Programme   : Bachelor of Science (First Year)

Subject   : Computer Science-Generic Elective

Semester   : II

Course Code   : CSG104

Course Title   : Multimedia and Web Design

Title of the Unit : Multimedia tools

Module Name   : Authoring tools

Authoring tools

- Multimedia authoring is a process of assembling different types of media contents like text, audio, image, animations and video as a single stream of information.

- Multimedia authoring tools give an integrated environment for joining together the different elements of a multimedia production.

- It gives the framework for organizing and editing the components of a multimedia project.

- It enables the developer to create interactive presentation by combining text, audio, video, graphics and animation.

Features of Authoring Tools

1) **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.

2) **Organizing Features**- The process of organization, design and production of multimedia involve navigation diagrams or storyboarding and flowcharting.

   - For example, Dreamweaver include tools that create helpful diagrams and links among the pages of a website.

3) Visual programming with icons or objects- It is simplest and easiest authoring process.

   - For example, say to play a sound just click on its icon.

4) Programming with a scripting language- Authoring software offers the ability to write scripts for software to build features that are not supported by the software itself.

- For example ,script can perform computational tasks - sense user input and respond, character creation, animation, launching other application and to control external multimedia devices.

5) 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 linking tools.

6) 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.

7) Simple branching- Offers the ability to go to another section of the multimedia production.

8) Conditional branching- Supports a go to base on the result of IF-THEN decision or events.

9) Playback Features- While developing multimedia project, continuous assembling of elements and testing is required to see how the assembly looks and performs. Therefore authoring system should have playback facility.

10) 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 laser disc sources are directly controlled by authoring programs.

11) Supporting Video for Windows- Videos are the right media for projects which are stored on the hard disk.

Authoring software has the ability to support more multimedia elements like video for windows.

12) 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.

13) 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.

14) Run-time Player for Distribution- Run time software is often included in authoring software to explain the distribution of 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.

15) Internet Playability- Due to Web ,which 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.

Authoring Tools Classification

1) Card or Page based authoring tools

- The authoring system is used to organize pages or cards in the sequential manner. Every page of the book may contain many media elements like sounds, videos and animations.

- One page may contain a hyperlink to another page that comes at a much later stage.

Some examples of card or page tools are:

- Hypercard (Mac)

- Tool book (Windows)

- PowerPoint (Windows)

- Supercard (Mac)

Advantages:

- Easy to understand.

- One screen is equal to 1card or 1page.

- Easy to use as these tools provide template.

- Short development time.

Disadvantages:

- Some run only on one platform.

- Tools not as powerful as equivalent stand alones.

2) Icon based or Event driven authoring tools

- Icon-based tools give a visual programming approach to organizing and presenting multimedia.

- First a structure or flowchart of events, tasks and decisions is build by dragging appropriate icons from a library.

- Each icon does a specific task, for example-plays a sound, open an image etc.

- The flowchart graphically displays the project's logic. When the structure is built it can be used to add content text, graphics, animation, video movies and sounds.

Some examples of icon based tools are:

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

Advantages:

- Clear Structure.
- Easy editing and updating

Disadvantages:

- 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 time line.
- The events may include media files playback as well as 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 example of Time based tools are:

- Macromedia's Director
- Macromedia Flash

Advantages

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

Disadvantages

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

3) **Object-Oriented authoring tools:**

Object oriented authoring tools support environment based on object.

Each object has the following two characteristics:

1. **State or Attributes** - The state or attributes refers to the built in characteristics of an object.

   For example, a color T.V has the following attributes:

   1. Color receiver
   2. Volume control
   3. Picture control
   4. Channels
   5. Remote 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:

- Switched on
- Switched off
- Displays picture and sound from
    - A TV cable connection
    - A TV transmitter
    - A DVD
    - A VCR
- In these systems, multimedia elements events are often treated as objects that live in a hierarchical order of parent and child relationships.
- These objects use messages passed among them to do things according to the properties assigned to them.
- For example, a video object will likely have a duration property i.e. how long the video plays and a source property that is the location of the video file. ss
- This video object will likely accept commands from the system such as play and stop.

Some examples of the object oriented tools are:

- mTropolis (Mac/Windows)
- Apple Media Tool (Mac/Windows)
- Media Forge (Windows)