MAKING MULTIMEDIA

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OVERVIEW

- Four primary stages in a multimedia project
- The intangible elements needed to make good multimedia
- Frequent-used hardware and software programs in multimedia production
- Determine appropriate multi-media authoring system for any given project

THE STAGES OF A MULTIMEDIA PROJECT

- Planning and costing:
  - Plan out the writing skills, graphic art, music, video, and other multimedia expertise that will be required
  - Estimate the time
  - Prepare a budget
- Designing and producing:
  - Perform each of the planned tasks to create a finished product.

THE STAGES OF A MULTIMEDIA PROJECT

- Testing
  - Test your programs to make sure that they meet the objectives of your project, and meet the needs of your client or end user
- Delivering:
  - Package and deliver the project to the end user.
  - Be prepared to follow up over time with tweaks, repairs, and upgrades

NEEDED ELEMENTS FOR MAKING MULTIMEDIA

- Intangibles
- Hardware
- Software

INTANGIBLE ELEMENT

- Creativity
  - The most precious asset you can bring to the multimedia
  - The better you know your medium, the better able you are to express your creativity
- Organization
  - Develop an organized outline and a plan that rationally details the skills, time, budget, tools, and resources for a project

INTANGIBLE ELEMENT

- Communication
  - Many multimedia applications are developed in workgroups
  - Communication among workgroup members and with the client is essential to the efficient and accurate completion of a project
  - If all are connected to the Internet, a combination of Skype video and voice telephone, e-mail, and the File Transfer Protocol (FTP) may be the most cost-effective solution.

HARDWARE

- The two most significant platforms for producing and delivering multimedia projects: the Apple Macintosh operating system (OS) and the Microsoft Windows OS

- A Windows computer is not a computer per se, but rather a collection of parts that are tied together by the requirements of the Windows operating system

- The Macintosh platform is better suited for multimedia production than the Windows platform

Windows	Mac	Other
90.76%	4.32%	4.92%

Table 7-1   Worldwide Operating System Market Share in September, 2010 (Source: http://marketshare.hitslink.com)

HARDWARE

- Connection: Hardware elements such as hard disks and networked peripherals must be connected together

- Memory and storage devices: To estimate the memory requirements of a multimedia project you must have a sense of the project's content and scope

- Input and output devices such as microphones, recorders, speakers, projectors and monitors are required when working with multimedia elements

HARDWARE

Connection	Transfer Rate
Serial port	115 Kbps (0.115 Mbps)
Standard parallel port	115 Kbps (0.115 Mbps)
USB (Original 1.0)	12 Mbps (1.5 Mbps)
SCSI-2 (Fast SCSI)	80 Mbps
SCSI (Wide SCSI)	160 Mbps
Ultra2 SCSI	320 Mbps
FireWire 400 (IEEE 1394)	400 Mbps
USB (Hi-Speed 2.0)	480 Mbps
SCSI (Wide Ultra2)	640 Mbps
FireWire 800 (IEEE 1394)	800 Mbps
SCSI (Wide Ultra3)	1,280 Mbps
SATA 150	1,500 Mbps
SCSI (Ultra4)	2,560 Mbps
SATA 300	3,000 Mbps
FireWire 3200 (IEEE 1394)	3,144 Mbps
USB (Super-Speed 3.0)	3,200 Mbps
SCSI (Ultra5)	5,120 Mbps
SATA 600	6,000 Mbps
Fibre Channel (Optic)	10,520 Mbps

Table 7-2   Maximum Transfer Rates for Various Connections in Megabits Per Second

DVD Feature	DVD Specification	Blu-ray Specification
Disc diameter	120 mm (5 inches)	120 mm (5 inches)
Disc thickness	1.2 mm (0.6 mm thick disc × 2)	1.2 mm (0.6 mm thick disc × 2)
Memory capacity	4.7 gigabytes/single side	25 gigabytes/single layer
Wave length of laser diode	650 nanometer/635 nanometer (red)	405 nanometer (blue-violet)
Data transfer rate 1x	Variable speed data transfer at an average rate of 4.69 Mbps for image and sound	Variable speed data transfer at an average rate of 36 Mbps for image and sound
Image compression	MPEG2 digital image compression	MPEG-2 Part 2, H.264/MPEG-4 AVC, and SMPTE VC-1
Audio	Dolby AC-3 (5.1 ch), LPCM for NTSC and MPEG Audio, LPCM for PAL/SECAM (a maximum of 8 audio channels and 32 subtitle channels can be stored)	Dolby Digital (AC-3), DTS, and linear PCM
Running time (movies)	Single Layer (4.7GB): 133 minutes a side (at an average data rate of 4.69 Mbps for image and sound, including three audio channels and four subtitle channels)	Single Layer (25GB): Encoded using MPEG-2 video, about two hours of HD content; using VC-1 or MPEG-4 AVC codecs, about 4 hours of HD quality video and audio

Table 7-3   DVD and Blu-ray Specifications

SOFTWARE

- Multimedia software provides specific instructions to the hardware for performing tasks.

