003:

APPLICATIONS OF MULTIMEDIA

APPLICATIONS OF MULTIMEDIA:- BUNDLED S/W, MULTI-PURPOSE DIGITAL SIGNAL PROCESSORS

TuK

Bachelor Information Technology/Communications and Computing
Networks Year 4 Semester 1

MULTIMEDIA APPLICATIONS / SYSTEMS AND APPLICATIONS

SUBJECT CODE: ECCI/ECII 4102

OVERVIEW

1. Introduction & Attendance Registration
2. Lecture Aims & Objectives
3. Lecture Outline
4. Chapter from Recommended Reading List
5. Lecture 3 Topic
6. Q&A

LECTURE
AIMS & OBJECTIVES

1) To introduce students to Application of multimedia theories.
2) To equip students with the knowledge to develop and use applications of multimedia
3) To develop students' expertise in the use of applications of multimedia tools and techniques

LECTURE OUTLINE

3. Application of Multimedia:
    1. Bundled s/w
    2. Multi-purpose digital signal processors

CHAPTER FROM RECOMMENDED READING LIST

CHAPTER 3. “Applications of Multimedia”,

from ““Multimedia Foundations: Core Concepts for Digital Design”

APPLICATIONS OF MULTIMEDIA

BUNDLED S/W
&

MULTI-PURPOSE

DIGITAL
SIGNAL
PROCESSORS

http://elearning.tukenya.ac.ke

INTRODUCTION MULTIMEDIA: BASIC MULTIMEDIA CONCEPTS, TEXT, GRAPHICS, SOUND, VIDEO & ANIMATION IN A SINGLE APPLICATION

SHAPE SHIFTING TV

-aka ssTV

-Integration of traditional television technology with additional electronic services and interactive programs

-Runs on Narrative Structure computer Language (NSL)

-Uses generic author and delivery software system to implement NSL

-Examples of ssTV:- news with interactivity

INTRODUCTION MULTIMEDIA: BASIC MULTIMEDIA CONCEPTS, TEXT, GRAPHICS, SOUND, VIDEO & ANIMATION IN A SINGLE APPLICATION

SHAPE SHIFTING TV

-Actions can be taken by active viewers or automatically generated on their behalf

-Result? changes to the “normal” audiovisual streams for more rewarding viewing experiences.

-Two methods of interaction:

a) Each stream can be pre-edited manually then delivered concurrently;(i.e. iTV)

b) Streams can be generated automatically in responses to active viewers’ interaction (ssTV)

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APPLICATIONS:-ARCHITECTURE OF INTERACTIVE T.V.

