

Multimedia Computing Topics - 2026

CISC 3630 Midterm Review Guide

Use the class slides for examples, diagrams, and fuller explanations.

Multimedia Concepts and Forms

- 1. Definition of Multimedia:** The development, integration, and delivery of combinations of text, graphics, animation, sound, or video through a digital processing device.
- 2. Media as a Way of Transmission:** Media is a way of transmitting information. Multimedia uses multiple forms of media to communicate.
- 3. Forms of Multimedia:** Multimedia may be non-interactive or interactive.
- 4. Non-interactive Multimedia:** The user is an observer. The developer establishes the sequence and flow of information.
- 5. Linear and Non-linear Multimedia:** Linear multimedia follows a fixed sequence. Non-linear multimedia allows the user to influence or control the path.
- 6. Interactive Multimedia:** The user participates in the flow of information.
- 7. Basic Interactivity:** Menus, buttons, links, and other controls allow users to access content and navigate.
- 8. Adaptive Multimedia:** A system may adapt information to the needs or interests of the user.
- 9. Immersive Multimedia:** A system may draw the user into an alternate or simulated environment.
- 10. The Changing Role of the User:** The media user may be an observer, a participant, or a content producer who creates, publishes, and shares multimedia.

Multimedia Visionaries

- 11. Vannevar Bush and the Memex:** The Memex was proposed as a way to store large amounts of material and reach related information through associations or trails.
- 12. The Importance of the Memex Vision:** Associative access and linked trails anticipated later hypertext, hypermedia, and non-linear multimedia systems.
- 13. Alan Turing and the Turing Machine:** The Turing Machine was an abstract machine used to define an effective procedure.
- 14. The Universal Turing Machine:** A general machine could accept the description of another machine and imitate its behavior.
- 15. Douglas Engelbart's Innovations:** The NLS introduced important forms of human-computer interaction, including the mouse, multiple screen areas, and electronic mail.
- 16. Theodore Nelson: Hypertext and Hypermedia:** Hypertext links text to related textual information. Hypermedia extends interactive linking to other forms of media.
- 17. The Xanadu Project:** A proposed expanding hypertext library that supported linked information and collaborative use.
- 18. Alan Kay and the Dynabook:** A personal, modeless multimedia computer connected to the interests, learning, and creativity of the user.
- 19. The Dynabook Vision:** Movement among text, graphics, sound, and animation anticipated later personal multimedia computing.

- 20. Graphical User Interface:** A graphical interface was intended to make the Dynabook intuitive and easier to use.
- 21. Steve Jobs and the Macintosh:** The Macintosh helped make graphical interfaces, icons, and built-in sound part of mass-market personal computing.
- 22. Tim Berners-Lee and the World Wide Web:** The Web created a global hypermedia system using servers, clients, browsers, and HTML.

Digital Data

- 23. Data and Information:** Data consists of raw facts or values. Information is data organized, interpreted, and presented so that it has meaning for a user.
- 24. Multimedia Presentation of Data:** Text, graphics, animation, sound, and video can provide context and help users understand stored data.
- 25. ASCII and Unicode:** ASCII represents a limited set of characters. Unicode supports a much wider range of languages and symbols.
- 26. Description-based and Command-based Encoding:** Description-based encoding represents the elements of media. Command-based encoding stores instructions used to produce the media.
- 27. Advantages and Challenges of Digital Information:** Digital media can be copied without generation decay and easily integrated, but large files and compatibility problems can create difficulties.
- 28. Program Files and Data Files:** Program files contain executable instructions. Data files contain media such as text, images, sound, video, or animation.
- 29. File Compatibility:** Compatibility is the ability to use a file with different hardware, software, or platforms.

Multimedia Authoring

- 30. Programming and Authoring:** Programming offers extensive control but can be time-consuming. Authoring software handles much of the programming so developers can focus on content, design, and interaction.
- 31. Core Functions of Authoring Applications:** Authoring software assembles media, synchronizes content, supports interface design, and provides interactivity.
- 32. Authoring Metaphors:** Card, icon, and timeline metaphors help developers organize media, sequence events, and visualize project structure.
- 33. Card Metaphor:** Content is organized as cards, pages, or slides. Shared background elements may be separated from unique foreground content.
- 34. Icon Metaphor:** Icons and flowlines represent media, actions, and the structure of an application.
- 35. Timeline Metaphor:** Media and events are arranged as frames over time, making the metaphor useful for dynamic and synchronized media.
- 36. Storyboards:** A storyboard is a series of planned screens or frames used to guide development and communicate the proposed experience.
- 37. Navigation Structures:** Common structures are linear or sequential, hierarchical, networked, and conditional.
- 38. Creating and Editing Content:** Authoring applications may provide tools for editing text, images, sound, animation, and other media.
- 39. Importing Content:** Media may be created in specialized applications and then imported into the authoring environment.

- 40. Supported Formats and Conversion:** Imported media must use a supported format. Conversion utilities can make incompatible media usable.
- 41. Presentation Design:** Use readable text, appropriate color, consistent visual style, and a clear layout.
- 42. Previewing and Testing:** Preview the project as the audience will experience it and test screen components, navigation, links, playback, timing, and consistency.
- 43. Prototypes:** A prototype is an incomplete working model used to clarify the proposed product, test features, and guide later work.

Media-Specific Applications

- 44. Media-Specific Applications:** Text, graphics, sound, video, and animation may be created or edited using specialized applications and then imported into an authoring application. The authoring application brings the media elements together and supports organization, synchronization, navigation, and interactivity.

Text in Multimedia

- 45. Text's Value in Multimedia:** Text communicates information, provides instructions and labels, and supports navigation in multimedia.
- 46. Typeface and Font:** A typeface is the overall design of characters. A font is a particular form of that typeface used by the computer.
- 47. Digital Character Encoding:** ASCII and Unicode allow characters to be stored and processed as digital codes.
- 48. Bitmapped Fonts:** Characters are represented as pixel patterns and may not scale smoothly.
- 49. Outline Fonts:** Outline fonts describe character shapes mathematically and can usually be resized more smoothly than bitmapped fonts.
- 50. Installed Fonts and Substitution:** If a required font is unavailable, the computer may substitute another font, changing spacing, line breaks, layout, and appearance.
- 51. Preserving Text Appearance:** Use common fonts, test on the destination system, embed or package fonts when permitted, or convert text to graphics or outlines when necessary.
- 52. Font Licenses:** A font license may restrict installation, embedding, packaging, redistribution, or web use.
- 53. Correctness of Text:** Verify spelling, grammar, punctuation, facts, names, dates, labels, instructions, navigation text, and hyperlinks.
- 54. Final Text Verification:** Confirm that text remains readable and correctly positioned in the final environment.
- 55. Hypertext and Hypermedia:** Hypertext links textual information. Hypermedia extends linked information to graphics, sound, animation, video, and other media.
- 56. HTML, CSS, and HTML5:** HTML structures web content. CSS controls visual presentation and separates content from formatting. HTML5 supports rich web media. Coding is not required for this midterm.
- 57. Basic Browser-Server Process:** A browser requests a resource, the server returns a response, and the browser interprets and presents the result.