

Chapter 3

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Multimedia Authoring Tools

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- ***Authoring System***
- **use of authoring system**
- **Multimedia Authoring Paradigms**
- **Features of Authoring Tools**
- **Types of Authoring Tools**
- **Issues in Multimedia Application Design**

What is Authoring System?

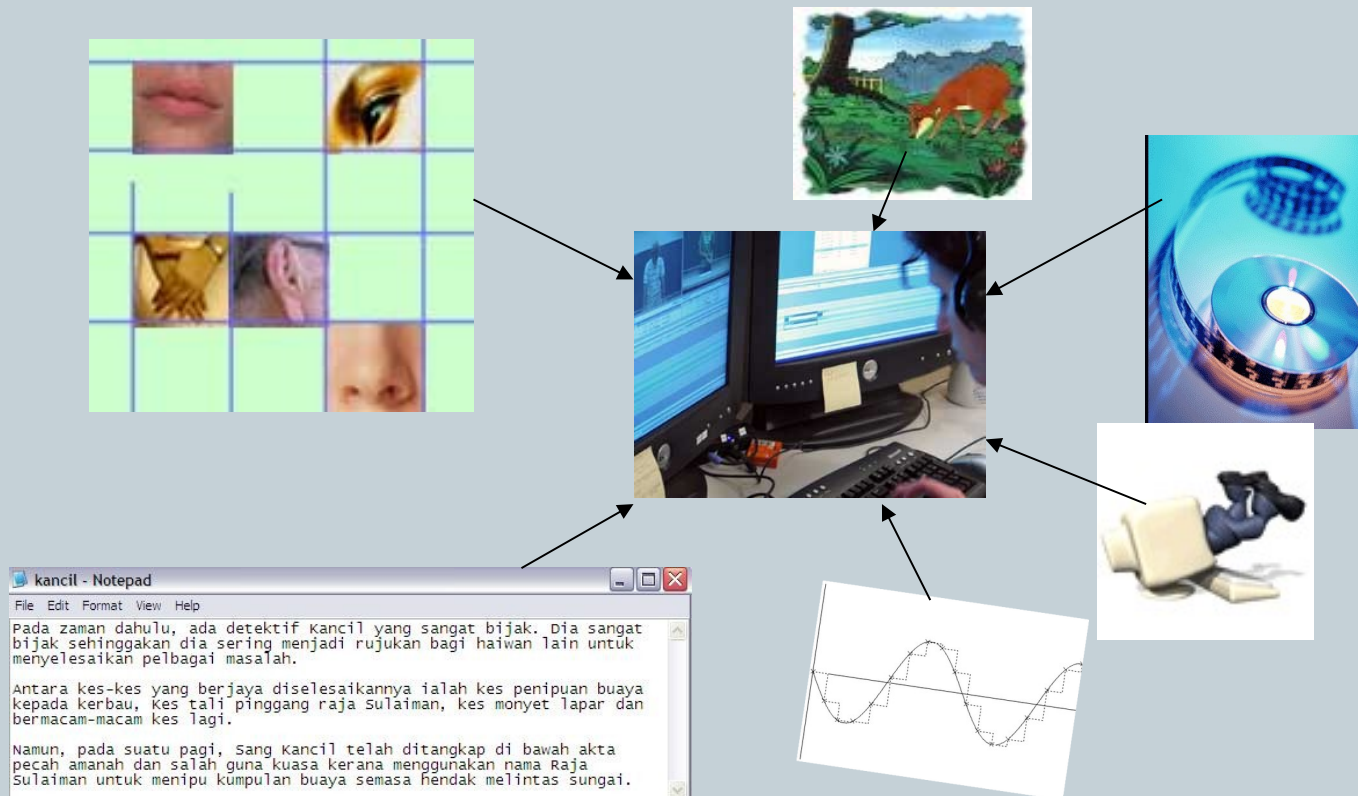
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- **Authoring** is the process of creating multimedia applications.
- ▶ It is assembly and synchronization of all the media components that have been prepared for final multimedia application.
- ▶ **Two basic features:**
 - Ability to create and edit a product
 - Presentation scheme for delivering product

What is an Authoring Tools

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- The tools by which various media components are brought together (integrated) into a structure and flow.



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- ***Authoring tools*** provide an integrated environment for binding together different elements of a Multimedia production
- **An authoring system:** is a program which has pre-programmed elements for the development of interactive multimedia software titles.

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- ❖ Authoring systems vary widely in:
 - Orientation
 - Capabilities, and
 - Learning curve: how easy it is to learn how to use the application

Why should you use an authoring system?

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- Can speed up programming i.e. content development and delivery
- Time gains i.e. accelerated prototyping
- The content creation (graphics, text, video, audio, animation) is not affected by choice of authoring system.
- Authoring systems for multimedia applications are designed for two primary target user groups:
 - **Professionals:** who prepare documents, images, audio and full-motion video clips for wide distribution.
 - **average users:** who prepare documents and other multimedia objects for stored messages or presentations.

Multimedia Authoring Paradigms

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- The **authoring paradigm**, or **authoring metaphor**: is the methodology by which the authoring system accomplishes its task.
- Most media integration tools will take or use one of the following **metaphors**:
 - a) Movie screen metaphor
 - b) Slide show metaphor
 - c) Linked screens

A. Movie screen metaphor

- Movie refers to the product of the authoring:
 - Linear/Interactive movie
- Also refers to authoring tools paradigm that contains Cast/Score/Scripting
- Example: Macromedia Director

B. Slide show metaphor

- A linear presentation
- Example: PowerPoint

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C. Linked Screens

- A group of scene(pictures) linked together



Features of Authoring Tools

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

Editing and Organizing Features

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- 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.

