Fundamentals of Multimedia

Lecture 1: Introduction

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Welcome
Back!

Fun
University

Outline

- *Introduction to the course*
  - General information
  - Syllabus
  - Course arrangment
  - General rules
- *Introduction to multimedia*
  - Definition
  - History
  - Technology
- *Introduction to HTML*

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- ***Introduction to the course***
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  - History
  - Software tools
- *Introduction to HTML*

General Information

- *Lecture*
  - Lecturer: Mahmoud El-Gayyar
  - Contact: elgayyar@ci.suez.edu.eg
  - Office hours: Sunday, 11:00 am to 12:00 pm (email)
- *Lab*
  - Assistant: Bassel Hafiz
  - Contact: basselhafiz@*yahoo.com*
- *Textbook*
  - CS Department
- *Course web page:*
  - The notes and the assignments will be available online.
  - http://elgayyar.weebly.com/fundamentals-of-multimedia.html

Syllabus of the Lecture

- *Hypertext representation*
- *Text compression*
- *Image data representation*
- *Image data compression*
- *Video data representation*
- *Video compression*
- *Introduction to image retrieval*

Course Organization

- *Midterm exam*
- *Assignments:*
  - Submitted in Groups: 4-6 students
  - One group will be selected to represent its solution
  - Sometimes it helps to do it twice if you feels it is still difficult
  - Deadline is a real deadline ?!! Half of the final mark
  - Practical Exam !!!!!

- *Bonus marks*
  - Optional work, communication, clever or creative solutions
- *I monitor area of difficulty and adjust the material: lectures, assignments, etc.*

General Rules

Coming late up to 10 min	Distract other students
Drinking – if the room permits it	Eating / sleeping
Asking question any time	Not attending the lecture and asking me to repeat it in office hours
Correcting me when I make a mistake	Waiting for the last minute and asking to review the whole semester
Skipping the lecture – not very wise but ok	Mobile phones

Additional Hints

- *Don't wait until the last minute each week*
- *If you get stuck – move around – review material, search Google, then come back*
  - When you look back, you will see that this was all *really* easy
- *When you feel stuck – communicate – ask a friend or come back to your assistant or to me.*

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What is Multimedia ?

- *Different people → Different viewpoints of the term multimedia*
  - **PC Vendor:** PC with sound capability, DVD-ROM, ..
  - **A consumer entertainment vendor:** Smart TV with digital channels, Sound system, ..
  - **A Computer science student:** applications use multiple modalities, including text, images, animation, video, sound, ..
- *Multimedia & CS:*
  - Graphics, HCI, data compression, networking, database systems..

Components of Multimedia

- *Multimedia involves multiple modalities of text, audio, images, drawings, animation, and video. Examples of how these modalities are put to use:*
  - Video teleconferencing
  - Distributed lectures for higher education
  - Tele-medicine
  - Co-operative work environment
  - Searching in large video and image databases (e.g. YouTube)

Video Teleconferencing

Distributed Lectures

Tele-medicine

History of Multimedia

- ***Newspaper:*** *perhaps the first mass communication medium, uses text, graphics, and images.*
- *Connection to CS is actually since a short period:*
  - 1945: ***Memex*** (hypermedia system) from Vannevar Bush
  - 1989: Tim Berners-Lee proposed the World Wide Web (***WWW***)
  - 1990: Hypertext Markup language (***HTML***) was invented
  - 1991: ***MPEG-1*** was approved
  - 1992: ***JPEG*** was approved
  - 1992: ***WWW*** became publicly available
  - 1994: ***Netscape*** (first browser) program was created

Multimedia Software Tools

- *Music sequencing / Digital audio*
  - Pro Audio, Sound Forge
- *Graphics / Image editing*
  - Adobe Photoshop, Adobe Illustrator
- *Video editing*
  - Adobe premiere , Camtasia Studio
- *Animation*
  - Multimedia API: java3D, DirectX, OpenGL
  - Rendering tools: 3d Studio Max
  - GIF animation packages
- *Multimedia authoring*
  - Macromedia Flash , Videoscribe

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Definition of HTML

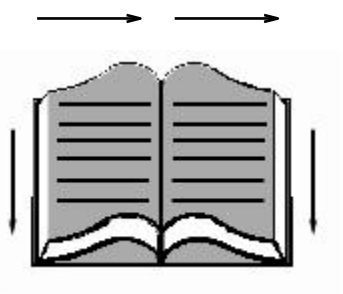
- ***HTML***
  - Hypertext Markup Language
- *Markup Language:*
  - Allow regular text to be marked with special symbols (***tags***) , that tell a program, how to display the text

<I> Hello </I>

- *Hypertext:*
  - Normal text: linear
  - Hypertext: not necessary to be linear

Hypertext and Normal Text

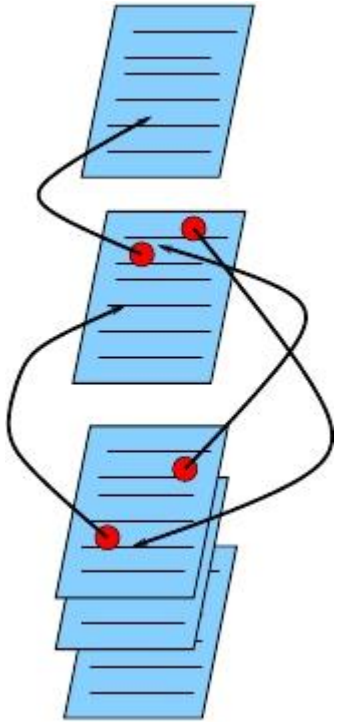
Normal Text



Linear

"Hot spots"

