Design of an own WWW-Homepage
PPS SS 2003

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Outline for Today

- Administrative details
- Goal of the Praktikum
- Technical requirements
- Introduction to Webpage design
- Practical exercises
  - Creating the first homepage
  - Publishing the page created previously
Administrative Details

• Assistants
  - Hasan Hasan: hasan@tik.ee.ethz.ch, ETZ H84
  - Károly Farkas: farkas@tik.ee.ethz.ch, ETZ G64.1

• Dates of the praktikum afternoons
  - 07. April 2003, 14.15 - 17.00, ETZ F76.1
  - 14. April 2003, 14.15 - 17.00, ETZ F76.1
  - 05. May 2003, 14.15 - 17.00, ETZ F76.1
  - 12. May 2003, 14.15 - 17.00, ETZ F76.1
  - 19. May 2003, 14.15 - 17.00, ETZ F76.1
  - 26. May 2003, 14.15 - 17.00, ETZ F76.1
Administrative Details (cont’d)

• Date of final presentation
  - 30. June 2003, 14.15 - 17.00, ETZ F76.1

• Praktikum Homepage
  - http://www.tik.ee.ethz.ch/tik/education/lectures/PPS/web/SS03/

• Praktikum mailing list
  - pps-web@tik.ee.ethz.ch

• Language of the Praktikum
  - English 😞
Goal of the Praktikum

• To become acquainted with the basics of WWW technology
• To be able to construct an own Homepage
• To be able to present this Homepage
  - Criteria to the final presentation
    • Should be clear by the end of the Praktikum
• To be able to evaluate others’ work
  - Evaluation will be done by the participants themselves
Technical Requirements

• To join the praktikum
  - it’s required:
    • a laptop with text editing and Webpage browsing capabilities
  - it’s recommended:
    • wireless LAN or 10/100 Mbit/s Ethernet LAN (UTP) interface

• Moreover, the working of the student account on the computer infrastructure of ETH should be found out and checked
Introduction to Webpage Design

- Web history
- Terminology
- Using the Web
- Creating a Webpage
Web History

• Original motivation
  - To invent a globally distributed hypermedia system for better info exchange among researchers at CERN

• Idea inventor
  - Tim Berners-Lee, 1989

• Milestones
  - First working prototype: end of 1990
  - First real browser (NCSA’s Mosaic): 1993
  - Netscape Corp. was founded: 1994
  - World Wide Web Consortium was founded: 1994
  - Microsoft released IEv1.0: 1995
Terminology

• **User**
  - Human being which interacts with the web through some kind of program

• **Browser**
  - Program which is used to access web servers and displays documents retrieved from them

• **Client**
  - Program which accesses web servers (eg., browser, search engine, etc.)

• **Server**
  - Server program which stores documents
Main Components of the Web

- **URI**
  - Uniform Resource Identifier: How to name a document

- **HTTP**
  - Hypertext Transfer Protocol: How to get a document

- **HTML**
  - Hypertext Markup Language: The document format for hypertext
**URI**

- **URI**: URN (Uniform Resource Name) or URL (Uniform Resource Locator)
- **URL Syntax**
  - scheme “:” scheme-specific-part
- **Scheme**
  - ftp, port #: 21
  - http, port #: 80
  - https, port #: 443
  - nntp, port #: 119
  - mailto
  - telnet, port #: 23
  - ...
URL Scheme-specific-part

• **Specific syntax**
  - “//” [user[:“pass”]@”]host[:“port”]/”url-path
    • eg.: http://joe:cool@www.ethz.ch:80/~joe/hidden

• **General syntactical rules**
  - percent sign: %
    • escape character
  - hierarchical forms: /
    • delimit hierarchical substrings
  - hash sign: #
    • delimit an object reference from a fragment id
  - query strings: ?
    • Delimit the boundary between the id of the object and a query on that object
Host Name Resolution

- Host name: well specified name
  - fully qualified domain name or
  - IP address in its decimal form
- In case of domain name
  - using Domain Name Service (DNS)
HTTP

• Hypertext Transfer Protocol
  - How to get a document?
  - Text based request/response protocol between the client and the server
  - Uses TCP (Transmission Control Protocol)

• HTTP history
  - HTTP/0.9: 1992
  - HTTP/1.0: around 1996
  - HTTP/1.1: 1997
Creating a Webpage

- Content of a general Webpage
  - Textual information
  - Navigation aids
  - Images
  - Multimedia materials
  - Links to other materials
  - Data posting forms
  - Contact info (eg., email address)
  - Dynamic content (eg., from database)
  - ...

- Basic tool: HTML—Hypertext Markup Language
- Current version: 4.0 (since 1997)

But how can we carry out this?
Visualizing a Webpage

Web Browser

HTML Document

HTML Parser

Wilde's WWW

Erik Wilde

This book gives an overview of the architecture, design, and implementation of the World Wide Web (WWW). It introduces the basic concepts of the HTML language, the server and client software, and the protocols used to access the Web. It also covers the development of the Web as a server and the role of the user in the Web community.

The book is divided into two parts. The first part covers the basic concepts of HTML and the server and client software. The second part covers the development of the Web as a server and the role of the user in the Web community. The book is written for a technical audience and includes a wealth of information about the Web and its development.

This book is an essential resource for anyone interested in the Web and its development. It is a valuable reference for web developers, system administrators, and anyone who wants to understand the Web and how it works.
General Structure of a Webpage

HTML Document

Document Head
(Information about the document)

Document Body
(The real content of the document)
General Structure of a Webpage (2)
General Structure of a Webpage (3)

- **HTML**
  - The file contains HTML-coded information
- **Head**
  - Contains info about the document
- **Title, Meta**
  - Identifies the document with a 'title' and occasionally contains some additional meta info
- **Body**
  - Contains the content of the document
- **Hx, P, UL, ...**
  - Header format, paragraph, list, ...
HTML Basic Syntax

• Fundamental components: elements
  - Eg., head, table, paragraph, list, etc.
• To denote elements
  - Use tags: "<" tag_name">"
  - Tags are usually paired: <H1> and </H1>
  - Some elements may include an attribute
    • eg.: top, middle or bottom as alignment
  - HTML is not case sensitive: <title> = <TITLE>
• Minimal required elements to a valid Webpage
  - <HTML>, <HEAD>, <TITLE>, <BODY> end their end pairs
Creating Our First Webpage

<html>
<head>
<TITLE>A Simple HTML Example</TITLE>
</head>
<body>
<H1>HTML is Easy To Learn</H1>
<P>Welcome to the world of HTML. This is the first paragraph. While short it is still a paragraph!</P>
<P>And this is the second paragraph.</P>
</body>
</html>
Editing a Webpage

• Using a plain text editor
  - Notepad, vi, emacs, ...

• Using a WYSIWYG (What You See Is What You Get) editor
  - Netscape Composer
  - Microsoft Frontpage
  - Adobe PageMill
  - ...
Publishing Our Homepage

• Information for D-ITET students

• Information for D-INFK students