

Introduction to Authoring Language

SPPM2333

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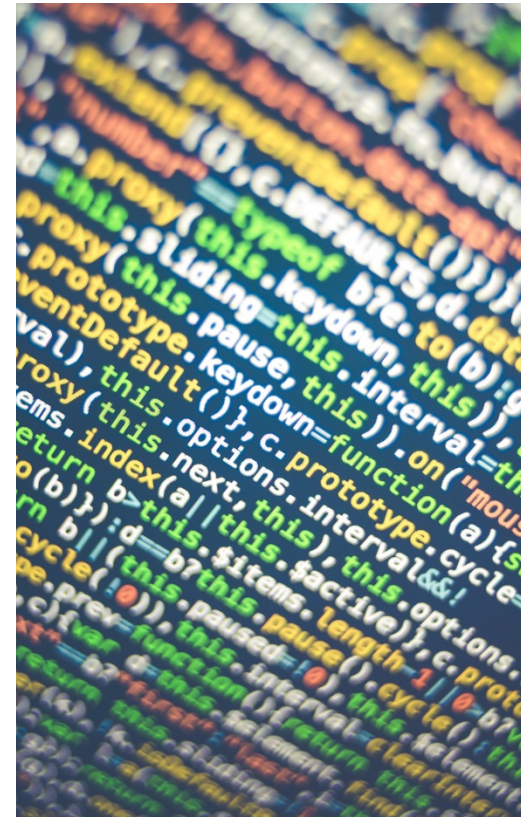
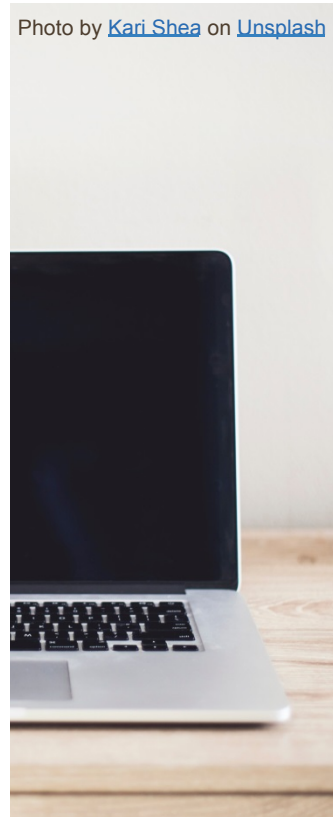


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Introduction

content that uses a combination of different forms of [digital media](#) such as text, audio, images, animations, videos or [interactive content](#)



What is multimedia?

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How to produce a multimedia software?

2

[Hardware](#): CPU, Monitor, Sound/ Video Card
[Software](#):

Adobe CS, Final Cut Studio, Picasa, Windows Movie Maker, Media Monkey, Inscap, ect



What is multimedia program?

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3

Programming Language
Authoring Language



Introduction

- Authoring tools and multimedia-oriented applications have been popular since the mid 1990s.
- The ability of authoring systems to **integrate numerous multimedia elements** (audio, video, animation, text, and graphics) into a single application/presentation has brought tremendous changes to the way society deals with and disperses information.
- In addition, the ability to **inject interactivity** whereby, end users can dynamically engage in **direct interaction** with the application and **navigate the movements** or interaction with the multimedia application has brought a huge impact on the educational system

Differences between AL and PL

- AL has the advantage over PL – special built-in subroutines to handle instructional problems.
- **Differences between AL and PL?**

Differences between AL and PL

Authoring Language

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Programming Language

About Programming Language

- Programming Language??
- Powerful and flexible, Require complicated coding
- Difficult to learn.
- Setting up or changing a computer program meant to give a series of instructions to a computer.
- For example, the instructions ask the computer to do the print on the printer, show a text or graphics on the screen and so on.

PL versus AL

- Unlike a PL, the AL provides the tools / options menu, the icon of the screen (on-screen tools) - allows users to enter text, graphics, animation, or provide options feeder and so on.
- All programming code that ensures the computer understands instructions given internally handled by the composite language software without requiring users think of logic, command syntax or program required as a programming language

The Power of AL

- To produce interactive courseware – the power of AL varies from system to system
- Some systems – can produce lessons that contain only text, some have templates for creating multiple-choice and true-false questions.

