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MULTIMEDIA AND ITS APPLICATIONS

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ABSTRACT: *Multimedia is the field concerned with the computer controlled integration of text, graphics, drawings, still and moving images (Video), animation, audio, and any other media where every type of information can be signified, stored, communicated and handled digitally. Multimedia can be recorded and played, displayed, interacted with or accessed by information satisfied processing devices, such as high-tech and automated devices, but can also be part of a live presentation. Multimedia devices are electronic media strategies used to store and involvement multimedia content. Multimedia is notable from diverse media in fine art; for model, by containing audio it has a broader scope. In the early years of multimedia the term "rich media" was identical with collaborating multimedia, and "hypermedia" was an application of multimedia. In this paper we discussed about the different elements of multimedia along with its applications, features, advantages and disadvantages so on.*

Keywords: *Audio, Video, Animation, Text, graphics, Motion Video*

1. INTRODUCTION

Multimedia has developed an unavoidable fragment of any performance. It has originate a diversity of presentations right from entertaining to education. The development of internet has also enlarged the request for multimedia content. Multimedia is the media that uses numerous forms of information contented and information processing (e.g. text, audio, graphics, animation, and video interactivity) to inform or entertain the user. Multimedia also mentions to the use of electronic media to store and knowledge multimedia content. Multimedia is alike to traditional varied media in fine art, but with a broader opportunity. The term "rich media" is equal for interactive multimedia.

Multimedia elements

- ✓ Text
- ✓ Graphics

- ✓ Audio
- ✓ Video
- ✓ Animation
- ✓ Interactivity

Multimedia may be generally separated into linear and non-linear groups. Direct active content developments without any navigation control for the watcher such as a cinema presentation. Non-linear content suggestions user interactivity to control progress as used with a computer game or used in self-paced computer created exercise. Non-linear content is also known as hypermedia content. Multimedia presentations can be live or noted. A recorded presentation may permit interactivity via a steering system. A live multimedia presentation may allow interactivity via interaction with the presenter or performer.

2. ELEMENTS OF MULTIMEDIA

2.1. Text

Whether or not they have used a computer, most people are familiar with text. Text is the foundation for word processing programs and is still the fundamental information used in many multimedia programs. In fact, many multimedia applications are based on the conversion of a book to a computerized form. This change gives the user instant access to the text and lets him or her display pop-up windows, which give meanings of certain words. Multimedia applications also enable the user to instantly display information related to a certain topic that is being viewed. Most powerfully, the computerized form of a book allows the user to look up information quickly (without referring to the index or table of contents). The Windows operating environment gives the user an almost infinite range of expressing text. As a multimedia programmer, you can choose what font to display text in, how big (or small) it should be, and what color it should be displayed in. By displaying text in more than one format, the message a multimedia application is trying to portray can be made more understandable. One type of application, which

many people use every day, is the Windows Help Engine. This application is a text-based information viewer that makes accessing information related to a certain topic easy.

2.2 Audio Sound:

The combination of audio sound into a multimedia application can offer the user with information not likely finished any other technique of announcement. Some types of information can't be taken efficiently without using sound. It is closely impossible, for instance, to provide a precise word-based explanation of the bear of a heart or the sound of the ocean.

Audio sound can also strengthen the users considerate of information obtainable in another type of media. For example, a description might define what is being seen in an animation clip. This can enhance the understanding of what the application is all about and lead to better comprehension. Experts in learning have found that presenting information using more than one sense aids in later retaining of the information. Most importantly, it can also make the information more interesting to the user. Audio sound is available in several different formats. Today, maybe the greatest collective type of audio is red book audio. This is the normal prerequisite used to mention to customer audio compacted discs. It is an worldwide standard and is formally recognized as IEC 908. This description is called red book audio meanwhile of the color of the cover of the publication that defines its formats. Red book audio sound can also be used in multimedia applications, and it forms the basis of the highest quality sound available. Another audio sound format is the Windows wave file, which can be played only on PCs running the Windows operating environment. A wave file contains the actual digital data used to play back the sound as well as a header that provides supplementary information about the determination and playback rate. Wave files can store any sort of sound that can be verified by a microphone. The last type of audio sound that may be used is known as the Musical Instrument Digital Interface or MIDI for short. The MIDI format is actually a specification invented by musical instrument manufacturers. Rather than being a digitized form of the sound, the MIDI specification is actually a set of messages that describes what musical note is being played. The MIDI requirement cannot accumulation whatever but in

the form of musical notes. MIDI music can be shaped with a sequencer.

