



Electronic Business Systems

School of Engineering & Design

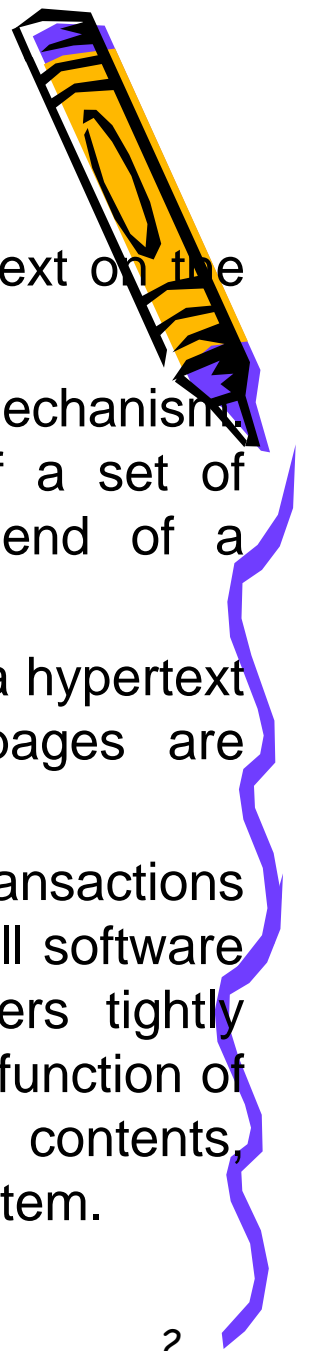
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A. Mousavi

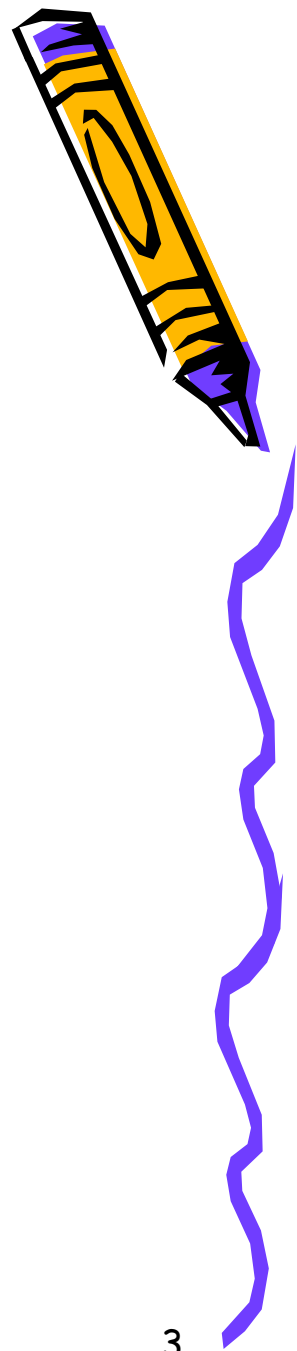
Web Concepts



1. URL (Universal Resource Locator): Are documents in hypertext on the web and each have a unique address.
2. HTTP (Hypertext Transfer Protocol): Is the web's retrieval mechanism. The communication technology protocol that consists of a set of guidelines for the way in which programs at either end of a communication link can talk to each other.
3. HTML (Hypertext Markup Language): The logical structure of a hypertext document is described in HTML format. The Web pages are programmed with the Markup Language.
4. Firewalls: Are software installed to filter and control the transactions coming from the Internet to the company's Intranet. Firewall software services once installed on one or a group of computers tightly monitors incoming transactions for their content. The main function of these firewalls are to prevent the infiltration of unwanted contents, viruses, hacking, and deceptive threats from outside the system.

