

Multimedia Authoring System and its Types

only for **CS 1st Year**
(Multimedia & Animation)

Presented by REETA

Introduction to Multimedia Authoring Tools

- ▶ Multimedia authoring tools provide the framework for organizing and editing the elements of a multimedia project.
- ▶ Authoring software provides an integrated environment for combining the content and functions of a project.
- ▶ It enables the developer to create, edit, and import data.

Multimedia Authoring Tools

- Also known as authorware, a program that helps you write hypertext or multimedia applications.
- Authoring tools usually enable you to create a final application merely by linking together objects, such as a paragraph of text, an illustration, or a song. By defining the objects' relationships to each other, and by sequencing them in an appropriate order.
- Most authoring systems also support a scripting language for more sophisticated applications.
- The distinction between authoring tools and programming tools is not clear-cut. Typically, though, authoring tools require less technical knowledge to master and are used exclusively for applications that present a mixture of textual, graphical, and audio data.

2.1 What is Multimedia Authoring

- ▶ **Multimedia Authoring** → the process of creating multimedia application.
- ▶ During authoring, you might need to organize or edit the elements of your multimedia project, create user interface and designing interactivity.
- ▶ This can be achieved through the use of authoring programs / tools.

Introduction to Multimedia Authoring Tools

- ▶ Authoring system in multimedia.
- ▶ Features of authoring tools.

Authoring System in Multimedia

- ▶ In multimedia authoring systems, multimedia elements and events are often regarded as objects.
- ▶ Objects exist in a hierarchical order of parent and child relationships.
- ▶ Each object is assigned properties and modifiers.
- ▶ On receiving messages, objects perform tasks depending on the properties and modifiers.

Features of Authoring Tools

- ▶ Editing and organizing features.
- ▶ Programming features.
- ▶ Interactivity features.
- ▶ Performance tuning and playback features.
- ▶ Delivery, cross-platform, and Internet playability features.

Editing and Organizing Features

- ▶ Authoring systems include editing tools to create, edit, and convert multimedia elements such as animation and video clips.
- ▶ The organization, design, and production process for multimedia involves storyboarding and flowcharting.
- ▶ Visual flowcharting or overview facility illustrates project structure at a macro level.

Programming Features

- ▶ Visual programming with icons or objects is the simplest and easiest authoring process.
- ▶ Visual authoring tools such as Authorware and IconAuthor are suitable for slide shows and presentations.
- ▶ Authoring tools offer 'very high level language' (VHLL) or interpreted scripting environment.

Interactivity Features

- ▶ Interactivity gives the end user control over the content and flow of information in a project.
- ▶ Simple branching is the ability to go to another section of the multimedia production.

Interactivity Features

- ▶ Conditional branching is an activity based on the results of IF-THEN decisions or events.
- ▶ Structured language supports complex programming logic, subroutines, event tracking, and message passing among objects and elements.

Performance Tuning and Playback Features

- ▶ Achieving synchronization is difficult, considering that performance of the different computers used for multimedia development and delivery varies.
- ▶ Authoring system should facilitate precise timing of events.
- ▶ It should enable developers to build a part of a project and then test it immediately.

Delivery, Cross-Platform, and Internet Playability Features

- ▶ Delivering the project may require building a run-time version of the project, using the multimedia authoring software.
- ▶ Run-time version or standalone allows a project to play back without the complete authoring software and all its tools and editors.

Delivery, Cross-Platform, and Internet Playability Features

- ▶ It is important to use tools that facilitate easy transfer across platforms.
- ▶ Authoring systems provide a means for converting their output to be delivered within the context of HTML or DHTML.

