

## Lecture No: 2 Chapter1: Fundamental of multimedia

### 2- Audio

The second element of multimedia we consider is **audio**. The word audio is slightly different from **sound**. Audio consists of the sounds we can hear. This may seem contradictory, but it is well known that humans do not hear all possible sounds. For example, the sound emitted by the dog-whistle is recognized by dogs but not by humans. Audio is one of the most appealing elements of any successful multimedia presentation. The impact of sound sets the mood and establishes the ambience (بيئه, جو, محيط) of a presentation. It can be used in a number of ways in a multimedia application, for example, to reinforce a message or theme, or to catch the interest and alert the audience. As part of audio content in a multimedia system, we may use music, sound effects, or speech to accomplish the goals of our presentation. The audio that appears in a multimedia presentation is of two types. It is either computer generated, or recorded and converted into a digital format.

### 3-Graphic element

Multimedia presentations are predominantly graphics based. Information communicated through pictures is easier to understand and retain. Graphic elements in a multimedia system could be still pictures (like photographs) converted to digital format with the help of scanners, or generated on the computer. They may be flat (or two-dimensional), such as photographs and paintings, or they may appear solid (or three-dimensional), like sculptures and objects around us. They may be either static graphic elements or animated. Further, animations may be two-dimensional, as in old cartoon films, or three-dimensional.

#### **4-Computer-generated text**

It is another element of multimedia. A few words appearing in a predominantly graphic multimedia system can have a powerful effect. On the Internet, text is used much more than on stand-alone multimedia products, so it takes on an added importance. Also, text and art can be mixed together in interesting ways to reinforce the message being transmitted. Text can also be animated in interesting ways.

#### **5- Video**

Finally, we mention that **video** is another element of multimedia. Obviously, video and audio are closely related, and together they are the most effective means of communication that can be a part of the multimedia system.

#### **Application of Multimedia**

There are many application of multimedia we are used daily

- 1- Video teleconferencing
- 2- Distributed lectures for higher education (distance learning).
- 3- Tele-medicine
- 4- Co-operative work environments
- 5- Making multimedia components editable

#### **Video conferencing**

Also cold teleconferencing, in which people in different geographical locations can have a meeting- can see and hear one another- using computers and communications. Video conferencing systems rang from videophones (is a telephone with TV-like screen and built-in camera that allows you to see the person you're calling) to group conference

rooms with cameras and multimedia equipment to desktop system with small video cameras, microphones, and speakers.

Videoconferencing may eliminate the need for some travel for the purpose of meeting and allow people who cannot travel to visit "in person". Many organizations use video conferencing to take the place of face-to-face meetings.

### **Distance learning**

Telecommunication technology is enabling many people to learn outside the classroom, a process called distance learning. Distance learning can be point-to-point, where students gathered at a specific location and the class is transmitted to them in real time (different place, same time). The students are able to see and hear the professor, and the professor can hear the students off-site and may be able to see them as well. The off-site locations may be around the same campus or across the world. Distance learning may also be asynchronous (different place, different time). Many courses are offered over the internet in prepackaged form.

### **Telemedicine**

The use of medical information exchanged from one site to another via electronic communications for the health and education of the patient or healthcare provider and for the purpose of improving patient care. Telemedicine includes consultative, diagnostic, and treatment services.

### **Multimedia and Hypermedia**

History of Multimedia:

- 1. Newspaper:** perhaps the *first* mass communication medium uses text, graphics, and images.
- 2. Motion pictures:** conceived of in 1830's in order to observe motion too rapid for perception by the human eye.
- 3. Wireless radio transmission:** Guglielmo Marconi, at Pon-tecchio, Italy, in 1895.

**4. Television:** the new medium for the 20th century, established video as a commonly available medium and has since changed the world of mass communications.

- **Hypertext** system: meant to be read nonlinearly, by following links that point to other parts of the document, or to other documents.
- **Hypermedia:** not constrained to be text-based, can include other media, e.g., graphics, images, and especially the continuous media.
  1. The World Wide Web (WWW) is the best example of a hypermedia application
  2. Power point
  3. Adobe Acrobat

**Multimedia** means that computer information can be represented through audio, graphics, images, video, and animation in addition to traditional media.

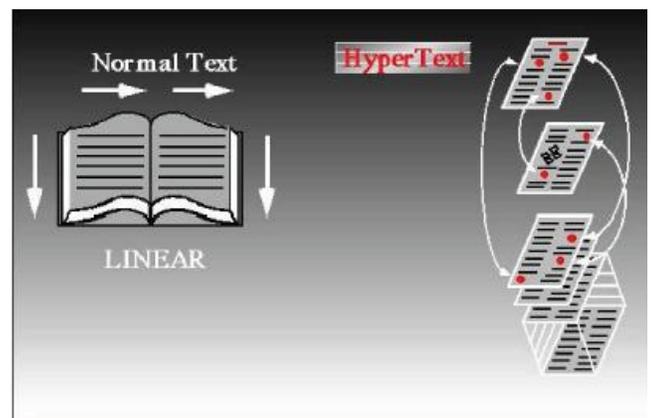
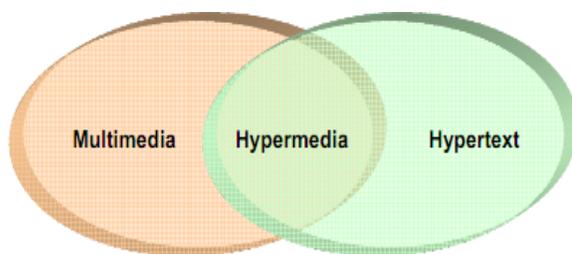


Figure: Hypertext nonlinear text

### Hypermedia in website:

1. Hyperlinking allows the user to “jump” from one part of the multimedia application to another.
2. The World Wide Web is a partial hypermedia system since it supports graphical hyperlinks and links to sound and video files. New hypermedia systems under development will allow objects in computer videos to be hyperlinked