



Fundamentals of Multimedia

Lecture 1

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Outline

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

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- ***Introduction to the course***
 - ◆ General information
 - ◆ Syllabus
 - ◆ Course organization
 - ◆ General rules
- ***Introduction to multimedia***
 - ◆ Definition
 - ◆ History
 - ◆ Software tools
- ***Introduction to HTML***

General Information

- *Lecture*

- ◆ Lecturer: Mahmoud El-Gayyar
- ◆ Contact: elgayyar@ci.suez.edu.eg
- ◆ Office hours: Monday, 11:30 am to 12:30 pm (email)

- *Lab*

- ◆ Assistant: Bassel Hafiz, Samiha Mohamed
- ◆ Contact: basselhafiz, samiha_mohamed01098
[@yahoo.com](mailto:basselhafiz@yahoo.com)

- *Textbook*

- ◆ CS Department


- *Course web page:*

- ◆ The notes and the assignments will be available online.
- ◆ <http://elgayyar.staff.scuegypt.edu.eg/fundamentals-of-multimedia/>

Syllabus of the Lecture

- *Hypertext representation*
- *Text compression*
- *Image data representation*
- *Image data compression*
- *Video data representation*
- *Video compression*
- *Introduction to image retrieval*
- *Extra:*
 - ◆ *Audio data representation*
 - ◆ *Audio data compression*

Course Organization

- *2-3 lecture quizzes*
- *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,*

General Rules



ACCEPTED

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)

Components of Multimedia



Components of Multimedia



Components of Multimedia



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** 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
- *Animation*
 - ◆ Multimedia API: java3D, DirectX, OpenGL
 - ◆ Rendering tools: 3d Studio Max
 - ◆ GIF animation packages
- *Multimedia authoring*
 - ◆ Macromedia Flash



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Definition of HTML

- **HTML**

- ◆ Hypertext Markup Language

- *Markup Language:*

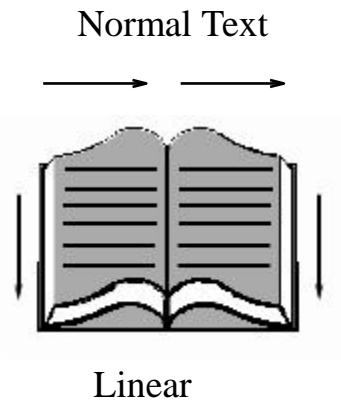
- ◆ Allow regular text to be marked with special symbols (*tags*), that tell a program, how to display the text

`</> Hello </>`

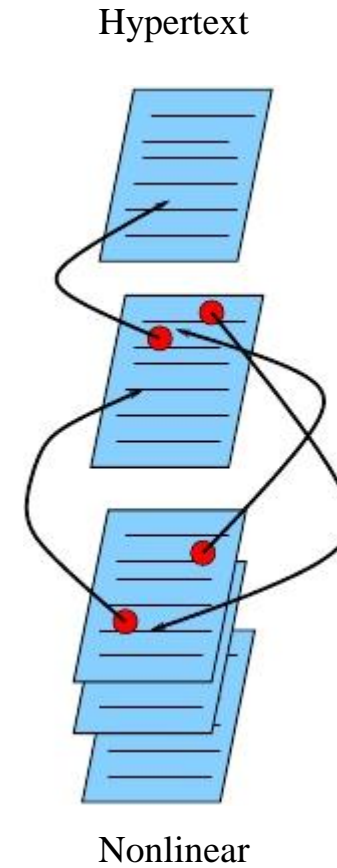
- *Hypertext:*

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

Hypertext and Normal Text



● "Hot spots"



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

Start tag

End tag

`<h1>Hello World</h1>`

- 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.

Attribute

``

Self-closing tag

The Basic Outline

`<html>`

`<head>`

`<!-- Describes and sets up the document -->`

`</head>`

`<body>`

`<!-- The document to be displayed -->`

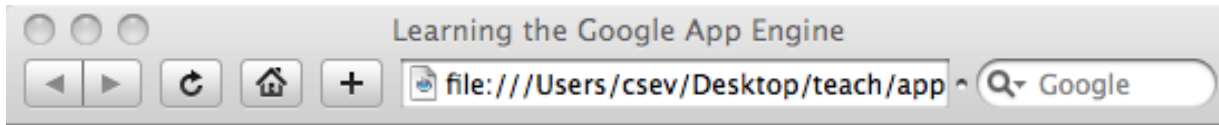
`</body>`

`</html>`

A Simple Page

```
<html>
  <head>
    <title>
      Learning the Google App Engine
    </title>
  </head>
  <body>
    <h1>Google App Engine: About</h1>
    
    <p>
      Welcome to the site dedicated..
    </p>
  </body>
</html>
```


A Simple Page



Google App Engine: About

Welcome to the site dedicated to learning the Google Application Engine. We hope you find www.appenginelearn.com useful.



Google App Engine: About

Welcome to the site dedicated to learning the Google Application Engine. We hope you find www.appenginelearn.com useful.



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>*

Validation Output: 4 Errors

❌ **Line 13, Column 7: end tag for "p" omitted, but OMITTAG NO was specified.**

```
</body >
```

You may have neglected to close an element, or perhaps you meant to "self-close" an element, that is, ending it with ">" instead of ">".

The screenshot shows the W3C Markup Validation Service interface. The browser address bar displays <http://validator.w3.org/check>. The page title is "[Valid] Markup Validation of upload://Form Submission - W3C Markup Validator". The main heading is "Markup Validation Service" with the tagline "Check the markup (HTML, XHTML, ...) of Web documents". Below this, there is a "Jump To:" section with a link to "Congratulations · Icons". A green banner states "This document was successfully checked as XHTML 1.0 Strict!". The "Result:" is "Passed". The "Source:" section shows the HTML code being validated, including the DOCTYPE declaration, XML namespace, and the body content. The "Encoding:" is "utf-8", the "Doctype:" is "XHTML 1.0 Strict", the "Root Element:" is "html", and the "Root Namespace:" is <http://www.w3.org/1999/xhtml>.

Summary

- *Introduction to the course*
 - ◆ Again, don't forget the deadline rule
- *Introduction to multimedia*
- *Introduction to HTML*
- *Reference reading: Chapter 1*