Types of Multimedia Authoring System

- Dedicated Authoring System
 - Microsoft Power Point
- Timeline based Authoring System
 - e.g. Adobe Flash
- Programmable Authoring System
 - Javascript

2.2 Some Useful Editing and Authoring Tools

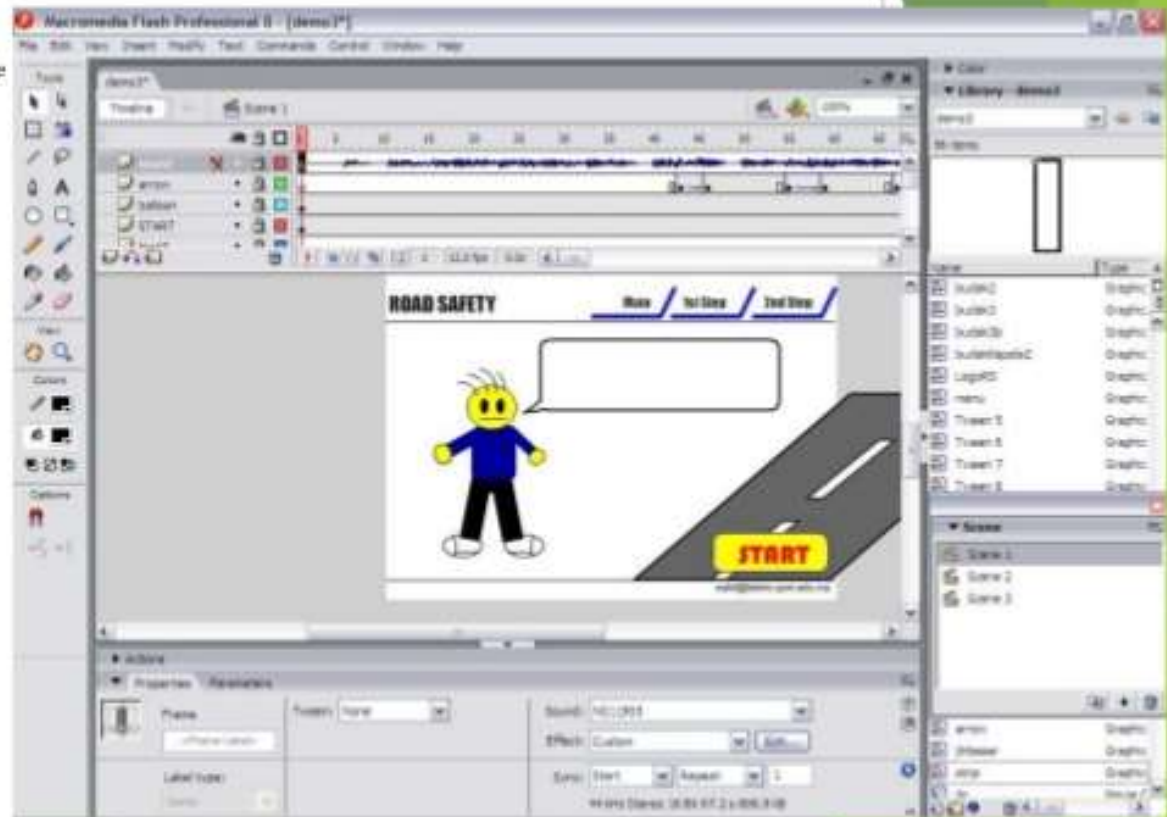
- ▶ Use to merge multimedia elements (text, audio, graphic, animation, video) into a project.
- ▶ Designed to manage individual multimedia elements and provide user interaction (if required).



Authoring Tools

Example:

- Macromedia Authorware
- Macromedia Director
- Macromedia Flash
- Microsoft Power Point