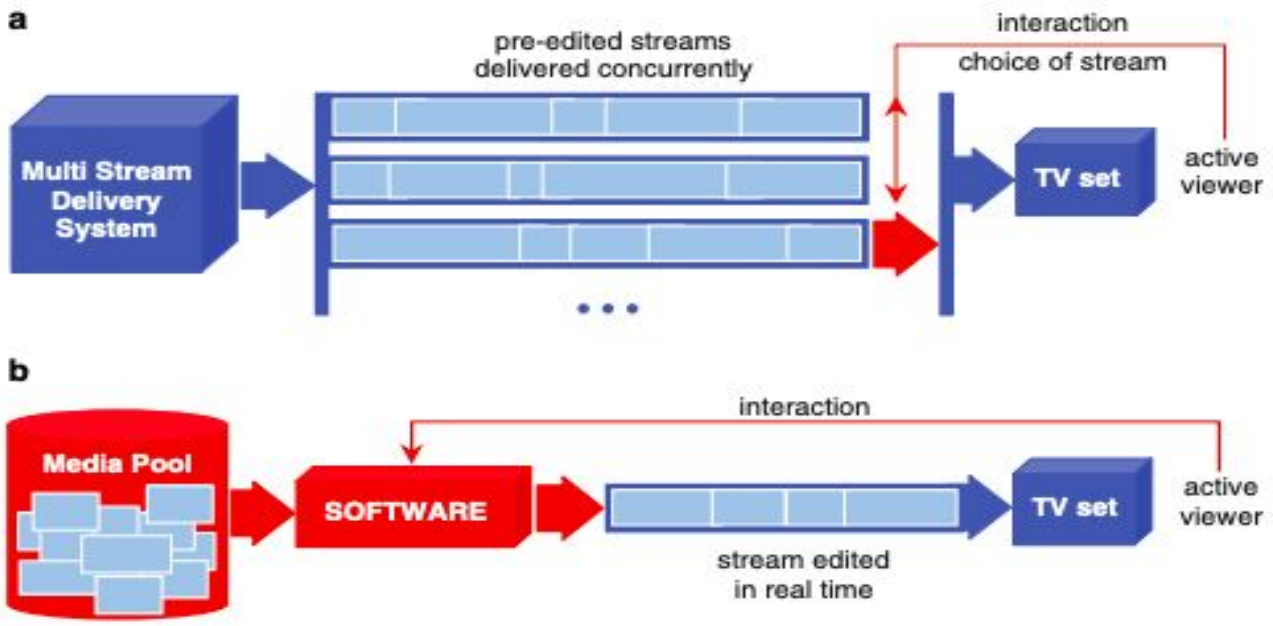

Fig. 1 Methods of interactive narration: choice from pre-edited streams **(a)**; streams edited in real time **(b)**

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SHAPE SHIFTING TV

-Combined multi-stream synchronous and asynchronous delivery can lead to to more sophisticated interaction modes/ more complex interactive narratives.

-Streams could deliver synchronised content with well defined and constructed transition points, and the rest is supplementary content;

-Multi-stream synchronous delivery implements viewpoints (through choice of camera and camera angle) and voice and style of commentary, e.g. live football coverage

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SHAPE SHIFTING TV

-ssTV is *truly* interactive screen media narratives but made with pre-recorded material

-Able to unfold differently, adapt real time in response to interaction from the active viewers.

-Connects narrativity with interactivity.

-Appropriate technologically supported interactivity adds strength to storytelling

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SHAPE SHIFTING TV

Generic authoring and delivery software system:-

-The Authoring Environment provides a visual interface(the Narrative Canvas), basic tools for testing and validation, a narrative object preview to visualize any narrative object, and playlist viewer

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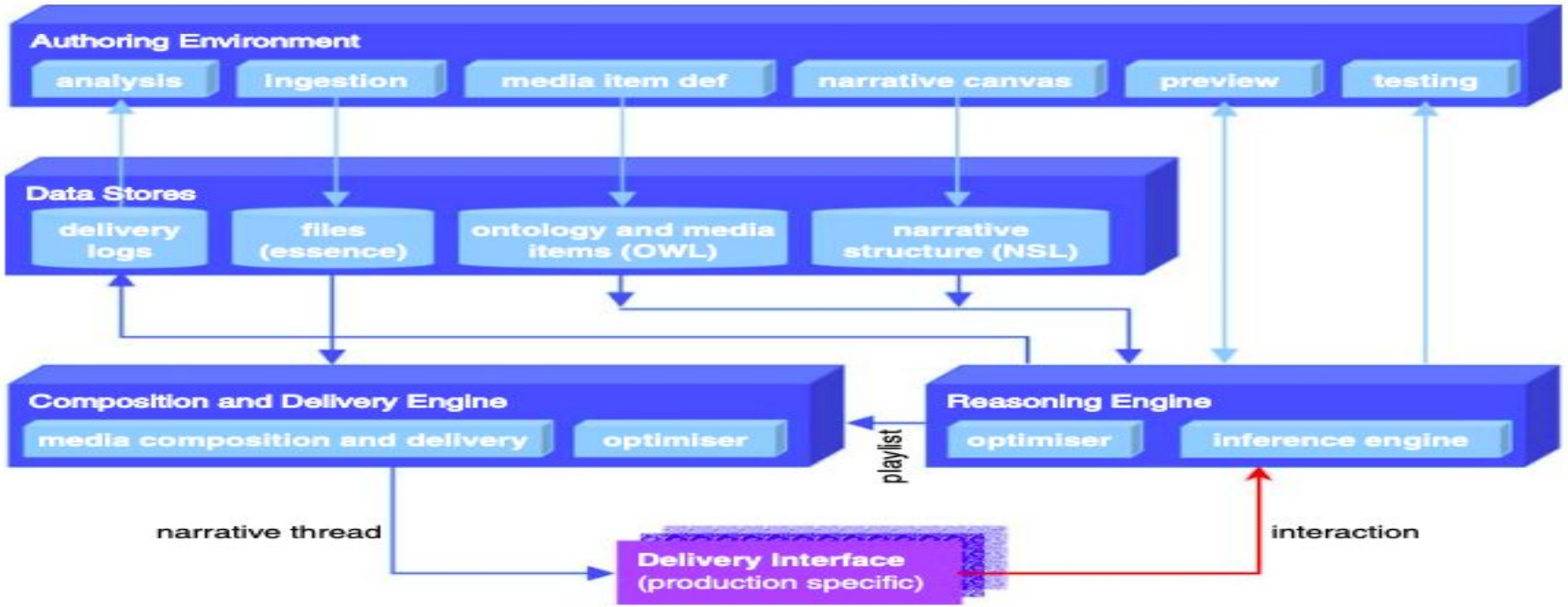
APPLICATIONS:-ARCHITECTURE OF INTERACTIVE TV