- Software tools are divided into editing applications, authoring tools and additional applications

- Keep your tools sharp by

  - Upgrading them when new software and features become available

  - Thoroughly studying and learning each tool

  - Keeping an eye on the conversations and FAQ

  - Observing the practices and products of other multimedia developers

SOFTWARE

- Text Editing and Word Processing Tools

- OCR Software: turns bitmapped characters into electronically rec- ognizable ASCII text..

- Painting and Drawing Tools – most important tools: Painting software vs Drawing software

- 3-D Modeling and Animation Tools

- Image-Editing Tools

- Sound-Editing Tools

- Animation, Video, and Digital Movie Tools

AUTHORING TOOLS

- Multimedia authoring tools provide the important framework you need for organizing and editing the elements of your multimedia project
- Authoring tools are used for
  - designing interactivity and the user interface
  - presenting your project on screen
  - assembling diverse multimedia elements into a single, cohesive product
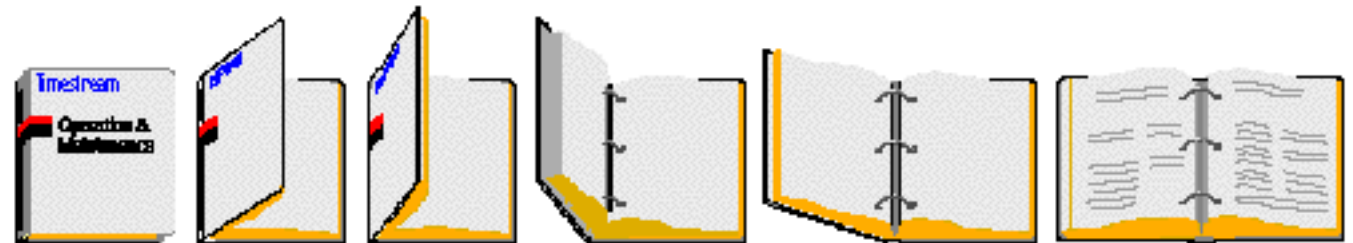
AUTHORING TOOLS

- The various multimedia authoring tools can be categorized into three groups:
  - Card- or page-based tools
  - Icon-based, event-driven multimedia and game-authoring tools
 - Time-based tools

AUTHORING TOOLS

- Card-based or page-based tools:
  - Elements are organized as pages of a book or a stack of cards
  - Allows developers to link cards and pages together to a organized sequence
  - Can jump to any page in a structured navigation pattern
  - One page may contain link to other pages

AUTHORING TOOLS

■ **Card-based or page-based tools:**

■ Page-based authoring systems such as LiveCode from Runtime Revolution (www.runrev.com) and ToolBook (www.toolbook.org) , HyperCard

