Unit 3

Multimedia Authoring

MULTIMEDIA DEVELOPMENT TOOLS

A multimedia development environment is the glue that combines different media elements-images, sounds, text and animation into a coherent project that the user can explore. Although programs such as Photoshop and Infini-D enable the user to create bit-mapped graphics or three-dimensional illustrations, they don't allow to add buttons or data fields. This really limits the productions created by the user, and that's why he'll nearly always want to have access to some kind of development environment such as HyperCard, Director. etc.

The presentation tools available for multimedia development can be divided into three categories: 1. Slide Presentation Environments 2. Interactive Presentation Environments 3. Authoring, Environment Programs such as HyperCard, Director etc. add another element to be multimedia developer's arsenal i.e. scripting. Scripting really means programming, because you write "scripts" using a programming languages that the development environment understands. The scripts, or programs perform various functions such as importing a text file or sorting a list of words. With scripting it is possible to create very complex interactions between the user and the presentation. For example, by clicking. a single button, the user might inquire about a subject and then find all the information available on that subject in the presentation. The authoring, environments can be used to create slide presentation or simple interactive presentations but what sets them apart from the other classes of programs is the ability to write scripts and create complex interfaces.

FEATURES OF AUTHORING TOOLS

Editing Features

Most authoring environment and packages exhibit capabilities to create edit and transform different kinds of media that they support. For example, Macromedia Flash comes bundled with its own sound editor. This eliminates the need for buying dedicated software to edit sound data. So authoring systems include editing tools to create, edit and convert multimedia components such as animation and video clips

Organizing Features

The process of organization, design and production of multimedia involve navigation diagrams or storyboarding and flowcharting. Some of the authoring tools provide a system of visual flowcharting or overview facility to showcase your project's structure at a macro level. Navigation diagrams help to organize a project. Many web-authoring programs like Dreamweaver include tools that create helpful diagrams and links among the pages of a website

Visual programming with icons or objects

It is simplest and easiest authoring process. For example, if you want to play a sound then just clicks on its icon

Authoring software offers the ability to write scripts for software to build features that are not supported by the software itself. With script you can perform computational tasks - sense user input and respond, character creation, animation, launching other application and to control external multimedia devices

Document Development tools

Some authoring tools offers direct importing of pre-formatted text, to index facilities, to use complex text search mechanism and to use hypertext link-ing tools

Interactivity Features

Interactivity empowers the end users to control the content and flow of information of the project. Authoring tools may provide one or more levels of interactivity

Simple branching

Offers the ability to go to another section of the multimedia production

Conditional branching

Supports a go to base on the result of IF-THEN decision or events

Playback Features

When you are developing multimedia project, you will continousally assembling elements and testing to see how the assembly looks and performs. Therefore authoring system should have playback facility

Supporting CD-ROM or Laser Disc Sources

This software allows over all control of CD-drives and Laser disc to integrate audio, video and computer files. CD-ROM drives, video and laserdisc sources are directly controlled by authoring programs

Supporting Video for Windows

Videos are the right media for your project which are stored on the hard disk. Authoring software has the ability to support more multimedia elements like video for windows

Hypertext

Hypertext capabilities can be used to link graphics, some animation and other text. The help system of window is an example of hypertext. Such systems are very useful when a large amount of textual information is to be represented or referenced

Cross-Platform Capability

Some authoring programs are available on several platforms and provide tools for transforming and converting files and programs from one to the other

Run-time Player for Distribution

Run time software is often included in authoring software to explain the distribution of your final product by packaging playback software with content. Some advanced authoring

programs provide special packaging and run-time distribution for use with devices such as CD-ROM

Internet Playability

Due to Web has become a significant delivery medium for multimedia, authoring systems typically provide a means to convert their output so that it can be delivered within the context of HTML or DHTML.

CARD OR PAGE BASED AUTHORING TOOLS

In these authoring systems, elements are organized as pages of a book or a stack of cards. In the book or stack there are thousand of pages or cards available. These tools are best used when the bulk of your content consists of elements that can be viewed individually, for example the pages of a book or file cards in card file. You can jump from page to page because all pages can be interrelated. In the authoring system you can organize pages or cards in the sequences manner. Every page of the book may contain many media elements like sounds, videos and animations.

One page may have a hyperlink to another page that comes at a much later stage and by clicking on the same you might have effectively skipped several pages in between. Some examples of card or page tools are:

- Hypercard (Mac)
- Tool book (Windows)
- PowerPoint (Windows)
- Supercard (Mac)

Painting and Drawing Tools for Multimedia

Painting and drawing tools, as well as 3-D modelers, are perhaps the most important items in the toolkit because, of all the multimedia elements, the graphical impact of the project will likely have the greatest influence on the end user. If the artwork is amateurish, or flat and uninteresting, both the creator and the users will be disappointed.

Painting software, such as Photoshop, Fireworks, and Painter, is dedicated to producing crafted bitmap images. Drawing software, such as CorelDraw, FreeHand, Illustrator, Designer, and Canvas, is dedicated to producing vector-based line art easily printed to paper at high resolution.