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EXAMPLE OF SHAPE SHIFTING TV

Accidental lovers(AL) musical comedy

-AL has a cyclic structure i.e. events are recounted over and over again to bring new meanings to the story.

-Events are not hard coded in a linear structure but instead new narratives are constructed on the basis of engager input.

-Interaction is carried out through unstructured SMS text messages sent in response to the developing drama to determine the unfolding story through keyword-logic.

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EXAMPLE OF SHAPE SHIFTING TV

-AL is constructed as a superimposition of voice overs on video clips.

-There is very little lip-sync material.

-The logic of interaction determines the choice and sequence of the video clips and choice of voiceovers.

-New meanings can emerge by overlaying different voice overs with different video clips.

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EXAMPLE OF SHAPE SHIFTING TV

-AL is configurable on two levels:
micro/discourse and macro/plot.

-Micro/discourse level:-

-immediate response to aggregated engager input

-Affects the nuances of the story but not the plot.

-The sequence of events and their outcome remains fixed but the media items with which they are recounted respond to aggregated input on the basis of a keyword-logic.

e.g. keyword loneliness= initiate loneliness discussions but must be consistent with the plotline as a more subtle effect of the interaction,

-The atmosphere of the story is determined by choosing video clips and voice overs of a mood corresponding to that extracted from the engagers' SMSs.

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EXAMPLE OF SHAPE SHIFTING TV

-Macro/plot level:-

-Engagers can influence the plot.

-Cumulated engager input determines the choice of the main events of the story.

-The micro level responses are substantially more frequent than the macro level responses.

APPLICATIONS OF MULTIMEDIA-DIGITAL MAGAZINE

https://parametric.press/issue-02/

Parametric Press
The Climate Issue

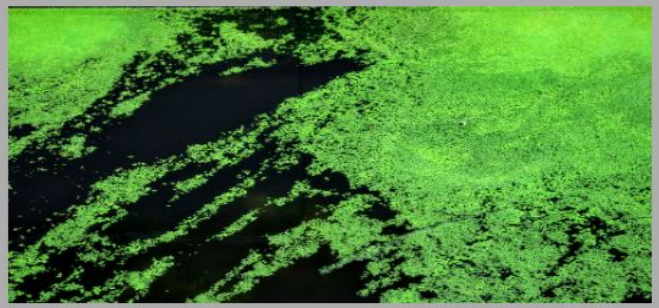
Your Personal Carbon History
Aatish Bhatia

The Corporations Behind Climate Change
Geoffrey Litt, Seth Thompson

Tiny Algae and the Political Theater of Planting One Trillion Trees
Benjamin Cooley

Drought of the Sinking Delta
Christina Orieschnig

The Hidden Cost of Digital Consumption
Halden Lin, Aishwarya Nirmal, Shobhit Hathi, Lilian Liang



To fight climate change, it's time to start thinking big by thinking small.

APPLICATIONS OF MULTIMEDIA

-Publishing interactive print media content requires:-

a. Combining text, code, and other media
b. Reusable components,
c. Custom data visualizations,
d. Publishing engines etc.

to create data visualization and interactive storytelling

APPLICATIONS OF MULTIMEDIA

WHY COMPUTABLE DOCUMENT FORMAT (CDF) PAPER?

