CS-081 Course Outline

1. Web Technologies
    1.1. The Internet
        1.1.1. Clients, Servers, Navigation, and Negotiation
            1.1.1.1. Requests: messages from client to server
            1.1.1.2. Responses: messages from server to client
        1.1.2. Internet Protocol (IP) Packets
            1.1.2.1. Header Section
                1.1.2.1.1. Sender and Recipient IP Addresses and Ports
                    1.1.2.1.1.1. Domain Name Service (DNS)
            1.1.2.2. Body (Data) Section
        1.1.3. Internet Protocols use IP Packet Bodies
            1.1.3.1. HTTP (HyperText Transfer Protocol)
            1.1.3.2. SMTP (Simple Mail Transfer Protocol)
            1.1.3.3. SFTP (SSH File Transfer Protocol: 2001)
            1.1.3.4. SFTP (Simple File Transfer Protocol: 1984)
        1.1.4. HTTP Messages
            1.1.4.1. Headers and Bodies (inside IP packet bodies)
            1.1.4.2. Request Headers
                1.1.4.2.1. User-Agent
                1.1.4.2.2. Accept (MIME types)
                1.1.4.2.3. Accept-Charset
                1.1.4.2.4. Cache-Control
            1.1.4.3. Response Headers
                1.1.4.3.1. Response-Code
                1.1.4.3.2. Server
                1.1.4.3.3. Content-Type (MIME type)
                1.1.4.3.4. Content-Length
                1.1.4.3.5. Last-Modified
                1.1.4.3.6. Cache-Control
            1.1.4.4. HTTP Response Message Bodies (“Web Pages”)
                1.1.4.4.1. DOCTYPE, Character Encoding
                1.1.4.4.2. Head
                    1.1.4.4.2.1. Title
                    1.1.4.4.2.2. Links to scripts and stylesheets
                1.1.4.4.3. Body
                    1.1.4.4.3.1. Text
                        1.1.4.4.3.1.1. Headings
                        1.1.4.4.3.1.2. Paragraphs
                        1.1.4.4.3.1.3. Lists
                        1.1.4.4.3.1.4. Tables
                    1.1.4.4.3.2. Links to content
                    1.1.4.4.3.3. Images
                    1.1.4.4.3.4. Media
    1.2. Content Markup Languages

1.2.1. SGML
1.2.2. HTML
1.2.3. XML
1.2.4. XHTML
1.3. Stylesheets
1.3.1. CSS 2.1
1.3.2. CSS 3
1.3.3. Browser Compatibility
1.4. Scripting
1.4.1. Client Side
1.4.1.1. JavaScript
1.4.1.2. Flash, Silverlight …
1.4.2. Server Side
1.4.2.1. PHP
1.4.2.2. Ruby, Java, Python, C, C++, C#, Objective C …

2. Computer File Systems
2.1. Terminology
2.1.1. Files and Documents
2.1.2. Directories and Folders
2.1.3. File and Directory Names
2.1.3.1. Case Sensitivity
2.1.3.1.1. Sensitive, Preserving, Insensitive
2.1.3.2. Embedded Spaces
2.1.3.3. Special Directory Names: . and ..
2.1.4. Tree Terminology
2.1.4.1. Root
2.1.4.2. Parent
2.1.4.3. Child
2.1.4.4. Sibling
2.1.4.5. Descendant
2.1.4.6. Ancestor
2.1.4.7. Path
2.1.4.7.1. Absolute
2.1.4.7.2. Relative
2.1.4.7.3. Separators: forward and backward slashes, / and \

3. XHTML: XML representation of HTML
3.1. Syntax
3.1.1. Elements
3.1.2. Attributes
3.1.3. Contents
3.1.3.1. Character Encoding
3.1.3.2. Character Entities
3.1.4. Required Elements
3.1.4.1. html
3.1.4.1.1. head
3.1.4.1.1.1. title

            3.1.4.1.2. body
4. The Document Object Model (DOM)
    4.1. Tree Terminology
        4.1.1. Same terminology as file systems
        4.1.2. Totally different context
5. Text
    5.1. Content Structure
        5.1.1. Headings
        5.1.2. Paragraphs
        5.1.3. Lists
        5.1.4. Tables
    5.2. Appearance
        5.2.1. Fonts
            5.2.1.1. Family, Style, Size
            5.2.1.2. Weight, Variants
        5.2.2. Spans
6. Cascading Style Sheets (CSS)
    6.1. Linking to XHTML
    6.2. Syntax
        6.2.1. Rules
            6.2.1.1. Selector
                6.2.1.1.1. Which elements of DOM?
                6.2.1.1.2. Dynamic conditions (mouse hover, …)
            6.2.1.2. Property List Items
                6.2.1.2.1. Property Name
                6.2.1.2.2. Property Value
7. Colors
8. Image Files
9. CSS Box Model
    9.1. Measurement Units
        9.1.1. Pixels, EMs, Percentages
    9.2. Background
        9.2.1. Color, Image, Image position
    9.3. Areas: Margin, Border, Padding, Content
        9.3.1. Width and Height apply to Content
        9.3.2. Visible size includes content, padding, and border
10. Layout
11. Lists
12. Tables
13. Forms