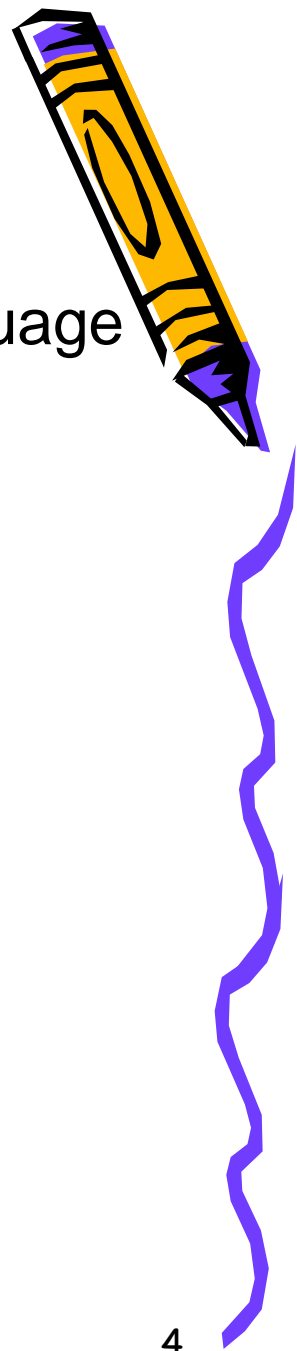
Filters

- Blocked-Safe Lists
- Keyword / Text-based content analysis
- Proxy / Dedicated servers
- Dedicated browser
- Time limitation
- Privacy control
- Chatroom activity monitoring
- Webpage activity monitoring
- Image-based content analysis



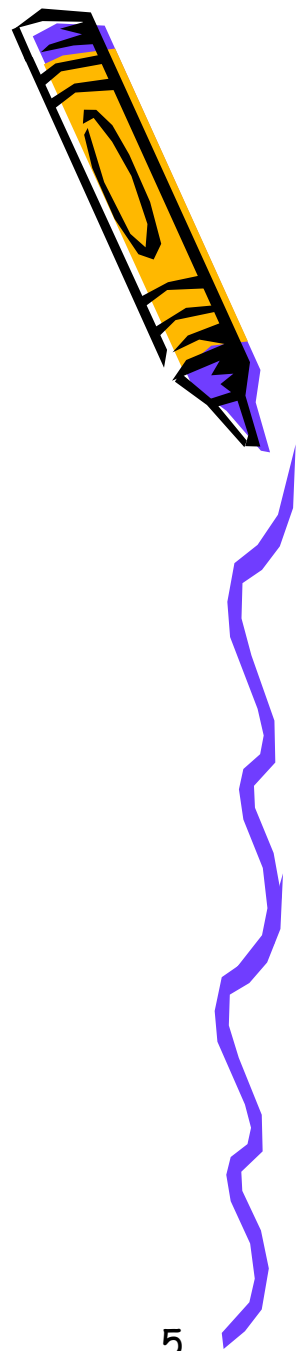
Web enabling languages

- Markup and Standard Generalised Markup Language (SGML)
 - Examples: HTML, XML, DHTML
- O-O Windows enabled programming languages
 - Java and VB.net
- Scripting Languages
 - JavaScript & VBScript
- Web design and management software
 - Macromedia Dreamweaver and Fireworks



Internet Browsers

- Safari
- Internet Explorer
- FireFox
- Opera
- Chrome



Principles of Markup Language (Goldfarb et al, 1960s)