-”A picture is worth a thousand words."

-However many times a single static image is not enough to convey understanding of a difficult concept.

-Movies or animated images, e.g. animated GIF format, are especially helpful for explaining concepts involving acoustic phenomena e.g. waves and vibration, or concepts that involve motion, oscillation, and propagation which beg for animation.

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WHY COMPUTABLE DOCUMENT FORMAT (CDF) PAPER?

-There are times when it would be preferable for the viewer to be able to interact with the animation, e.g. to change values of one or more parameters, and to see the result of such changes in real time.

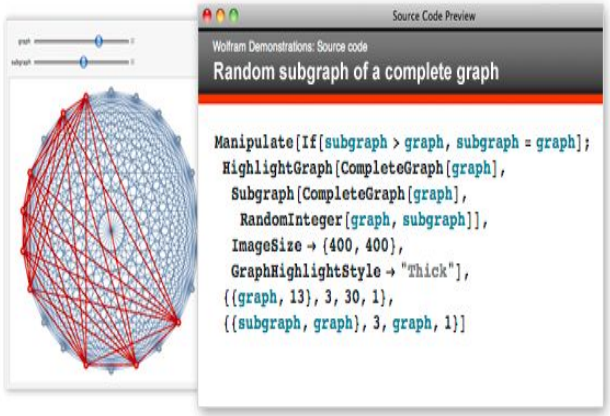
-This is a useful education tool for explaining the concepts of superposition and interference.

APPLICATIONS OF MULTIMEDIA

WHY COMPUTABLE DOCUMENT FORMAT (CDF) PAPER?

-Potentially more useful if the animation had a slider, or allowed the viewer to adjust or allowed the viewer to pause the pattern to observe the conditions of constructive and destructive interference or some point between the two extremes.

-Websites with interactive Java applets have been around for several years;



ıe Resources section to learn more »

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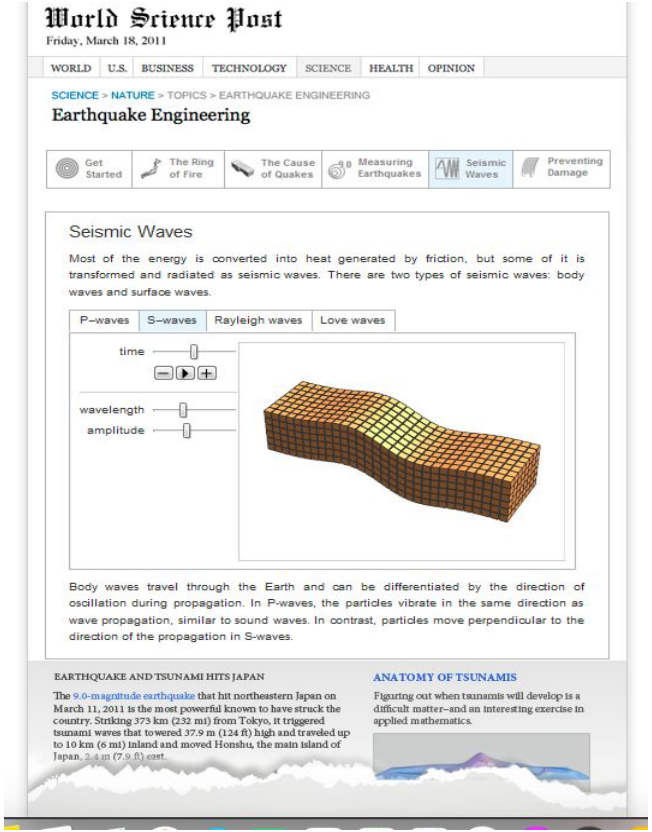
COMPUTABLE DOCUMENT FORMAT (CDF) PAPER

-Electronic document format for authoring dynamically generated interactive content.

-Created by Wolfram Research In 2011

-Offers an interactive platform for visualization of any content

-Allows an user to perform client-side advanced mathematical calculations in real time.



APPLICATIONS OF MULTIMEDIA

COMPUTABLE DOCUMENT FORMAT (CDF) PAPER

-Designed for easy creation of documents with graphic user interface controls of the operating system.