2.3. Static Graphics images:

When you imagine graphics images you believably think of "still" images-that is, images such as those in a photograph or drawing. There is no occurrence in these kind of picture. Still graphics images are an all important portion of multimedia because humans are modality adjusted. As the old Chinese saying goes, "A picture is worth a thousand words." Windows is also a sense modality environment. This kind displaying graphics images easier than it would be in a DOS-based environment. Static graphics images have a certain concept of formats and can be created in a number of various ways. Just as you can see an limitless number of photographs or pictures, the types of static graphics images that you can include in a multimedia application are almost unlimited.

2.4. Animation

Animation mention to moving graphics images. The happening of somebody giving CPR makes it much easier to learn internal organ revitalization, rather than just screening a static picture. Just as a static graphics image is a all-powerful form of human action, such is the case with animation. Animation is particularly useful for enlarge concepts that affect movement. Such thought as playing a guitar or hitting a golf ball are hard to exemplify using a single photograph, or even a ordination of photographs ,and equal more difficult to explicate using text. Animation form it easier to portray these characteristic of your multimedia application.

2.5. Full-Motion Video

Full-motion video, such as the images depicted in a television, can add even more than to a multimedia application. Although full-motion video may sound similar an perfect way to add a powerful message to a multimedia application, it is nowhere near the quality you would anticipate after watching television. Full-motion video is still in its occurrence stages on PCs, and it is constricted in resolution and size. Even with precocious methods of data compression, full-motion video can suck up hard disk space faster than waterfalls when poured out of a bucket.

3. USES AND APPLICATIONS OF MULTIMEDIA:

3.1 Multimedia in Education:

Multimedia combining respective media in a one evidently it has more beginning of information. So it is extended used in the field of education and training. Even in conventional method we use audio visual for imparting education, where charts, models etc. were used. Now days the classroom demand is not limited to that accepted method instead it needs audio and visual media. The multimedia incorporate all of them in one system. For the use of multimedia as an education assistance the PC integrated a high quality display. This all has advance the improvement of a wide scope of computer based training. The software package named computer aided direction is accessible that supply a friendly interactive acting of learning.

3.2 Multimedia in Training:

There diverse systems and intelligent tutoring systems accessible to train the students in numerous areas opening from the mathematics of a original abrupt to a difficult surgical process for a medical student. As there sufficient audio clips added these tutorials and an action can be seen from all orientation and repetition so evidently as far as practical skills is obsessed it gives a lot of far that. These packages are just like expert systems and are fully equipped with decision making utility-grade to impact training after judging the competence of a student in the several field. These tutorials incorporate enough number of videos sequences clarify.

3.3 Science and Technology:

Multimedia had a broad application in the field of science and technology. Whether it is an industry or the case of sciences all are benefited by its use. The multimedia application and beneficial for researchers as well as over the world. The multimedia system is competent of transferring audio, and clips in addition to the regular text. It is even capable of sending message and formatted multimedia documents. At the same time the multimedia also helps in live which is a live interaction through audio messages and it is only possible with the multimedia. It reduces the time and cost can be arranged at any moment even in emergencies. It is adequate for communication and meetings. At the same time the multimedia is sufficiency useful services based on images.

3.4 Multimedia in Business:

The business application of multimedia includes, product demos, instant messaging. One the excellent applications are voice and live conferencing. A multimedia can make a audience come live. It is widely used in programs. Such a program can be used by a mechanic and peoples. There are a number of easy to use authoring programs and tools that can even let workers to create their own program. There are a number of applications available that slow to run more smoothly and effectively.

3.5 Multimedia in Games:

One of the most exciting applications of multimedia is games. Now days the live internet pay to play gaming with multiple players has become popular. Actually the first application of multimedia system was in the field of entertainment and that too in the video game industry. The integrated audio and video effects make various types of games more entertaining. Generally most of the video games need joystick play.

3.6 Creative industries:

Creative industries use multimedia for a variety of purposes ranging from fine arts, to entertainment, to commercial art, to journalism, to media and software services provided for any of the industries listed below. An individual multimedia designer may cover the spectrum throughout their career. Request for their skills range from technical, to analytical, to creative.