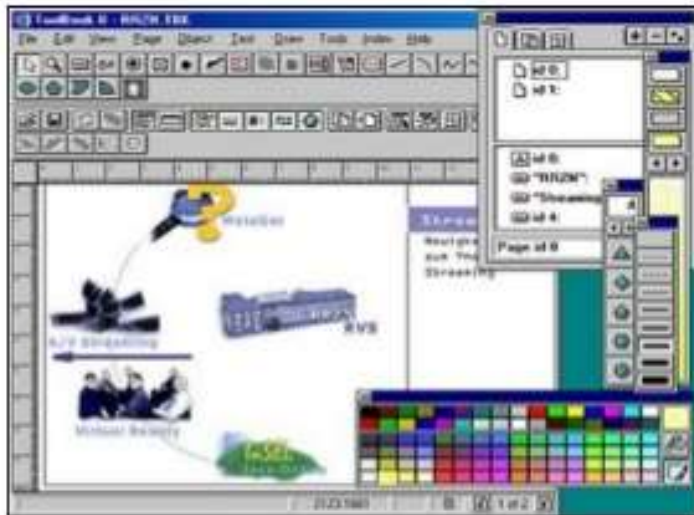


2.3 Authoring Paradigms

- ▶ *Authoring metaphor* == *authoring paradigm* → for easier understanding of the methodology employed to create multimedia applications.
 - a) Scripting-language metaphor
 - b) Slide show metaphor
 - c) Hierarchical metaphor
 - d) Iconic/Flow-control metaphor
 - e) Frames metaphor
 - f) Card/Scripting metaphor
 - g) Cast/Score metaphor

a) Scripting Language Metaphor

- ▶ uses a special language to enable interactivity (button, mouse, etc), and to allow conditionals, jumps, loops, functions/macros
- ▶ e.g., OpenScript in Toolbook by Asymetrix

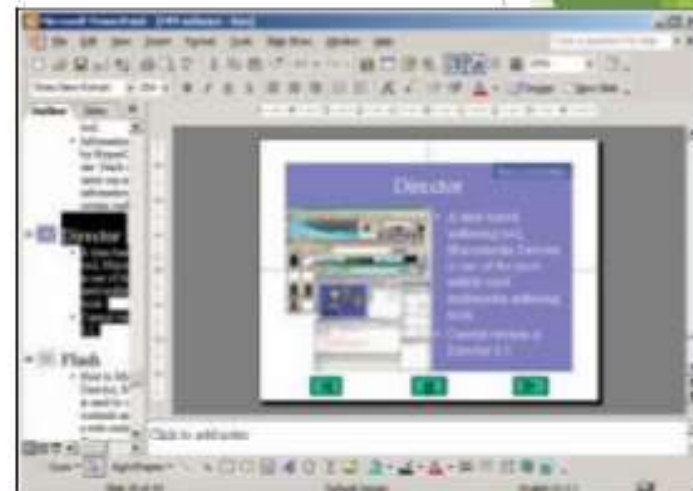
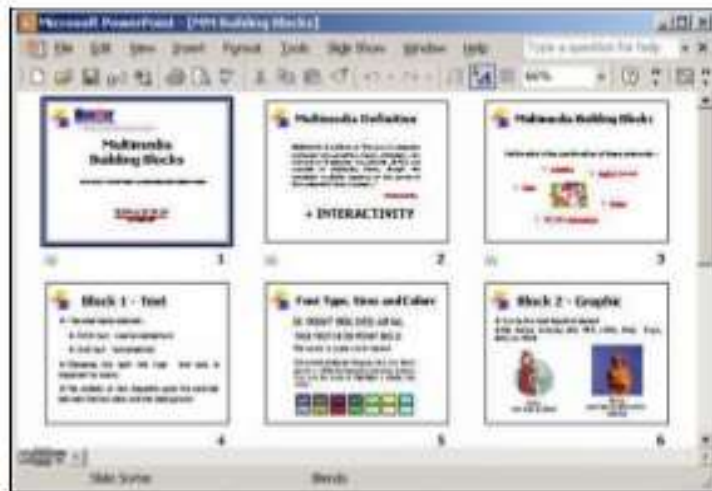


```
on click of movie 1 do
  send message of this object "displayed" to
  the button labeled "displayed"
  -- play
  send message of this object "displayed" to
  the
  -- all want to start and end at specified
  times
  send message of this object "displayed"
  to the
  --
```

Example of OpenScript

b) Slide Show Metaphor

- ▶ by default a linear presentation
- ▶ However, tools exist to perform jumps/hyperlink - seldom used
- ▶ e.g., PowerPoint, ImageQ