-Users can change the parameters of defined functions dynamically through these controls

-The properties of CDF compete in technical focus with static pdf documents in the field of presentations, articles and ebooks.

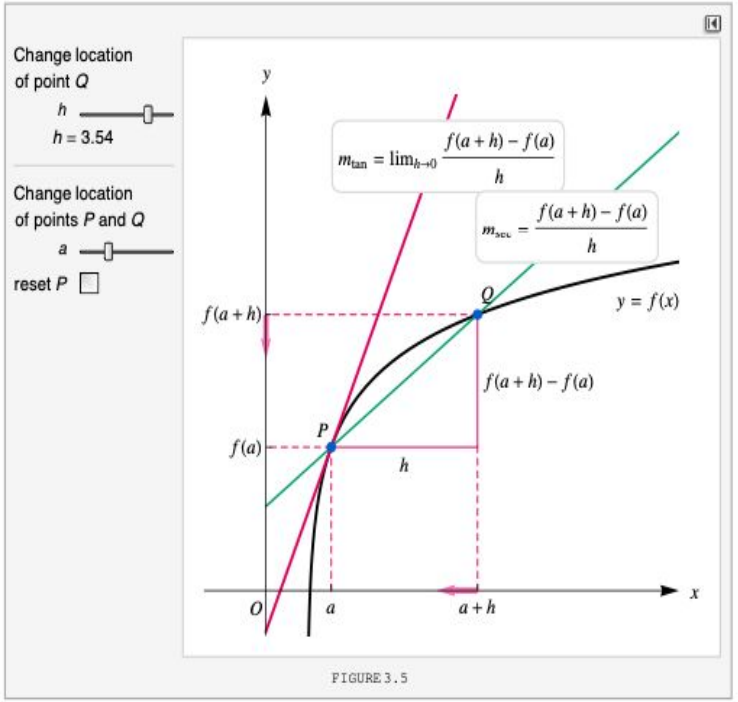


FIGURE 3.5

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COMPUTABLE DOCUMENT FORMAT (CDF) PAPER

-It is a clean text editor with support for style sheets, interactive elements, and superior calculators with advanced graphical outputs e.g. graphs and 3D objects in perspective, which can be rotated.

APPLICATIONS OF MULTIMEDIA

IDYLL

-Open-source markup language and toolkit for producing interactive web pages

- Idyll compiles markup files to full bundle HTML, JS and CSS that can run on any browser

-Static blog engines e.g. Wordpress, Blogger etc enable people to write clean, concise markup that can be rendered on the web,

-Don’t allow for dynamic elements without advanced customization.

-Dynamic content is far removed from post contents, and is typically lumped in or inserted via an iframe.

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IDYLL

-Contains archive link to WARC/WACZ files which store all information associated to articles, and can be run and re-read

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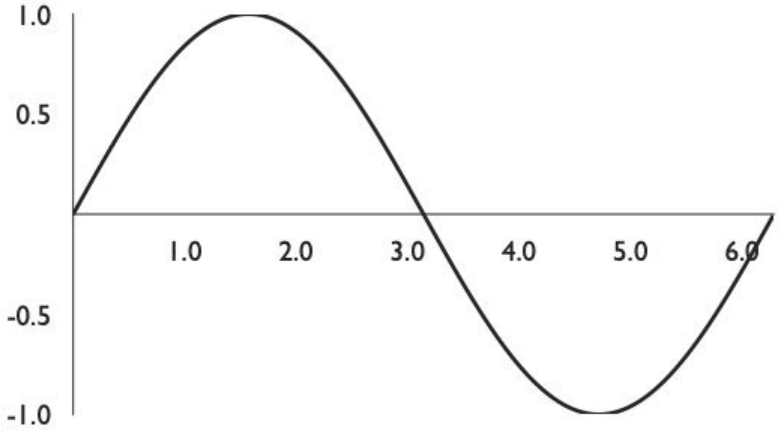
MAIN NAVIGATION FLOW BETWEEN PARAMETRIC PRESS



-features include force directed layouts and Kernel density estimation as well as graph search algorithms

-Familiar markup with special syntax allows input of text and embedding JavaScript inline with text.

-Also uses chart components