3.7 Language communication:

With the spread and development of the English language around the world, it has become an important way of communicating between different people and cultures. Multimedia Technology creates a platform where language can be taught. The traditional form of teaching English as a Second Language (ESL) in classrooms have drastically changed with the prevalence of technology, making easier for students to obtain language learning skills. Multimedia motivates students to learn more languages through audio, visual and animation support. It also helps create English contexts since an important aspect of learning a language is developing their grammar, vocabulary and knowledge of pragmatics and genres. In addition, cultural connections in terms of forms, contexts, meanings and ideologies have to be constructed. By improving thought patterns, multimedia develops students' communicative competence by improving

their capacity to understand the language. One of the studies, carried out by Izquierdo, Simard and Pulido, presented the correlation between “Multimedia Instruction (MI) and learners’ second language (L2)” and its effects on learning behavior. Their findings based on Gardner’s theory of the “socio-educational model of learner motivation and attitudes”, the study shows that there is easier access to language learning materials as well as increased motivation with MI along with the use of Computer-Assisted Language Learning.

3.8 Medicine:

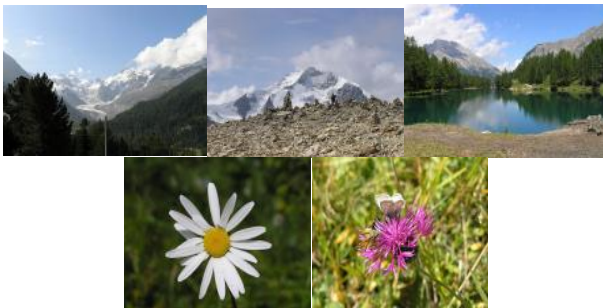
In medicine, doctors can get trained by looking at a virtual surgery or they can simulate how the human body is affected by diseases spread by viruses and bacteria and then develop techniques to prevent it. Multimedia applications such as virtual surgeries also help doctors to get practical training.

4. FEATURES OF MULTIMEDIA:

4.1 Photo gallery:

Show your photos arranged in a nice-looking grid format.

Example:



4.2 Slideshows:

Combine your pictures with music and animate them in a slideshow.

Example:



4.3 Audio player:

Add music, podcasts, or other audio files to your website.

Example: Audio Player



4.4 Video player

Upload videos and display them in a professional player or embed videos directly from video sharing websites such as <http://www.youtube.com>.



4.5 Embedded documents

Embed already existing documents from script.com or other document sharing websites directly into your website for easy viewing.

Example: Invisible Alligators – Children’s book by Hayes Roberts

5. MULTIMEDIA TOOLS AND APPLICATIONS:

A Multimedia Application is an application which uses a multiple media foundations e.g. text, graphics, images, sound/audio, animation and/or video. Multimedia conference covers the certain tools functional in multimedia systems and key multimedia applications. It encompasses of Audio, video dispensation, Virtual reality and 3-D imaging, Virtual reality and 3-D imaging, Multimedia and Artificial Intelligence.

Multimedia Applications is the conception of exciting and innovative multimedia systems that connect information modified to the user in a non-linear communicating format. Multimedia conference deliberates the basic and novel features of multimedia document handling, programming, security, human computer interfaces, and multimedia application facilities.

- Audio, video processing
- Education and training
- Multimedia analysis and Internet
- Artificial Intelligence
- Virtual reality and 3-D imaging
- Wireless, Mobile Computing
- Animation and Graphics
- Visual Communication

6.DELIVERING METHODS OF MULTIMEDIA CONTENT

6.1 CD-ROM

A Compact Disc or CD is an optical disc used to store digital

data, initially established for storing digital audio. The CD, accessible on the market since late 1982, remains the typical playback medium for marketable audio recordings to the current day, however it has lost ground in recent years to MP3 players. An audio CD consists of one or more stereo tracks stored using 16-bit PCM coding at a selection rate of 44.1 kHz. Standard CDs have a diameter of 120 mm and can take hold about 80 minutes of audio. There are also 80 mm discs, sometimes used for CD singles, which hold approximately 20 minutes of audio. The technology was later adapted for use as a data storage device, known as a CD-ROM, and to include record once and re-writable media (CD-R and CD-RW respectively). CD-ROMs and CD-Rs stay widely used practical application in the computer industry as of 2007. The CD and its extensions have been extremely successful: in 2004, the worldwide sales of CD audio, CD-ROM, and CD-R reached about 30 billion discs. By 2007, 200 billion CDs had been sold global.

