languages to describe information content: **HTML**

URL

- Composed by:
  1. protocol followed by "://",
  2. address of web-site,
  3. resource path.
- Example:
  - http://retis.sssup.it/~gabriele/Teaching/IST
    (*where you will find course material*)

HTTP - HyperText Transfer Protocol

- HTTP defines a Request-response chat, composed by:
    1) Client establish a connection with the server and ask for a document;
    2) Server answer using the same connection.
- The protocol is *stateless*

HTML - Hyper Text Markup Language

- It's a Markup Language, used to describe the contents of a document.
- By using HTML you may publish document with:
    - Headings, Paragraphs, Lists,
    - Tables,
    - Images,
    - Hypertext
    - Forms for search and transactions
    - Hypermedia

HTML standard

- Defined by W3 consortium: http://www.w3.org/
- HTML is only for contents.
- Use CSS to better format your documents.

First HTML document: Hello world!

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01//EN"
"http://www.w3.org/TR/html4/strict.dtd">
<HTML>
  <HEAD>
    <TITLE> My first HTML page </TITLE>
  </HEAD>
  <BODY>
    <P> Hello world! </P>
  </BODY>
</HTML>
```

HTML Elements

Start Tag   *<element-name>*

               Content

Final Tag   *</element-name >*

- Some elements may be used
  - without final (P, LI),
  - other may be used without start tag (HEAD, BODY),
  - others do not have content (BR)

HTML attributes

- Example

<A HREF="file.html">A file </A>

- HREF is an attribute of A Element
- `file.html` is the value of HREF attribute
- An Element may have several attributes

Comments

```
<!-- one line comment -->
<!-- multiple line
comment -->
```

HTML document: global structure

- 3 parts:
  - Version Line
  - Head section
  - Body section

HTML Version

- **Version line** specifies the *Document Type Definition* (DTD) used for the document.
- Example:

  <!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Frameset//">

- Sometimes affect the presentation of the page

<HEAD>

- HEAD element hold information about the current document:
  - ❏ Title
  - ❏ Keywords
  - ❏ Meta information

<TITLE>

- TITLE belong to HEAD section
- TITLE should be used to give a title to a document

<META> (1/2)

- **META belongs to HEAD section**
- **It gives information about the document**

  <META name="Author" content="Dave Raggett">

  <META name="keywords" lang="en" content="holiday, Greece, sunshine">

  <META name="description" content="some description">

  <META http-equiv="Content-Type" content="text/html; charset=ISO-8859-15">

`<META>` (2/2)

- **Meta information is used to add HTTP protocol headers**

  ```
  <META http-equiv="Expires" content="Thu, 01 Jan 2004 14:25:27 GMT">

  <META http-equiv="Refresh" content="10">

  <META http-equiv="Refresh" content="10;URL=http://localhost/pag2.html">
  ```

`<BODY>`

- **Attributes (deprecated)**
  - **background** = *uri*
  - **bgcolor** = *color*
  - **text** = *color*
  - **link** = *color*
  - **vlink** = *color*
  - **alink** = *color*

- Every element and attribute which affects the page rendering is deprecated; you should use the CSS!

Headings

- **H1, H2, H3, H4, H5, H6**
- Example:

```
<h1> Chapter 1 </h1>
<h2> Section 1 </h2>
<p> This is the first paragraph </p>
…
```

Structured Text

- **EM, STRONG, DFN, CODE, SAMP, KBD, VAR, CITE, ABBR e ACRONYM**
- **BLOCKQUOTE e Q**
- **SUB e SUP**

- **Typographical Elements** *(deprecated)*
  - **B, I, TT, U**

Paragraphs

- **<P>**
  - ❑ **To break a line:
**
  - ❑ **To avoid braking a line: * ***

- **Preformatted text: <PRE>**

Lists

- **<UL> Unordered List**, list items defined by <LI>
  - ❑ Attributes *(deprecated)*:

    type= disc | square | circle
- **<OL> Orderd List**, list items defined by <LI>
  - ❑ Attributes *(deprecated)*:

    type= 1 | i | I | A | a

    start=[1..]
- **<DL> Definition List**
  - ❑ <DT> Definition Term </DT>
  - ❑ <DD> Definition Data </DD>

Tables: an example