Function of AL

- Software Composition Language provides field work required to enable an multimedia developers manage and update the elements of a multimedia project. It also helps one multimedia software developer implement various of tasks, including????:
- Try to discuss the function of the AL??

About Authoring Systems

Definition:

- A program which has pre-programmed elements for the development of interactive multimedia software.
- Authoring systems vary widely in orientation, capabilities, and learning curve.
- Whether you realize it or not, authoring is actually just a speeded-up form of programming; you don't need to know the intricacies of a programming language, or worse, an application programming interface (API), but you do need to understand how programs work (Merrill, 1985).

About Authoring Language

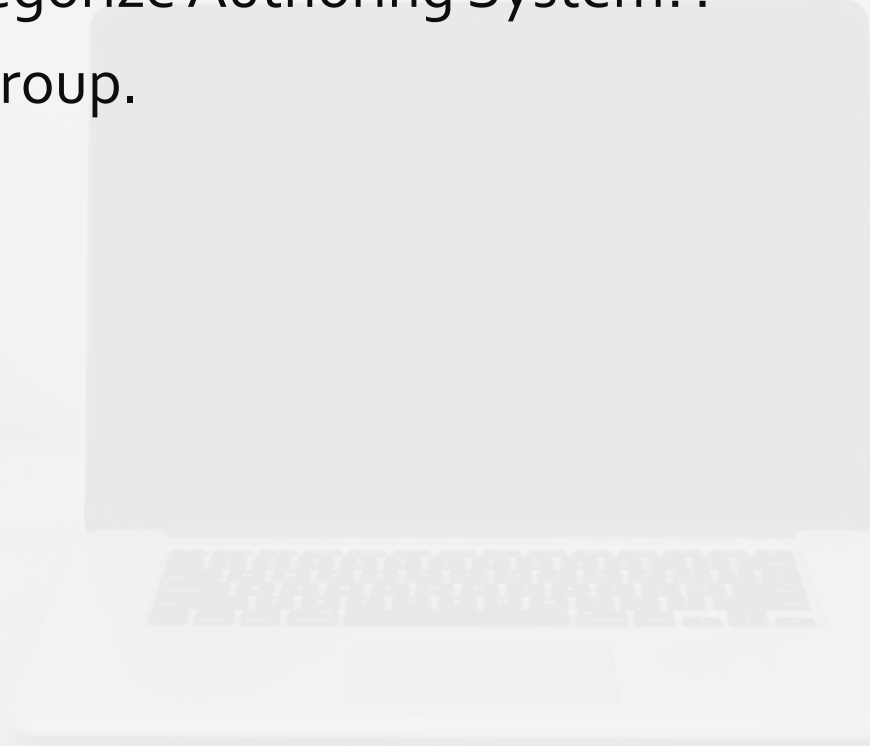
- Software that can be used to develop interactive computer programs without the technically demanding task of computer programming
- user-friendly computer system: a software development system that lets users develop applications such as databases and multimedia educational materials without having to learn a formal programming language.
- Provide non-programming environment

About Authoring Systems

- An application development environment for non programmers.
- Some existing popular tools such as Toolbook, Flash and Guide use their own programming tools called scripting.
- The only difference between such tools with a programming language is that a nonprogrammer can learn to use such a tool in a short space of time (relative to that taken to learn a conventional programming language, such as C++ or Pascal) and use it to produce high-quality applications.

Categories of Authoring System

- How to categorize Authoring System??
- Discuss in group.