6.2 DVD

DVD (also known as “Digital Versatile Disc” or “Digital Video Disc”) is a best-selling optical disc storage media format. Its primary uses are video and data storage. Most DVDs are of the identical dimensions as compact discs (CDs) but store more than 6 times the data. Variant of the term DVD often depict the way data is stored on the discs: DVD-ROM has data which can only be read and not written, DVD-R can be written once and then functions as a DVD-ROM, and DVD-RAM or DVD-RW holds data that can be re-written multiple times. DVD-Video and DVD-Audio discs respectively mention to decently formatted and organized video and audio contented. Another types of DVD discs, consider those with video content, may be referred to as DVD-Data discs. The term “DVD” is commonly misused to refer to high density optical disc formats in general, such as Blu-ray and HD DVD. “DVD” was originally used as an initialism for the unofficial term “digital video disc”. It was reported in 1995, at the time of the specification finalization, that the letters officially stood for “digital versatile disc” (due to non-video applications), however, the text of the press release announcing the specification finalization only refers to the technology as “DVD”, making no mention of what (if

anything) the letters stood for. Usage in the present day varies, with “DVD”, “Digital Video Disc”, and “Digital Versatile Disc” all being common.

6.3 About Flash Drives

A USB flash drive is a data storage device that includes flash memory with an integrated Universal Serial Bus (USB) interface. USB flash drives are typically removable and rewritable, and physically much smaller than a floppy disk. Most weigh less than 30 g. As of January 2012 drives of 1 terabytes (TB) are available. and storage capacities as large as 2 terabytes are planned, with steady improvements in size and price per capacity expected. Some allow up to 100,000 write/erase cycles (depending on the exact type of memory chip used) and 10 years shelf storage time. USB flash drives are often used for the same purposes for which floppy disks or CD-ROMs were used. They are smaller, faster, have thousands of times more capacity, and are more durable and reliable because they have no moving parts. Until approximately 2005, most desktop and laptop computers were supplied with floppy disk drives, but floppy disk drives have been abandoned in favor of USB ports. USB flash drives use the USB mass storage standard, supported natively by modern operating systems such as Linux, Mac OS X, Windows, and other Unix-like systems, as well as many BIOS boot ROMs. USB drives with USB 2.0 support can store more data and transfer faster than much larger optical disc drives like CD-RW or DVD-RW drives and can be read by many other systems such as the Xbox 360, PlayStation 3, DVD players and in some upcoming mobile smart phones.

6.4 About Internet

The Internet is a global system of interconnected computer networks that use the standard Internet protocol suite (TCP/IP) to serve billions of users worldwide. It is a network of networks that consists of millions of private, public, academic, business, and government networks, of local to global scope, that are linked by a broad array of electronic, wireless and optical networking technologies. The Internet carries an extensive range of information resources and services, such as the inter-linked hypertext documents of the World Wide Web (WWW) and the infrastructure to support email.

7. ADVANTAGES OF MULTIMEDIA

Creativity:

It brings more life to discussions.

Variety:

It caters all types of learners.

Cost-effective:

Multimedia mostly requires only a one-time purchase of devices and software, which can be used unlimited times thereafter.

Evaluation:

It offers ideal learning assessment tools which are also entertaining for the students.

Realistic Approach:

It provides approaches which make learning more realistic.

Wide Variety of Support:

Multiple media formats are available for use, with different models being able to create multimedia.

Trendy:

The current trend of culture leans toward technology, and a great number of resources are being made available for different media formats.

8. DISADVANTAGES OF MULTIMEDIA

Accessibility:

Multimedia definite quantity electricity to be operated, which may not be accessible in some rural areas or may not be systematically acquirable due to deficit and intermission.

Distracting:

Multimedia may take away the focusing from the lesson due to its attention-grabbing formats.

Costly:

Production of multimedia is more costly than others because it is made up of more than one medium.. Production of multimedia requires an electronic device, which may be relatively expensive. Multimedia requires electricity to run, which adds to the cost of its use.

Time Consuming:

Creating multimedia requires more time.

Requires Mastery :

Multimedia requires consistent and long practice to master, which may take a lot of time and energy from the user.

Limited Support/Compatibility:

There is a wide variety of gadget models which arouses incompatibilities of media formats.

Fragile:

The device used for multimedia must be used with attention; vulnerability to moisture or other elements could cause costly, repairable damage which would require another purchase of a device.

9. CONCLUSION:

There are two ways we can think through with multimedia. The first is to think about multimedia through definitions, histories, examples, and theoretical problems. The second way is to use multimedia to deliberation and to communicate thought. The domain study of multimedia system is a "thinking-about" that is typically communicated through academic locale like textbooks, articles, and lectures. "Thinking-with" is the occupation of multimedia that has its own traditions of linguistic unit, forms of organization, tools, and outcomes. To think-with multimedia is to use multimedia to research ideas and to communicate them. In a field like multimedia, where what we think about is so new, it is important to think-with. Scholars of multimedia should take seriously the challenge of creating multimedia as a way of thinking about multimedia and attempt to create exemplary works of multimedia in the cognitive content of the humanities.

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