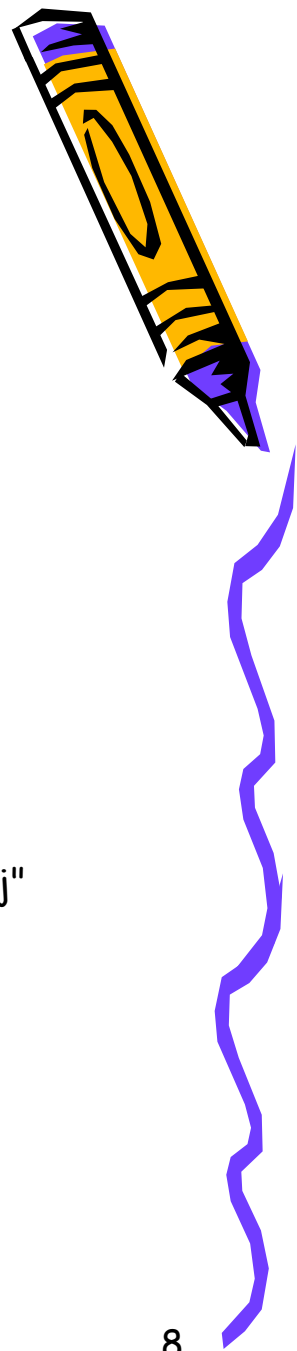
- Common data representation, Markup: Disparate systems need to read and write in the same format (to the same governing specifications).
- Markup should be extensible: There are limitless types of information; the language should not restrict the authors to 'fixed' markups.
- Document types need rules: There must be rules so that disparate systems can determine the exact meaning of the markup, shared by common document types... without ambiguity.

Hypertext Markup Language



- **HTML:** HTML is a standard generalised markup language (SGML) specified by document type definition (DTD). *"In practical terms, HTML is a collection of platform independent styles (indicated by markup tags) that define the various components of a WWW document."* [T. Jennings et al 2001]
 - **HTML Elements:** are the fundamental components of a text document. Tables, headers, paragraphs, and lists are examples of **elements**.
 - **HTML Tags:** HTML tags are used to mark the elements within a text file for the browser. A **Tag** instruction is confined into **< >** e.g. **<body>**
- **DHTML:** *"Combination of specifications that stem from multiple standards efforts and proprietary technologies that are built into two of the most popular web browsers, Netscape and Internet Explorer"* [Goodman 1998].

Dynamic Web pages



- **Multimedia and web pages**
 - Creating multimedia files
 - Embedding or putting Multimedia on Web pages
 - `Play My Video`
 - `<embed src="radio.ram" />`
- **Interactive pages using Applets and ActiveX**
 - **Scripting** --- JavaScript
 - **Java Applets** (Java mini-applications)
Ex: `<applet code="bounce.class" width="200" height="100"> </applet>`
 - **ActiveX** --- OLE
Ex: `<object id="label" classid="clsid.654744-6eb-00AA" type="application/x-oleobj" width="300" height="600" align="center">
 <param name="angle" value="45" /> </object>`
- **Dynamic HTML** --- Scripting, animation, and interactivity

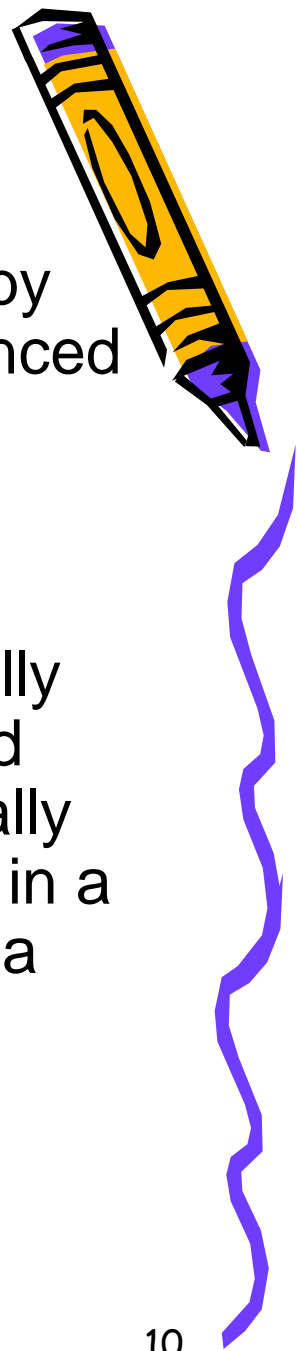
JavaScript



Facts

- Can be created using any text editor
- Case sensitive
- The code can be included in an HTML document
- The code can be embedded in HTML using `<script></script>`
- Note that the target Browser supports JavaScript otherwise it will be ignored. Ex: `<script language="JavaScript1.3">`
- Place code where the generated output should appear in the page
- In order for any application or program work they should be included in the **<head>**
- The Head section always loads first and then the **<body>** can safely refer to it.