About Authoring Systems

- Most authoring packages aim at the same goal - creation of the environment providing the design tools and automating most of the programming, letting the user focus on the task; but they achieve the task in different ways.
- These different ways are called paradigms. A paradigm, also known as the authoring metaphor, is therefore the methodology by which the authoring system accomplishes its task

Authoring metaphor

- AL for a multimedia system can be categorized based on how they work / operate, that metaphor is used:
 - Electronic Slide Presentation (Electronic Slide Show)
 - AL cards-based or sheets of Books (Stack Card or Book)
 - AL icon-based
 - AL time-based

Electronic Slide Show

- Closely resembles the use of transparencies and projector
- Example of an application under this category:
 - Microsoft Power Point
 - Adobe Persuasion
 - Asymetrix Compel
 - Macromedia Action
 - Harvard Graphics
 - Astound

Electronic Slide Show

Advantages

- Reasonable prices (cheap)
- Easy to learn and easy to use.
- Provides a "template" with various patterns,
- Providing features include audio, video, and animation into a presentation.
- Some software - provides build hyperlink.
- Most of this type of software released for use on both major platforms.
- Applications developed can be used on any computer without the need for the original software is on the computer system.

Electronic Slide Show

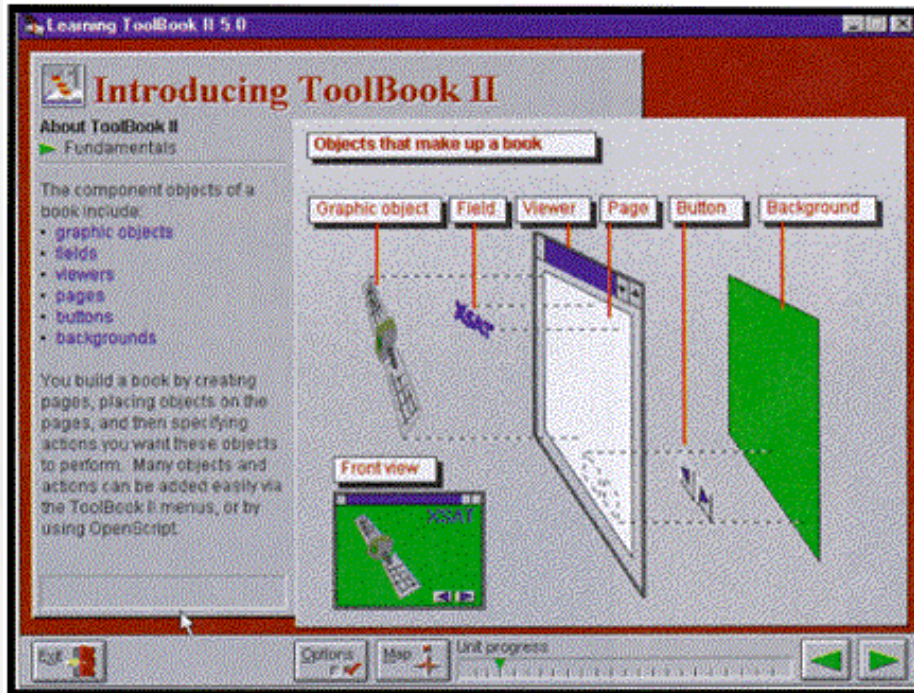
Disadvantages

- It's linear, not very interactive and was only able to produce a non-complex.
- It's standalone - it does not have the features to build records, databases and so on.

The Card Stack and Book Metaphors

- Every application for development formed from basic units called cards.
- Each card is built and contain material to be presented to the user.
- These cards were then compiled into a array or "stack"
- Hypercard is an example of software that uses the concept of composite language Array Card.
- For Apple Macintosh platform

The Card Stack and Book Metaphors



a *card*



a *stack* (of cards)