```
<TABLE border="1">
<CAPTION><EM>Table example</EM></CAPTION>
<TR><TH rowspan="2"><TH colspan="2">Media
<TH rowspan="2">Eyes<BR>red
<TR><TH>Height<TH>Weight
<TR><TH>Males<TD>1.9<TD>0.003<TD>40%
<TR><TH>Females<TD>1.7<TD>0.002<TD>43%
</TABLE>
```

<TABLE>

- <TABLE>
  - **align = left | center | right**
  - **width =** *length*
- <CAPTION>
  - **align = left | center | right**

TR, TH, TD

- TR attributes:
  - **width** = *length*
  - **height** = *length*
  - **align, valign**
- TH, TD attributes:
  - **rowspan** = *number*
  - **colspan** = *number*
  - **nowrap**
  - **width** = *length*
  - **height** = *length*
  - **align, valign**

ROWSPAN e COLSPAN

- Examples

Other tables attributes

- **frame = void | above | below | hsides | lhs | rhs | vsides | box | border**
- **rules = none | groups | rows | cols | all**
- **border =** *pixels*
- **align = left | center | right | justify**
- **valign = top | middle | bottom | baseline**
- **cellspacing =** *length*
- **cellpadding =** *length*

Hyperlinks

```
<BODY>
<P> Look at
<A href="http://www.sssup.it/"> SSSUP
  </A> site, and then this
<A href="../immages/pisa.gif"> city
  map</A>.
</BODY>
```

Anchors

- It may be the starting point of an hyperlink (when has `href` attribute) and/or the destination point of an hyperlink (when has the name attribute)
- The destination point of an hyperlink may be described by:
    - <A name="*anchorname*">;
    - **id** attribute: <H1 id="nomeancora">

Anchors inside a page

```
<H1> Summary</H1>
<P>
<A href="#section1">Introduction</A><BR>
<A href="#section2">Basic concepts</A><BR>
<A href="#section2.1">First concept</A><BR>
...
<H2><A name="section1">Introduction</A></H2>
... section 1 ...
<H2><A name="section2">Basic concepts</A></H2>
... section 2 ...
<H3 id="sezione2.1">First concept</A></H3>
... section 2.1 ...
...
```

<IMG>

- To put images on web page use IMG element
- **src** attribute specifies the URL contaning the image.

- Example:

```
<IMG name="my_cats" src="/images/mycats.gif"
  alt="A photo of my cats">
```

Image Maps

- Image maps let to specify image regions assigning an action for every region specified.
  - ❑ **Client-side Image Maps**
  - ❑ Server-side Image Maps (usually not adopted)

Client-side Image map

```
<P>To visit this site:
<IMG SRC="navbar1.gif" usemap="#map1">
<MAP name="map1">
<AREA href="home.html" alt="Homepage"
  shape="rect" coords="0,0,118,28">
<AREA href="whoami.html" alt="Who am I ?"
  shape="rect" coords="118,0,184,28">
<AREA href="search.html" alt="Search"
  shape="circle" coords="184,200,60">
<AREA href="help.html" alt="Help" shape="poly"
coords="276,0,276,28,100,200,276,0">
</MAP></P>
```

Images border (deprecated)

```
<IMG src="cat.gif" border=1>
```

Image Align (deprecated)

`<IMG src="cat.gif" align="middle">`

- `Align` may have the following values:
  - `bottom`: image bottom is vertical aligned with current base line (default)
  - `middle`: image middle is vertical aligned with current base line
  - `top`: image top is vertical aligned with current base line
  - `left` e `right`: image is align to left or right margin of the page

Text align (deprecated)

`<P align=center>centered paragraph</P>`

- Where:

`align = left|center|right|justify`

Font *(deprecated)*

```
<FONT SIZE=1>something</FONT>
<FONT SIZE=+1>something</FONT>
<FONT FACE="Times">something</FONT>
<FONT COLOR="red">something</FONT>
```

FRAMES – An Example (1/2)

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01
  Frameset//EN"
  "http://www.w3.org/TR/html4/frameset.dtd">
<HTML>
<HEAD>
<TITLE> FRAMES – An Example </TITLE>
</HEAD>
<FRAMESET cols="20%, 80%">
<FRAME name="index" src="frame_index.html">
<FRAMESET rows="100, 200">
<FRAME name="top" src="logo.html">
<FRAME name="main" src="content.html">
</FRAMESET>
</FRAMESET>
```

FRAMES – An Example (2/2)

```
<NOFRAMES>
<!- Content for not-supporting FRAMES browser -->
…
</NOFRAMES>
</FRAMESET>
</HTML>
```

FRAME: attributes

- **name** = *frame_name*
- **longdesc** = *url*
- **src** = *url*
- **noresize**
- **scrolling** – **auto|yes|no**
- **frameborder** = **1|0**
- **marginwidth** = *pixels*
- **marginheight** = *pixels*

HyperLinks' *Target* of a frame

```
<A href="slide3.html" target="main">
  slide 3 </A>
```

- **Special target**
  - target="_parent"
  - target="_top"