Style Sheets



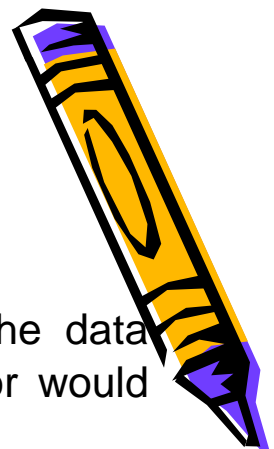
How a content of a page is represented is defined by **style sheets**. The contents of a web page is influenced by style sheets through tags and elements.

Cascading Style Sheets (CSS) & CSS-DOM

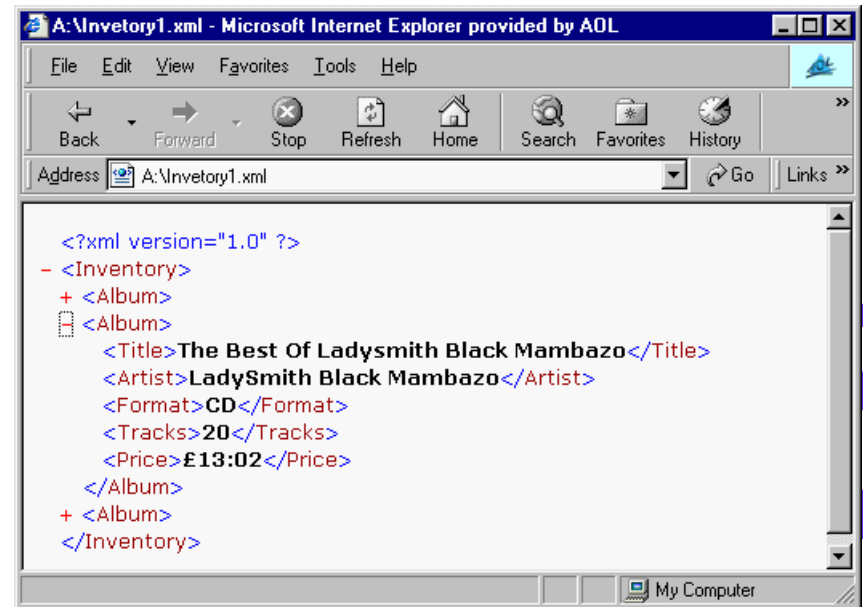
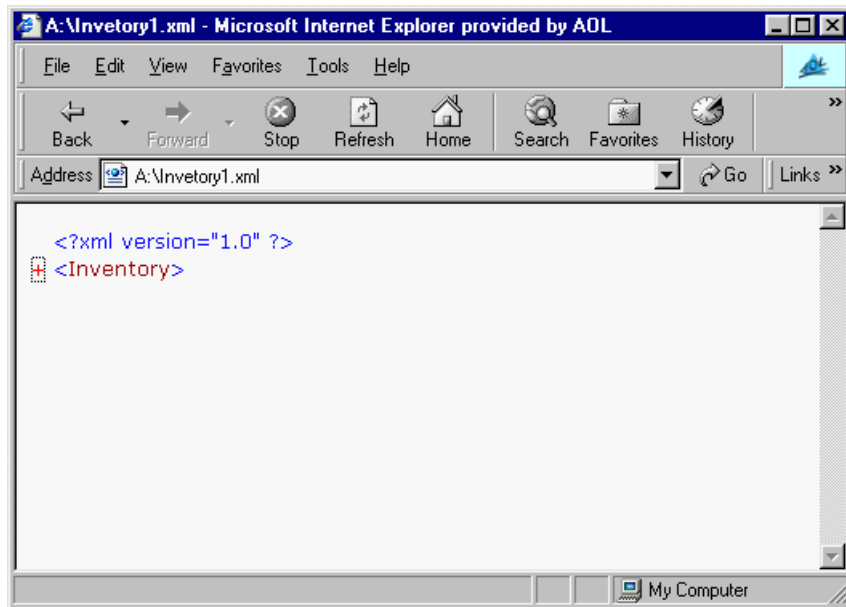
Is a style sheet mechanism that has been specifically developed to meet the needs of Web designers and users. A CSS file can be created and edited manually with a text editor, but one can also write a program in a scripting language i.e. JavaScript that manipulates a style sheet.