linked stacks

The Card Stack and Book Metaphors

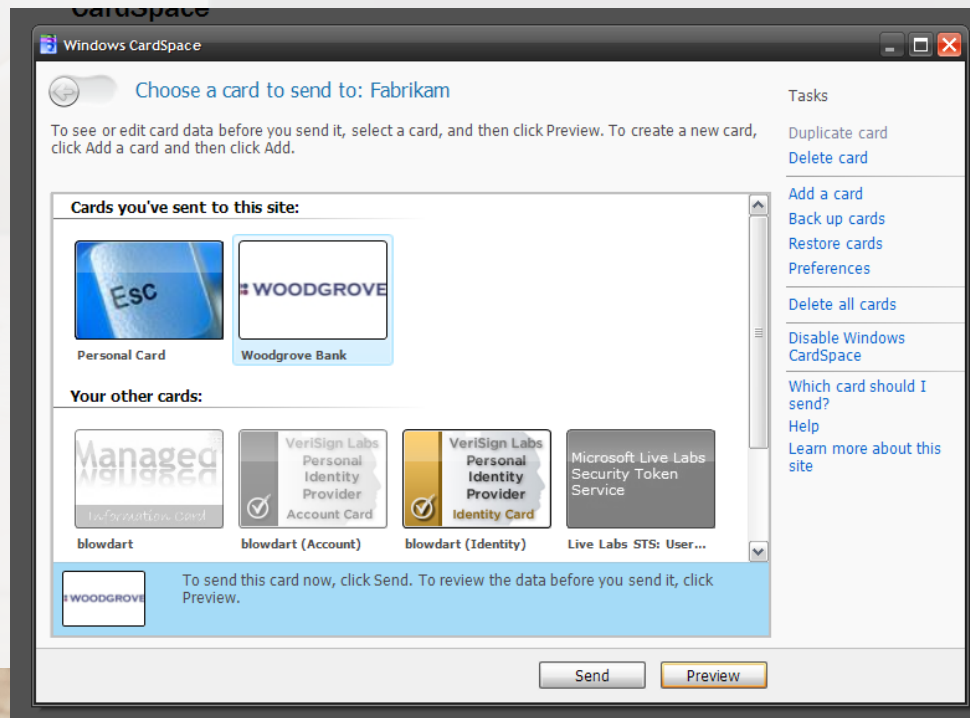
- Each card can be connected to provide features for the user to press a button (button) or other elements that have to move to another card in the array.
- It is oriented objects (object-oriented).
- The object here can be a button, a text field, graphic, background, sheet or card but the project itself.
- Characteristics of each object was represented by its nature (bold, red, active, etc.)
- Each object may also contain programming scripts that will be activated as appropriate or conditions (eg when the mouse is clicked).

The Card Stack and Book Metaphors

- Based composite sheets Books. - Each sheet represents a different screen presentation. Each sheet will then form a book.
- Example - Toolbook from Asymetrix
- The software has two levels namely: Level Writers & Readers Level (Instructor and Assistant).
- Level Writer allows you to develop applications
- Level Readers allow you to interact with the application as a normal user.
- Toolbook also provides facilities for drawing and also build a two-dimensional animation of routes (path animation).

The Card Stack and Book Metaphors

- When this AL book-based can be used??
Developing applications that have various content to be displayed in individual / distinctive as in book or card sheet on cards array.



The Card Stack and Book Metaphors

Advantages

- Metaphor easy to understand
- Easy to use.
- Direct relationship between what is displayed on a screen presentation of what was built in card or book.
- Usually provides a "template" that shortens the time development of an application.

The Card Stack and Book Metaphors

Disadvantages

- Can only be used only on one type of platform (Windows or Macintosh).
- For drawing and animation facilities provided are usually less powerful / attractive compared to the facilities provided by the language of the other compositions.