Programming Features

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

Interactivity Features

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- 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.
- **Conditional branching:-** is an activity based on the results of IF-THEN decisions or events.

Playback features

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- Ability to see and to test the ongoing or the completed project.

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.

Cross Platform:

- Ability to perform on all platforms including MAC and Windows.

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- It is important to use tools that facilitate easy transfer across platforms.

Internet Playability

- Ability to create the output for web enabled application.

e.g. **HTML**

Types of Authoring Tools

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- Card- and page-based tools.
- Icon-based, event-driven tools.
- Time-based tools.
- Object based tools.

Card- and Page-Based Tools

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- Card- and page-based authoring systems provide a simple and easily understood metaphor for organizing multimedia elements.
- It contains media objects such as buttons, text fields, and graphic objects.
- It provides a facility for linking objects to pages or cards.
- Cards or pages combine to make up a book.
 - **Example Of Authoring Tools:**
 - ▮ HyperCard (Mac)
 - ▮ Tool Book (Mac / Windows)

Icon-Based, Event-Driven Tools

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- Icons are gathered along the line.
- Provide visual development.
- Flow chart is created to show the organisation of icons or elements:
 - including activity list, results and done with dragging the icon/elements along the lines
 - each Icon represents a particular event – button, graphics, text, video
- **examples of authoring tools:**
 - ▮ Author ware(Mac/Windows)
 - ▮ Icon Author (Windows)

Time-Based Tools

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- Time-based tools are best suited for messages with a beginning and an end.
- Some time-based tools facilitate navigation and interactive control.
- The most popularly used.
- Using “*timeline*” for organizing activities
- Also using “*framing*” – timely adjusted depending on the frame size
- Macromedia’s Director and Flash are time-based development environments.

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Macromedia Director:

- Three important things that Director uses to arrange and synchronize media elements:
 - **Cast:** A multimedia database, contains still images, sound files, text, shapes, scripts, movies, and other Director files.
 - **Score** : is a sequencer for displaying, animating, and playing Cast members. Score is made of frames and frames contain cast member.
 - **Lingo:** is an object-oriented scripting language that enables interactivity and programmed control.
It enables to control external sound and video devices.

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Macromedia Flash

- Can accept both vector and bitmap graphics
- Uses a scripting language called Action Script which gives greater capability to control the movie.
- Flash is commonly used to create animations, advertisements, to design web-page elements, to add video to web pages, and more recently, to develop Rich Internet Applications.

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Flash uses:

- **Library**: a place where objects that are to be re-used are stored.
- **Timeline**: used to organize and control a movie content over time.
- **Layer**: helps to organize contents. Timeline is divided into layers.
- **Action Script**: enables interactivity and control of movies

Object Based

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- Support *environment* based on object.
- Every object is modified using *properties & modifiers*
- The environment is based on ‘Hierarchy’ (section and sub-section).

Cross-Platform Authoring tool

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- Macintosh and Windows computers use different schemes to manage text and colors.
- Text and color compatibility must be verified before moving multimedia projects across platforms.

Issues in Multimedia Application Design

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- ❑ **There are various issues in Multimedia authoring:**
 - ❖ Content design
 - ❖ Technical design
 - ❖ Visual design

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□ Content Design:

- In multimedia, there are **five** ways to format and deliver your message. You can **write it, illustrate it, wiggle it, hear it, and interact with it.**

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Content design involve:

- *Scripting (Writing)*
- *Graphics (Illustrating)*
- *Animation (Wiggling)*
- *Audio (Hearing)*
- *Interactivity (Interacting)*

Scripting (Writing):

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- ▶ Understand your audience and correctly address them.
- ▶ Keep your writing as simple as possible. (e.g., write out the full message(s) first, then shorten it.)
- ▶ Make sure technologies used complement each other

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❑ Graphics (Illustrating):

- ▶ Make use of pictures to effectively deliver your messages.
- ▶ Create your own (draw, (color) scanner, Photo CD, ...), or keep "copy files" of art works.
- ▶ Color Themes - be consistent with the contents.

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□ Animation (Wiggling):

❖ Types of animation:

- Character Animation - humanize an object
- Highlights and Sparkles
- Moving Text
- Video - live video or digitized video

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□ Audio (Hearing):

❖ Types of Audio:

- ▶ **Music** - set the mood of the presentation, enhance the emotion, illustrate points
- ▶ **Sound effects** - to make specific points, e.g., squeaky doors, explosions, wind, ...
- ▶ **Narration** - most direct message, often effective

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❑ **Interactivity (Interacting):**

- **Types of Interactive Multimedia Application:**
 - Menu driven programs/presentations
 - Hypermedia
 - Simulations / Performance-dependent Simulations

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❑ **Technical Design:**

- Video Mode and Computer Platform
- Memory and Disk Space Requirement
- Delivery

❑ **Visual Design:**

❖ **Some factors that should be considers in the visual design:**

- Themes and Styles
- Pace and Running length
- Basic Layout

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❑ Themes and Styles:

- Cartoon theme
- Traditional theme
- High tech theme
- Technical theme

❑ Pace and Running length:

- Allow a block of text to be slowly read twice.
- Transition time should be an indication of real-time.
- Running length.

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❑ **Basic layouts:**

- make sure that the information delivery path in the layout is smooth, not irregular/jumpy
- use headlines/subtitles, additional shapes, buttons, fonts, backgrounds and textures to enhance the visual appearance.