The **CSS Document Object Model** is an API for manipulating CSS from within the program.

Extensible Markup Language (XML)



XML: Is constructed by markup tags and has the ability to describe the data associated with the content. Being a descriptive language, an XML author would simply write XML to describe the meaning of the data.



XML

"XML is a metalanguage used to describe the elements within a language"

Example:

One bird flew.

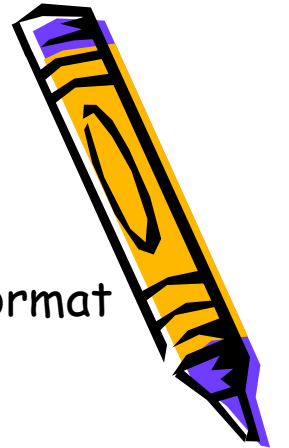
One (adjective)
bird (noun)/(subject)
flew (verb)

<adjective><noun><verb><adverbs>...

Such a structure can be used in the metalanguage to describe an infinite number of sentences.



HTML syntax for Metalinguage



Argument: if we can define the elements of language in HTML format then we can form sentences in the form of:

`<adjective>One</adjective>`

`<noun>cat</noun>`

`<verb>flew</verb>`

Since there are infinite number of sentences that match this format then we can generate a template that can be used to describe the structure of sentences.

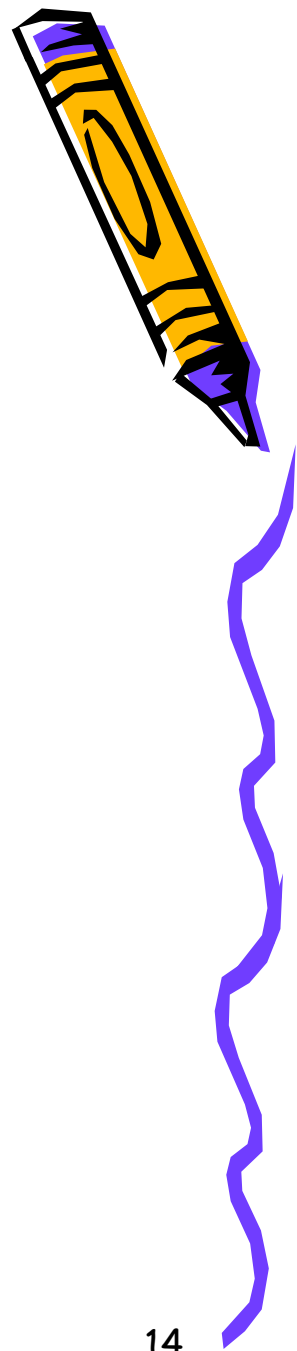
`<adjective></adjective><noun></noun><verb></verb>`

`<adverb></adverb><preposition></preposition> ...`

XML file Tags

General rules:

- No space is allowed e.g. `<bad tag>`
- Punctuation characters a *no no* ! e.g. `<#@@*>`
- No reserved words e.g. `"script"`
- All tags should be in lower case e.g. `<mytag>`