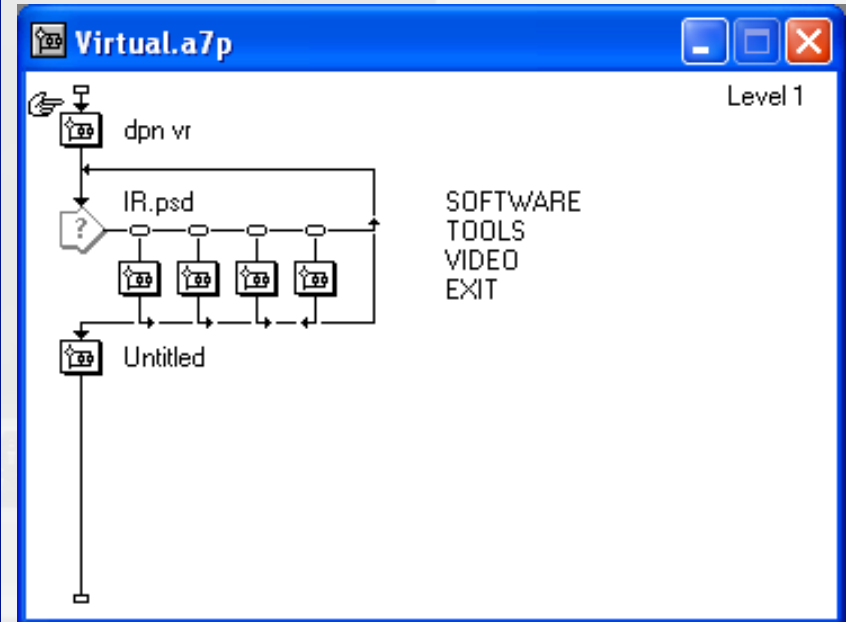
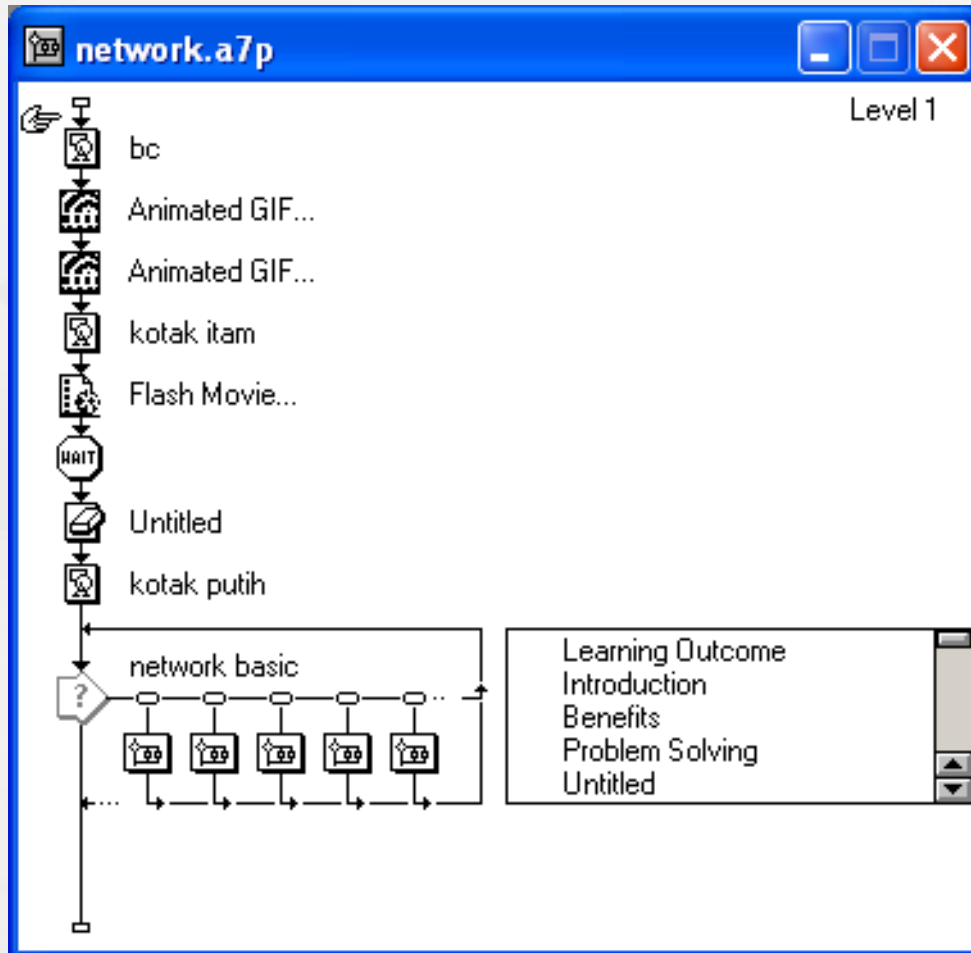
AL Icon-based

- Using the icons in the flowchart.
- Example-based composite language software icons that are very popular & widely used especially in the field of education
- Each icon has a different function and role. For example, the icon Wait will stop the application until the user presses the button or clicking the mouse, or after a certain period of time.

