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| The purpose of multimedia is to create content that combines different forms of media, such as text, images, audio, and video, to communicate information or entertain an audience.  2. WebSocket can be used to create real-time communication applications, such as chat applications, gaming applications, and collaboration tools.  3. A web server is a computer program that serves content to clients over the internet using the HTTP protocol.  4. A sprite is a graphic element that is used in animation or video games. It is composed of multiple images or frames that are displayed in sequence to create the illusion of motion.  5. sessionStorage and localStorage are both used for storing data on the client-side, but sessionStorage stores data for the current session only, while localStorage stores data that persists even after the browser is closed. Both use key-value pairs to save values.  6. JSON (JavaScript Object Notation) is a lightweight data interchange format that is used to transmit data between a server and a web application. JSON.stringify() is used to convert a JavaScript object to a JSON string, while JSON.parse() is used to convert a JSON string to a JavaScript object.  7. 8-bit value colors are combined in RGB format to create a 24-bit color. Each of the three color channels (red, green, and blue) uses 8 bits to represent a value between 0 and 255, resulting in over 16 million possible colors.  8. Examples of output devices include monitors, printers, and speakers, while examples of input devices include keyboards, mice, and microphones.  9. An alert is used in JavaScript to display a pop-up message to the user.  10. Two examples of using speech recognition in an application are voice-controlled assistants and automated transcription software.  11. <!DOCTYPE> is used to declare the document type and version of HTML being used in a web page, and is necessary for ensuring the page is displayed correctly in different browsers.  12. Bitmap images are composed of pixels, while vector images are composed of mathematical paths and shapes. Bitmap images are best for photographs or complex images, while vector images are better for graphics or logos as they can be resized without losing quality.  13. Bootstrap is a popular front-end framework used in web design to create responsive and mobile-friendly websites quickly and easily.  14. The 'DOMContentLoaded' event is triggered when the document has been parsed and the DOM tree is complete, while the 'load' event is triggered when all external resources have been loaded, including images, scripts, and stylesheets.  15. Speech Synthesis is the process of generating spoken language from written text, while Speech Recognition is the process of transcribing spoken language into written text.  16. CMYK is used for printing and subtractive color mixing, while RGB is used for digital displays and additive color mixing.  17. Feedback is important in systems to ensure that users understand how their actions are affecting the system and to provide a sense of control and interactivity. Multimedia can assist with this by providing visual and auditory cues, animations, and interactive elements that respond to user input.  18. Ways to turn spoken sounds into written words include speech recognition software, transcription services, and manual transcription by human operators.  21. A canvas context is a 2D or 3D rendering context that provides methods for drawing on an HTML canvas element.    Radio buttons allow the user to select a single option from a list, while check boxes allow the user to select multiple options.  The code is missing a command to actually draw the rectangle on the canvas. A possible missing line would be "ctx.stroke()".  Line number 4 is missing the color value. A possible completed line would be "ctx.strokeStyle = 'red';".  Storing data in a web browser can be done using technologies like cookies, local storage, or indexedDB, and can be useful for saving user preferences or data between sessions.  A Bootstrap grid layout allows developers to create responsive and flexible web page layouts by dividing the page into columns and rows.  Collision detection is used to determine if two or more objects are intersecting or colliding in a game or simulation. To test if an object is going off the canvas area, you would compare its position and velocity to the boundaries of the canvas.  A Bitmap image is composed of pixels, and is often used for photographs or complex images, while a Vector image is composed of mathematical shapes and is often used for graphics or logos.  An 8-bit color palette image can display up to 256 colors, while a 24-bit color image can display over 16 million colors, resulting in higher quality and smoother color transitions.  Voice recognition uses computer algorithms to analyze and interpret spoken language, converting it into text or commands that can be used to  Audio is a crucial component of multimedia, as it can convey emotion, provide context, and enhance the user experience. Audio can be used in various ways, such as background music, voiceovers, sound effects, or interactive elements.  JavaScript is a programming language that is commonly used in web development to create dynamic and interactive web pages. Its purpose is to provide functionality and interactivity to web pages, allowing developers to create more engaging and responsive user experiences.  Multimedia programming refers to the process of creating multimedia content that combines various forms of media, such as text, graphics, audio, and video, to communicate information or entertainment. This can involve designing and developing multimedia applications, games, websites, or other interactive experiences.  Media is useful for applications because it can enhance the user experience by providing more engaging, interactive, and immersive content. For example, a website that incorporates video, audio, and animations can make the content more dynamic and engaging for users, while a mobile app that uses voice recognition or augmented reality can provide a more intuitive and personalized experience.  