Hypertext



Nonlinear

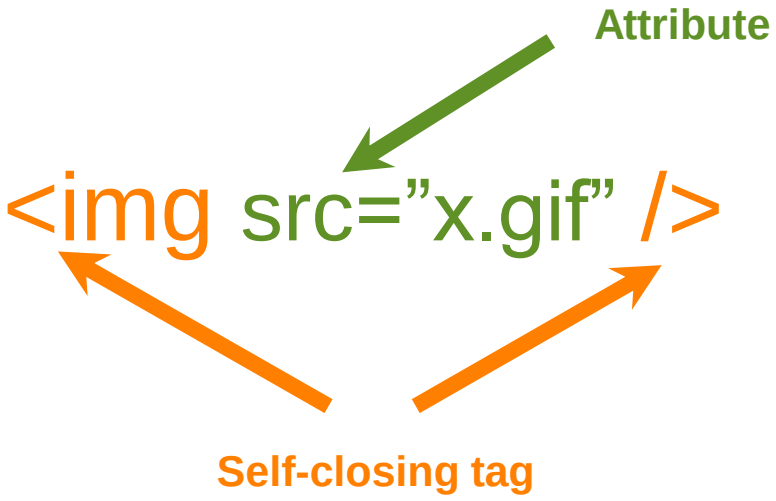
Web Generation

- *HTML documents are plain-text files that can be created using any text editor (.htm, .html files)*

- *WYSIWYG (visual) editors*
  - What you see is what you get editors
  - Microsoft FrontPage, Macromedia Dreamweaver

HTML Tag Basics

- Tags “mark up” the HTML document.
- Read and interpreted by the browser - but not shown.



- A self closing tag does not need a corresponding end tag.

The Basic Outline

```
<html>
  <head>
    <!-- Describes and sets up the document -->
  </head>
  <body>
    <!-- The document to be displayed -->
  </body>
</html>
```

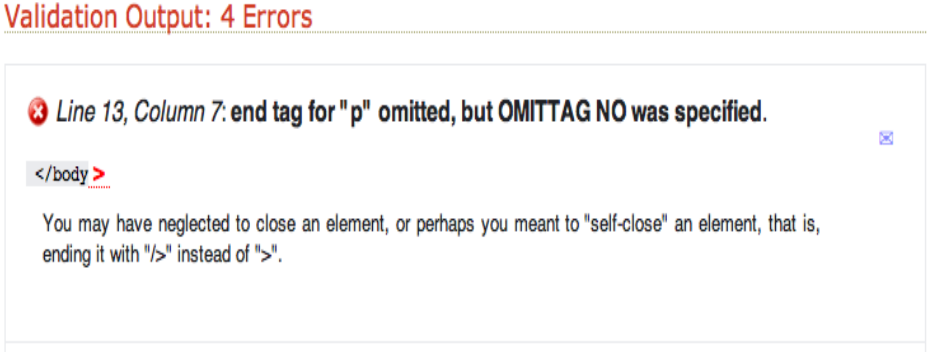
A Simple Page

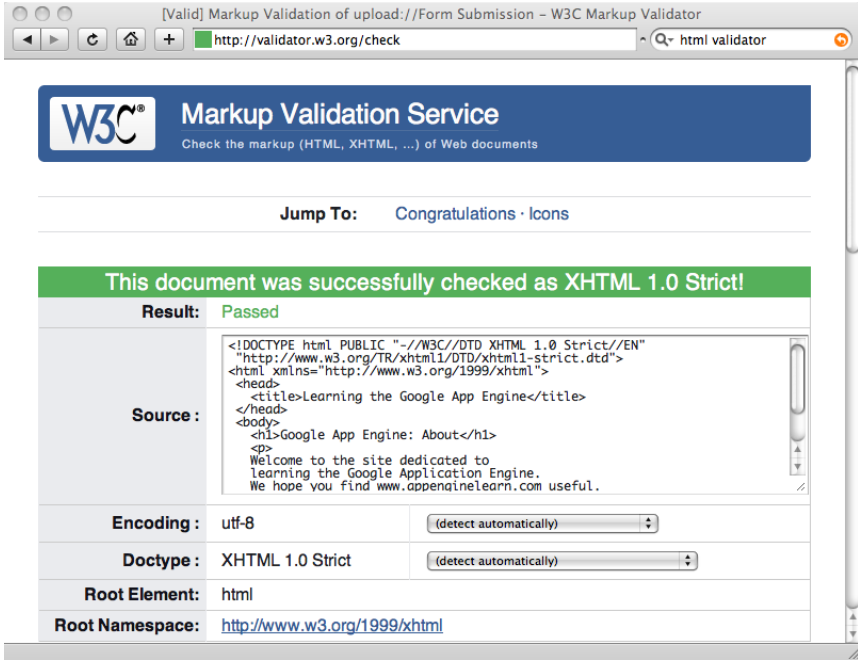
```
<html>
        <head>
                <title>
                Learning the Google App Engine
                </title>
        </head>
        <body>
                <h1>Google App Engine: About</h1>
                <img src="appengine.jpg"
                style="float:right" />
                <p>
                Welcome to the site dedicated..
                </p>
        </body>
</html>
```

A Simple Page

Validating HTML

- *To validate a web page, you can use the online validator*
- *Paste, or upload the HTML or use a URL*
- *http://validator.w3.org*
- *For more information, please check the tutorial and follow the lab*
  - http://www.w3schools.com/html/default.asp





Summary

- *Introduction to the course*
  - Again, don‘t forget the deadline rule
- *Introduction to multimedia*
- *Introduction to HTML*
- *Reference reading: Chapter 1*