AL Icon-based

- The icons are arranged in a line to form a logical flow of the program are required.
- Although knowledge of the programming language is not a necessary - think like a programmer patterns are very important to facilitate the development of an application.

AL Icon-based



AL Icon-based

The screenshot displays an AL (Authoring Language) interface. On the left is the 'Parts of a camera' lesson flowchart, and on the right is the 'Presentation Window'.

Parts of a camera

- Lesson Title
- Camera top
- READ ME
- Click the shutter
- What is 125?
- Erase camera and hint but
- Parts of a Camera


Presentation Window

File

Parts of a Camera
Click the part of the camera you would press to take a picture.

Yes! Pressing the shutter release button opens the shutter to let light pass through the lens and expose the film.

Hint Continue



Authoring System Icon-based

Advantages

- Allows you to view the structure, flow and feeder applications you develop with ease.
- Easy for you to update or add as well to reduce the content of an application that was developed just to add or remove icons that represent the contents.
- Does not require any use of code or script to produce a basic multimedia applications

Authoring System Icon-based

Disadvantages

- Quite expensive
- Difficult to master in depth in a short time.
- Requires a lot of input from the mouse - not suitable for the less skilled to use the mouse.
- "instead of writing lines of code, the user spends a great deal of time checking options in dialog boxes, clicking buttons to load files, and selecting obscure events from list boxes".