To make the button call a function named "begin" when clicked, the code would be: <button onclick="begin()">Click me</button>  The completed code for lines 1-4 would be:  <canvas id="paper" width="300" height="150"></canvas>  <script>  var c = document.getElementById("paper");  var ctx = c.getContext("2d");  ctx.strokeStyle="red";  ctx.strokeRect(0,0,100,100);  </script> | An analog-to-digital converter (ADC) is a device that converts analog signals (such as sound or light waves) into digital signals that can be processed by a computer.  20. An example in Multimedia that would use an ADC is recording sound from a microphone and converting it into a digital format that can be edited and processed using a computer program.  22. A programmer would use WebRTC for an application that requires constant video and audio communication because it provides real-time, peer-to-peer communication capabilities, while WebSocket is better suited for messaging and other non-real-time applications.  23. myObj.car = "BMW";  25. Some problems with voice recognition include difficulty recognizing accents, misinterpretation of homophones, and background noise interfering with the accuracy of the recognition.  26. To test for collision detection between two objects in a game, you would need to check if the bounding boxes of the two objects intersect. This can be done by comparing the x and y coordinates of the top-left and bottom-right corners of the two boxes.  27. The next multimedia device to come in the future may be a more advanced form of virtual or augmented reality technology.  28. Some multimedia devices that can aid individuals with disabilities include screen readers, text-to-speech software, and closed captioning.  29. Multimedia outlets can improve the field of education by providing interactive and engaging content, such as videos, simulations, and virtual field trips.  30. Multimedia outlets/devices can improve a person's life by providing access to information, entertainment, and communication opportunities that may not be possible otherwise.  31. Multimedia can advance in the field of entertainment like video games by incorporating more advanced graphics, sound, and interactive elements, such as virtual reality and augmented reality.  32. Linear multimedia is content that is presented in a sequential, predetermined order, such as a movie or a slideshow.  34. One framework that we covered in class is Bootstrap, which is a front-end web development framework used to create responsive and mobile-friendly websites quickly and easily. It provides pre-designed HTML, CSS, and JavaScript components that can be easily customized.  40. Streaming video is the process of delivering video content over the internet in real-time. A CDN (content delivery network) is important for live streaming because it can improve the speed and reliability of the video by caching content on servers closer to the end-user and distributing the load across multiple servers.  Design issues that need to be considered for the voice recognition system include ensuring accurate speech recognition, providing clear instructions and feedback to the user, and addressing potential issues such as background noise or accents.  The onload event is used to trigger a function or action once an image has finished loading. | moveTo is used to set the starting point for a line or shape, lineTo is used to draw a straight line from the starting point to a specified point, and stroke is used to actually draw the line or shape.  36. A sprite sheet is a single image that contains multiple frames or images of a sprite animation. It is useful in creating multimedia projects because it allows for efficient loading of multiple frames and easier animation management.  37. <canvas id="myCanvas" width="300" height="150"></canvas>  var c = document.getElementById("myCanvas");  var ctx = c.getContext("2d");  ctx.fillStyle = "blue";  ctx.fillRect(50, 50, 100, 75);  38. HTML Canvas is an HTML element that provides a space for drawing graphics using JavaScript.  39. HTML CanvasContext is an object that provides methods and properties for drawing on an HTML canvas element.  Multimedia refers to the use of multiple forms of media (such as text, audio, video, graphics, and animation) to convey information or entertainment content.  Linear multimedia refers to media that is presented in a fixed sequence, while non-linear multimedia allows users to interact with the content and choose their own path.  The computer interface has evolved from command-line interfaces to graphical user interfaces (GUIs) with icons and windows, and more recently to touch screens and voice-controlled interfaces.  The Document Object Model (DOM) is a programming interface for HTML and XML documents that allows scripts to dynamically access and modify the content, structure, and style of a web page.  onClick events are used to trigger a function or action when the user clicks on an HTML element.  HTML Canvas is a drawing surface that allows developers to create and manipulate graphics in real time using JavaScript. The Canvas Context is the 2D or 3D environment in which the graphics are created and rendered.  window.setTimeout is used to delay the execution of a function or code block for a specified number of milliseconds.  document.addEventListener("DOMContentLoaded", start) is used to run a function (in this case, "start") once the web page has finished loading.  The DIV tag is used to create a block-level element in HTML that can be used for grouping and styling other elements.  moveTo is used to move the drawing pen to a new starting point, lineTo is used to draw a straight line from the current point to a new endpoint, and stroke is used to render the path or shape created by the pen.  save, translate, and restore are used to save the current state of a canvas (e.g. the current transformation matrix or fill color), move the origin point to a new location, and restore the saved state respectively.  The Console is a debugging tool in JavaScript that allows developers to log messages, inspect variables, and run commands. |