**PPS-Design einer eigenen WWW-Homepage
WS 2002/2003**

Praxis II - 29.11.2002:
Cascading Style Sheets (CSS)

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Anforderungen an eine Webseite

1. Navigationsmechanismen
   - Mehrere HTML Seiten sollen erstellt werden
   - Frames, Tabellen, Scripts
2. Einheitliche Gestaltung
   - Style-Sheets (CSS)
3. Dynamische Elemente
   - Seite oder Teile von HTML werden dynamisch erstellt (DHTML)
   - CGI-Scripts (Perl, PHP, shell, ...)
4. Animation
   - JavaScript, Java-Applet
   - evtl. Macromedia, Flash, ...

Cascading Style Sheets, Level 2 (CSS2)

- What it is
  - A style sheet language (builds on CSS1)
- What it can do
  - Allow authors and users to attach style to structured documents
- Why
  - Simplifies Web authoring and site maintenance
- How
  - Separate presentation style from content

Attaching Style to Content

- Embedded Style Sheet: STYLE element e.g.,

```
<HEAD> ...
  <STYLE type="text/css">
   H1 { color: blue; font-size: 48pt }
   P  { font-size: 32pt }
  </STYLE>
  ...
</HEAD>
```

- External Style Sheets: LINK element e.g.,

```
<HEAD> ...
  <LINK rel="stylesheet"
   href="LINK-Element.css" type="text/css">
  ...
</HEAD>
```

Main Changes from CSS1

- Supports media-specific style sheets
  - Media types: aural, braille, embossed, handheld, print, projection, screen, tty, tv
- Supports formatting of tables
- Supports absolute positioning
- Defines new selectors
  - E.g., child selectors, dynamic pseudo-classes
- Supports generated content
- Supports automatic numbering

CSS Statements

- Rule Sets (Rules):
  - Specify which style declarations to be applied to which items in a document tree
  - Consist of a Selector followed by a Declaration Block
- At-Rules:
  - Extend CSS Rule Set syntax beyond simple Selector/Declaration blocks
  - @charset, @import, @media, @namespace, @page, @fontdef, @font-face

Selectors

- Element Selectors
  - refer to elements and some relationships between them
- Attribute Selector
  - refer to element attributes and their values
- Special HTML Selectors
- Pseudo-Classes
  - refer to elements in a specific state
- Pseudo-Elements
  - refer to portions of content

Element Selectors

- Universal Selector
  - Pattern: *
- Simple Element Selector
  - Pattern: E
- Descendant Selector
  - Pattern: E1 E2
- Child Selector
  - Pattern: E1 > E2
- Adjacent Selector
  - Pattern: E1 + E2

Attribute Selectors

- Simple Attribute Selector
  - Pattern: [Attr], E[Attr]
- Attribute Value Selector
  - Pattern: [Attr="val"], E[Attr="val"]
- One-of-Many Attribute Value Selector
  - Pattern: [Attr~="val"], E[Attr~="val"]
- Hyphen Attribute Value Selector
  - Pattern: [Attr|="val"], E[Attr|="val"]

- Multiple Attribute Selectors
  - Pattern: E[Attr1="val1"][Attr2="val2"]

Special HTML Selectors

- Class Selector
  - Pattern: .Class, E.Class
- ID Selector
  - Pattern: #ID, E#ID

Pseudo Classes

- State Dependent
  - Link Pseudo Classes
    - Pattern: :link, E:link, :visited, E:visited
  - Dynamic Pseudo Classes
    - Pattern: :active, E:active, :hover, E:hover, :focus, E:focus
  - Language Pseudo Class
    - Pattern: :lang(C), e.g., :lang(en)
- Document Tree
  - Pattern: :root, :empty, :first-node, :last-node, :first-child, :last-child

Pseudo Elements

- First-Line
  - Pattern: :first-line, E:first-line
- First-Letter
  - Pattern: :first-letter, E:first-letter
- Before
  - Pattern: :before, E:before
- After
  - Pattern: :after, E:after

At-Rules

- @charset: specifies character set encoding of the style sheet
- @import: imports a style sheet fragment file to the current style sheet
- @media: specifies media types to which certain style rules should be applied
- @namespace: allows the declaration of a namespace prefix to be used by selectors
- @page: specifies a page box in paged media
- @fontdef: links a font definition file to a document
- @font-face: maps an embedded OpenType file to a font already on the user's system or an entirely new font name.

Declaration Block

- Binds a value to a CSS property
- Consists of a property name, followed by a colon, followed by a property value
  - Selector { Property1: Value1; Property2: Value2 }
- Property names:
  - http://www.blooberry.com/indexdot/css/propindex/all.htm
- More than 180 different properties
  - Not applicable for all elements and media
  - Some properties are inherited from parents

Shorthand Properties

```
H1 {
  font-weight: bold;
  font-size: 12pt;
  line-height: 14pt;
  font-family: Helvetica;
  font-variant: normal;
  font-style: normal;
  font-stretch: normal;
  font-size-adjust: none
}
equal to following definition

H1 { font: bold 12pt/14pt Helvetica }
```

Further Information

- CSS Home page:
  - http://www.w3.org/Style/CSS/
- CSS2 Specification:
  - http://www.w3.org/TR/REC-CSS2/
- CSS Tutorial (in german):
  - http://selfhtml.teamone.de/css/
- CSS3 Working Draft (Rec. expected 2003)
  - http://www.w3.org/TR/css3-roadmap/
  - Modularization