■ These tools are best used when the bulk of your content consists of elements that can be viewed individually
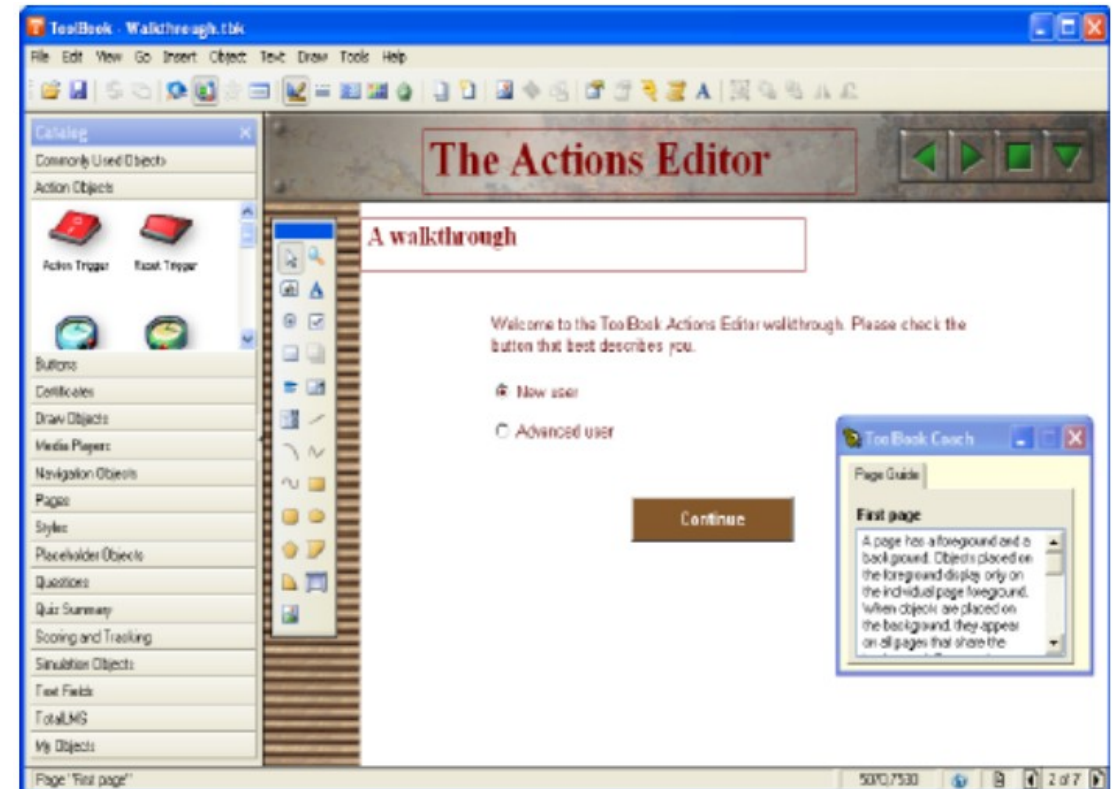
AUTHORING TOOLS

- Icon- and Object-Based Authoring Tools:
  - multimedia elements and events are organized as objects in a flow chart
  - provide a visual programming approach to organizing and presenting multimedia
  - For example: authorwave, iconauthor

AUTHORING TOOLS

- Time-Based Authoring Tools:
  - Elements and events are organized along a timeline
  - Sequentially organized graphic frames are played back at a speed that you can set
  - For example: Flash, Adobe director

CHOOSING AN AUTHORING TOOL

- Before deciding on the best ones for your needs
    - Study the software product reviews in the blogs and computer trade journals,
    - Talk with current users of these systems
- When choosing an authoring system, consider its editing, organizing, programming, interactivity, performance, playback, cross-platform, and delivery features.

HELPFUL WAYS TO GET STARTED

- "There's no need to reinvent the wheel!"

HELPFUL WAYS TO GET STARTED

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- Use templates that people have already created to set up your production

- Use wizards when they are available—they may save you much time and pre-setup work

- Use named styles which are already created, usable, and legal

- Help readers find information with tables of contents, running headers and footers, and indexes

HELPFUL WAYS TO GET STARTED

- Improve document appearance with bulleted and numbered lists and symbols

- Reduce grammatical errors by using the grammar and spell checker provided with the software

- Include identifying information in the filename so you can find the file later

MEMBERS OF A MULTIMEDIA PROJECT TEAM

- Project manager
- Multimedia designer
- Interface designer
- Writer

- Video specialist
- Audio specialist
- Multimedia programmer
- Producer of multimedia for the web

MEMBERS OF A MULTIMEDIA PROJECT TEAM

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- Project manager: The project manager is responsible for the overall development and implementation of a project as well as for the day-to-day operations

- Multimedia designers make sure that the subject matter is clear and properly presented.

- Interface designers devise the navigation pathways and content maps on screen that let the user access or modify that content.

MEMBERS OF A MULTIMEDIA PROJECT TEAM

- Multimedia writers, sometimes called content writers, create characters, action, and point of view—and they also create interactivity

- Multimedia video specialists:

  - Know the basics about shooting good video

  - Be thoroughly familiar with the tools and techniques used for digital editing on computers.

  - Understand the potentials and limitations of the medium, including interactivity, how it will affect the video, and how these limitations affect the video production itself.

MEMBERS OF A MULTIMEDIA PROJECT TEAM

- Audio specialists:
  - design and produce music, voice over narrations, and sound effects.
  - Be responsible for locating and selecting suitable music and talent, scheduling recording sessions, and digitizing and editing recorded material into computer files

MEMBERS OF A MULTIMEDIA PROJECT TEAM

- A multimedia programmer or software engineer:
  - Uses an authoring system or programming language to integrate the multimedia elements of a project into a seamless whole.
  - Build extensions to the authoring and presentation suite in order to extend the system's capabilities.

MEMBERS OF A MULTIMEDIA PROJECT TEAM

- Web site producers not only put together a coordinated set of pages for the World Wide Web but also constantly coordinate updates and changes.