Java - Java Virtual Machine



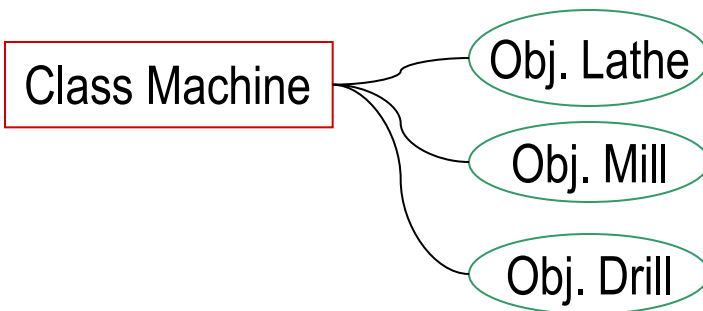
- **Java:** Java is a platform-independent object-oriented programming language designed especially for Internet applications. Like other Windows based application software it supports graphical user interface (GUI) through Abstract Window Toolkit (AWT).
- **Java Virtual Machine:** Java is a portable language, meaning that instead of producing codes that can only be read by specific processors Java produces bytecodes that can be read by Java interpreters. The Java interpreter is called Java Virtual Machine (JVM). The JVM is a virtual simulator of a processor; therefore Java can be read by any machine.

O-O Programmes



What ?
It is ...

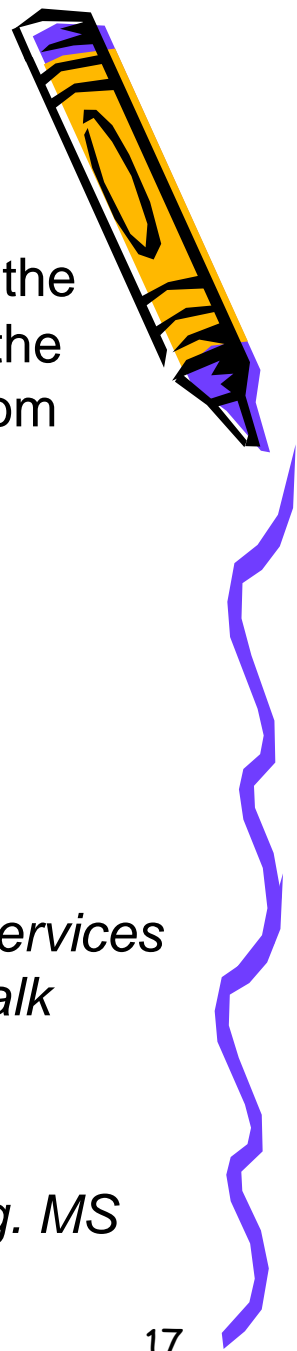
- **Objects:**
 - An instance of a **class**
 - Has *state, behaviour and identity*
 - Example: Class Machine → Objects: Lathe, Mill, Drill



How ?
It has ...

- **Classes**
 - describes *fields and methods* of objects
 - Creates instances of objects

.Net



.Net: is a software (e-Commerce tool) that allows Internet to be the basis of operating systems initiated by Microsoft. It facilitates the information sharing along the network or organisations free from hardware restrictions. .Net consists of:

- **.Net Framework:** *builds and runs web-based application*
- **Developer tools:** *rapid application integrator*
- **Set of servers:** *run, integrate, operate, and manage web services and applications, e.g. SQL Server, Windows Server. BizTalk Server*
- **Client software:** *provide platform for system integration e.g. MS office XP and Windows XP*

.Net Enterprise Servers



The objective of Enterprise servers is to support organisational agility thus enhance e-business activities.

TM

1. BizTalk Server offers a platform for modular and secure business process builder free of OS and programming language restrictions.
2. Microsoft Commerce Server offers e-Commerce solutions by providing frameworks, customer relationship interface, and customer feedback analysis.