Some software applications combine drawing and painting capabilities, but many authoring systems can import only bitmapped images. Typically, bitmapped images provide the greatest choice and power to the artist for rendering fine detail and effects, and today bitmaps are used

in multimedia more often than drawn objects. Some vector based packages such as Macromedia's Flash are aimed at reducing file download times on the Web, and may contain both bitmaps and drawn art. The anti-aliased character shown in the bitmap of Color Plate 5 is an example of the fine touches that improve the look of an image.

Paint tools to create geometric shapes, from squares to circles and from curves to complex polygons

• Ability to pour a color, pattern, or gradient into any area

• Ability to paint with patterns and clip art

• Customizable pen and brush shapes and sizes

• Eyedropper tool that samples colors

• Auto trace tool that turns bitmap shapes into vector-based outlines

• Support for scalable text fonts and drop shadows

• Multiple undo capabilities, to let you try again

• Painting features such as smoothing coarse-edged objects into the background with anti-aliasing, airbrushing in variable sizes, shapes, densities, and patterns; washing colors in gradients; blending; and masking

• Support for third-party special effect plug-ins

• Object and layering capabilities that allow you to treat separate elements independently

• Zooming, for magnified pixel editing

• All common color depths: 1-, 4-, 8-, and 16-, 134-, or 313- bit color, and grayscale

3D Modelling and Animation tools

• Motion Graphics: Cinema 4D is particularly renowned for its capabilities in motion graphics. It offers a MoGraph module, which allows for the creation of complex motion graphics and animations with ease.

• Simulation and Dynamics: It includes modules for creating dynamic simulations, including rigid body dynamics, soft body dynamics, cloth simulations, and more.

• Character Animation: Cinema 4D has a robust character animation toolset, including tools for character rigging, skinning, and character animation.

• Materials and Texturing: It provides a sophisticated material system for creating realistic textures and shaders. This includes support for procedural textures, UV mapping, and more.

• Particle Systems: Cinema 4D has a powerful particle system for creating effects like smoke, fire, rain, and other dynamic particle-based simulations.

• Scripting and Expressions: It supports scripting in Python, allowing for automation, customization, and the creation of custom tools.

User Interface:
Cinema 4D features an intuitive and user-friendly interface that is designed to be accessible to both beginners and experienced users. The layout is customizable to accommodate different workflows.

Cross-Platform:
It is available for both Windows and macOS, making it accessible to a wide range of users.

Integration:
Cinema 4D has good integration with other software commonly used in the industry. It supports file formats like FBX, Alembic, and more, allowing for seamless collaboration with other 3D applications and pipelines.

Variants:
Cinema 4D comes in several variants, including Studio (the full-featured version with all modules), Broadcast (optimized for motion graphics and broadcast), Visualize (geared towards architectural visualization), Prime (focused on 3D modeling), and Lite (a simplified version bundled with Adobe After Effects).
Licensing:

Cinema 4D is available through various licensing models, including perpetual licenses and subscription-based options.

Icon-based or Event-driven authoring tools

Icon-based tools give a visual programming approach to organizing and presenting multimedia. First, you build a structure or flowchart of events, tasks, and decisions by dragging appropriate icons from a library. Each icon does a specific task, for example- plays a sound, opens an image, etc. The flowchart graphically displays the project's logic. When the structure is built you can add your content text, graphics, animation, video movies, and sounds. A non-technical multimedia author can also build sophisticated applications without scripting using icon-based authoring tools. Some examples of icon-based tools are:

- Author ware Professional (Mac/Windows)
- Icon Author (Windows)

Advantages:

Following are the advantages of icon/event-based authoring tools.

- Clear Structure.
- Easy editing and updating

Disadvantages:

Following are the disadvantages of icon/event-based authoring tools.

- Difficult to learn.
- Expensive.

Time-based authoring tools

Time-based authoring tools allow the designer to arrange various elements and events of the multimedia project along a well-defined timeline. By timeline, we simply mean the passage of time. As time advances from the starting point of the project, the events begin to occur, one after another. The events may include media file playback as well as the transition

from one portion of the project to another. The speed at which these transitions occur can also be accurately controlled.

These tools are best to use for those projects, wherein the information flow can be directed from beginning to end much

like the movies. Some examples of Time-based tools are:

- Macromedia's Director
- Macromedia Flash

Advantages

Following are the advantages of time-based authoring tools.

- Good for creating animation.
- Branching, user control, and interactivity facilities.

Disadvantages

The following are the disadvantages of time-based authoring tools.

- Expensive
- Large file size
- Steep learning curve to understand various features.

ϖObject-oriented authoring tools:

Object-oriented authoring tools support environments based on objects. Each object has the following two characteristics:

1. State or Attributes - The state or attributes refer to the built-in characteristics of an object. For example, a color

T.V has the following attributes:

oColor receiver

oVolume Control

oPicture Control

o128 channels

oRemote control unit

2. Behavior or Operations - The behavior or operations of an object refers to its action. For example, a T.V can

behave in any of the following manner at a given point of time:

oSwitched on

oSwitched off

oDisplays pictures and sounds from

♣A TV cable connection

♣A TV transmitter