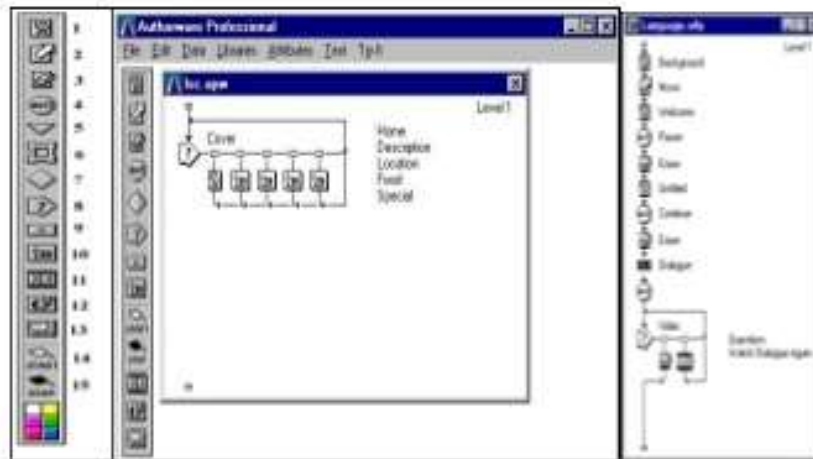


c) Hierarchical Metaphor

- ▶ User-controllable elements are organized into a tree structure.
- ▶ Often used in menu-driven applications

d) Iconic/Flow-control Metaphor

- ▶ graphical icons are available in a toolbox
- ▶ Authoring proceeds by creating flow chart with icons attached.
- ▶ e.g., Authorware by Macromedia



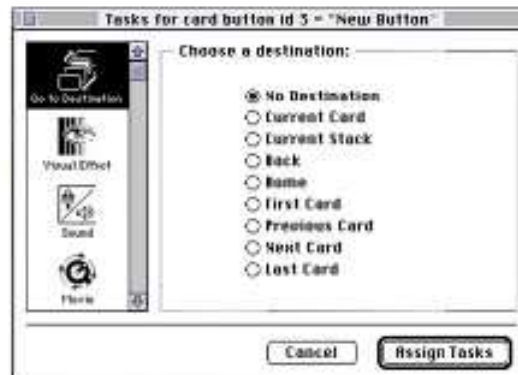
e) Frames metaphor



- ▶ As in iconic/flow-control metaphor, but uses C language as the programming language
- ▶ rather than represent the actual flow of the program, links between icons are more conceptual

f) Card/Scripting Metaphor

- ▶ index-card structure, good for hypertext/hypermedia
- ▶ e.g., SuperCard, HyperCard by Apple

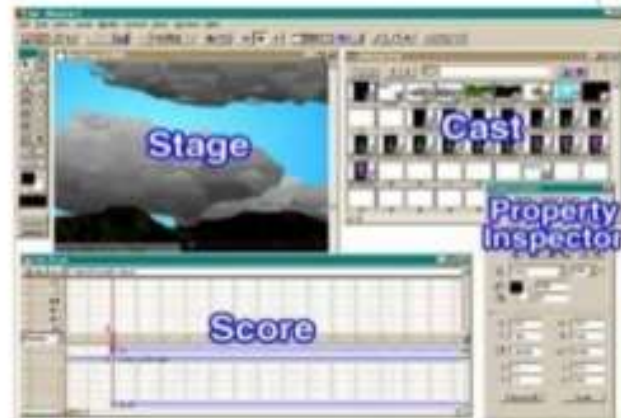


Card or Page based Tools

- The elements are organized as pages of a book or a stack of cards.
- Card-or page-based authoring systems are best used when the bulk of your content consists of elements that can be viewed individually
- Link these pages or cards into organized sequences.
- Jump, on command, to any page
- Play sound elements and launch animations and digital video.
- **HyperCard, SuperCard, Media Object, Tool Box, Visual Basic, PowerPoint, Astound** are some of the Card based tools.

g) Cast/Score/Scripting Metaphor

- ▶ with cast members, music scores, and scripting language;
- ▶ many synchronous horizontal "tracks" simultaneously shown in vertical columns;
- ▶ e.g., Director by Macromedia (Uses Lingo = scripting language)



Design issues for multimedia Authoring

1. Display Resolution
2. Data Formats for captured data
3. Compression Algorithms
4. Network Interfaces
5. Storage Formats

Design Approaches to Authoring

1. Hypermedia application design
2. User Interface Design
3. Multimedia Database design
4. Multimedia Presentation design

Thank You