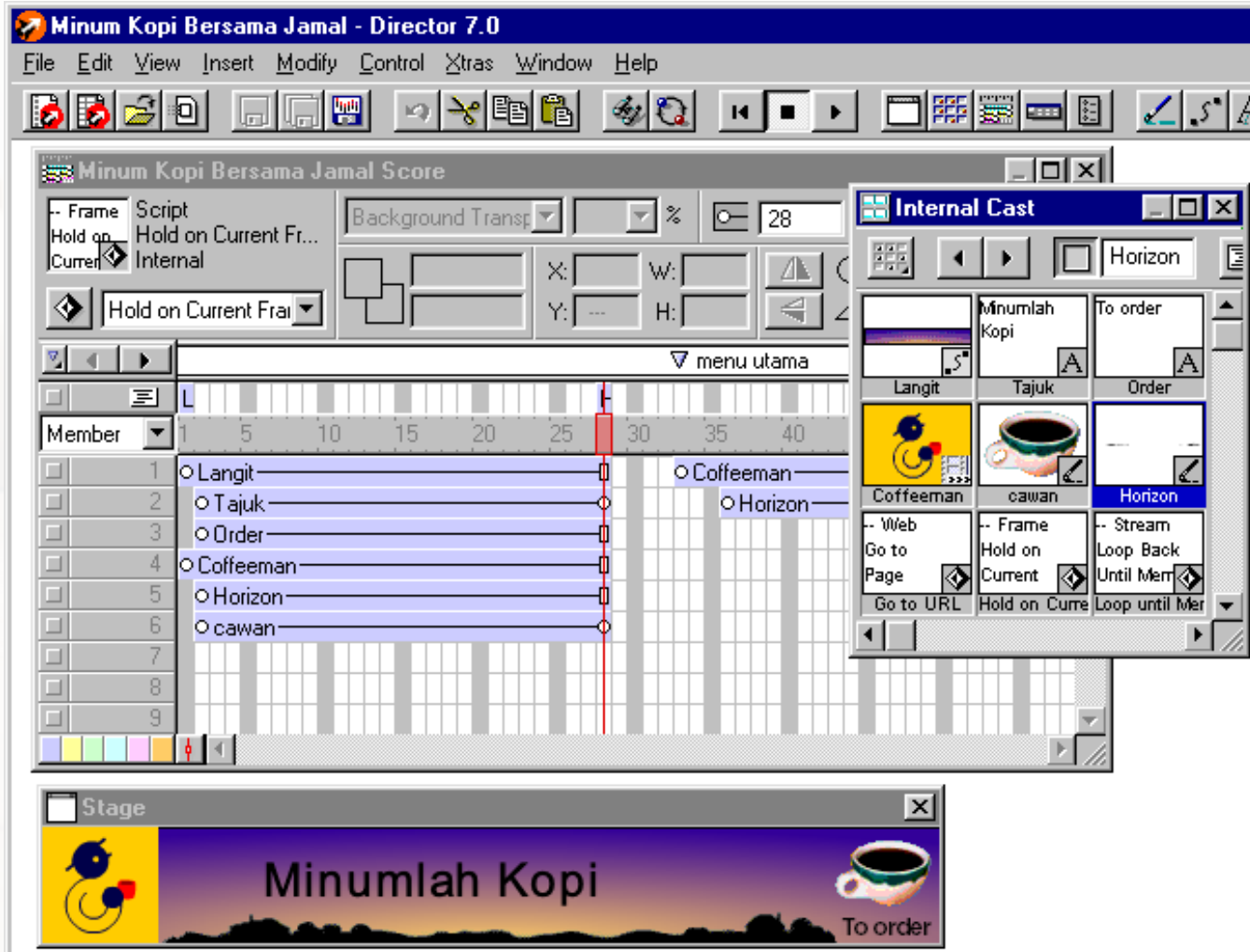
Authoring System Icon-based

- Suitable for the development of applications that require a high level of interactivity such as applications for training / computer-based instruction or for kiosk applications.
- Apart from Macromedia Authorware, using the metaphor of composite language icon is Icon Author, Layout, TX Interactive Authoring and HSC

Time Based Authoring Programs

- Concept or movie frames metaphor . As in the film or video cassette, you start a multimedia application until a stunt or action stop.
- Compared with the use of a card or sheet of the book, "Movie" in the composite language software consists of a series of individuals in blinds (frame) of its own. When the application is played, each frame will be activated and the frame element in the series will be presented.

Time Based Authoring Programs



Time Based Authoring Programs

- Given the time-based composite language operates by displaying each frame in series - ideal for producing learning object.
- Examples of this AL category of software: Adobe Director, Flash, Swish etc.
- Applications developed using Macromedia Director and arrangement between a series of "cast member" such as text, audio, video, animation work on space arrangement called the "score".

Time Based Authoring Programs

- "Score" is made up of interlaced or sequential frames - each frame represents a process or application environment.
- Each "cast member" can write or inserted at any desired frame.

Time Based Authoring Programs

Advantages

- Suitable to produce animation.

Disadvantages

- This type of software is usually quite expensive and difficult to master: Ideal for advanced level.

Other categories

- Scripting Language
- Frame
- Cast/Score/Scripting
- Hierarchical Object
- Hypermedia Linkage
- Tagging

What is Multimedia Authoring?

Process of multimedia production

- Assembling media elements
 - Adding interactivity
 - Export project for distribution to end users
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- Final product can be:
 - A stand-alone executable
 - Played back in a Web browser

Multimedia Authoring Program

- Allow you to combine text, images, audio, video, animation into an interactive presentation
- May have its own scripting language
 - to add interactivity
- Examples:
 - Adobe Flash/ActionScript
 - Adobe Director/Lingo

Media Elements

- Often created outside of the multimedia authoring program
- In Flash:
 - Use pencil and brush tools
 - Create vector graphics

Uses of multimedia authoring programs

- Create multimedia titles
- Create interactivity
- Design screen layouts
- Produce content with paint, text, and animation tools
- Incorporate text, sound, video, animation, and graphics
- Create hyperlinks

Products of Multimedia Authoring

- Interactive Video Production
- Demo disc and "Interactive Guided Tours"
- Electronic presentation
- Interactive Kiosk Applications
- Applications Training / Interactive Learning
- Simulation, prototyping and "Technical Visualizations"
- Learning Objects
- etc