Context: You are an accessibility expert reviewing HTML for accessibility issues. Analyze the following code in the context of WCAG (Web Content Accessibility Guidelines) 2.2, listing any issues that may violate these guidelines. You will only be analyzing the HTML, ignoring any included or missing styles and scripts. Code: ```<!DOCTYPE html> <html lang="en"> <head> <meta charset="UTF-8"> <meta name="viewport" content="width=device-width, initial-scale=1.0"> <link rel="stylesheet" href="styles.css"> <title>Your Bank</title> </head> <body dir="ltr"> <style>body { font-family: 'Arial', sans-serif; margin: 0; padding: 0; unicode-bidi: embed; } header { background-color: #333; color: white; padding: 1em; display: flex; justify-content: space-between; align-items: center; } nav ul { list-style-type: none; display: flex; } nav a { text-decoration: none; color: white; margin: 0 1em; } .hero { text-align: center; padding: 3em; background-image: url('background.jpg'); background-size: cover; color: white; } button { padding: 1em 2em; font-size: 1em; cursor: pointer; } .video-section { text-align: center; padding: 2em; } .about { padding: 3em; } .contact { background-color: #f2f2f2; padding: 3em; } form { display: grid; gap: 1em; } footer { background-color: #333; color: white; text-align: center; padding: 1em; } </style> <header> <div class="logo">Your Bank</div> <nav> <ul> <li><a href="#">Home</a></li> <li><a href="#">Accounts</a></li> <li><a href="#">Services</li> <li><a href="#">Contact Us</a></li> </ul> </nav> </header> <section class="hero"> <h1 style="color: #ffffff; background-color: rgba(0, 0, 0, 0.7); padding: 10px;"> Welcome to Your Bank </h1> <p style="color: #ffffff; background-color: rgba(0,0,0,0.7); padding: 10px"> Your Trusted Financial Partner </p> <button onclick="playVideo()" style="background-color: #2E7D32; color: #FFFFFF;"></button> </section> <section class="video-section"> <video controls> <source src="bank\_video.mp4" type="video/mp4"> Your browser does not support the video tag. </video> </section> <section class="about"> <h2>About Us</h2> <p><i>Lorem ipsum dolor sit amet, consectetur adipiscing elit. ...</i></p> </section> <section class="contact"> <h2>Contact Us</h2> <form action="contact.php" method="post"> <label for="username">Username:</label><br> <input type="text" id="username" name="username"><br> <input type="password" id="pwd" name="pwd"> <input type="radio" id="1" name="fav\_number" value="1"> <label for="1"></label><br> <input type="radio" id="2" name="fav\_number" value="2"> <label for="2">2</label><br> <input type="radio" id="3" name="fav\_number" value="3"> <label for="3">3</label> <input type="checkbox" id="vehicle1" name="vehicle1" value="Bike"> <label for="vehicle1"> I have a bike</label><br> <input type="checkbox" id="vehicle2" name="vehicle2" value="Car"> <label for="vehicle2"> I have a car</label><br> <input type="checkbox" id="vehicle3" name="vehicle3" value="Boat"> <label for="vehicle3"> I have a boat</label> <label for="myfile">Select a file:</label> <input type="file" id="myfile" name="myfile"> <button type="submit">Submit</button> </form> </section> <footer> <p>&copy; 2023 Your Bank. All Rights Reserved.</p> </footer> <script> function playVideo() { var video = document.querySelector('video'); video.play(); } </script> </body> </html> ``` Response format: Snippet with error: … Location of error: … WCAG Guideline violated: … Detection Algorithm: … Explanation of Error: …

<nav>

<ul>

<li><a href="#">Home</a></li>

<li><a href="#">Accounts</a></li>

<li><a href="#">Services</li>

<li><a href="#">Contact Us</a></li>

</ul>

</nav>

Location of error: Navigation links

WCAG Guideline violated: 2.4.4 (Link Purpose in Context)

Detection Algorithm: Check if the hyperlink text is descriptive enough regarding its purpose (e.g., "Click Here").

Explanation of Error: The links should have more descriptive text to ensure that users know their destination without additional context.

<button onclick="playVideo()" style="background-color: #2E7D32; color: #FFFFFF;"></button>

Location of error: Empty button in the hero section

WCAG Guideline violated: 4.1.2 (Name, Role, Value)

Detection Algorithm: Check if all interactive elements have a name or descriptive text.

Explanation of Error: The button has no accessible name or text, making it unusable for screen readers.

<section class="video-section">

<video controls>

<source src="bank\_video.mp4" type="video/mp4">

Your browser does not support the video tag.

</video>

</section>

Location of error: Video element

WCAG Guideline violated: 1.2.1 (Audio-only and Video-only: Prerecorded)

Detection Algorithm: Verify if all video content has a text equivalent, such as transcripts or captions.

Explanation of Error: The video lacks captions or text alternatives for users who are deaf or hard of hearing.

<form action="contact.php" method="post">

<label for="username">Username:</label><br>

<input type="text" id="username" name="username"><br>

<input type="password" id="pwd" name="pwd">

<input type="radio" id="1" name="fav\_number" value="1"> <label for="1"></label><br>

<input type="radio" id="2" name="fav\_number" value="2"> <label for="2">2</label><br>

<input type="radio" id="3" name="fav\_number" value="3"> <label for="3">3</label>

<input type="checkbox" id="vehicle1" name="vehicle1" value="Bike"> <label for="vehicle1"> I have a bike</label><br>

...

</form>

Location of error: Form elements

WCAG Guideline violated: 3.3.2 (Labels or Instructions)

Detection Algorithm: Confirm if all form elements have corresponding labels.

Explanation of Error: Several form elements are missing labels, making them difficult to understand for screen reader users.

<body dir="ltr">

Location of error: Body element

WCAG Guideline violated: 3.1.1 (Language of Page)

Detection Algorithm: Check if the lang attribute is present and correctly set in the <html> element.

Explanation of Error: While the body tag specifies text direction, the <html> tag already declares the language, making it redundant here.

Are there any more issues? List all that you find.

<section class="hero">

<h1 style="color: #ffffff; background-color: rgba(0, 0, 0, 0.7); padding: 10px;"> Welcome to Your Bank </h1>

<p style="color: #ffffff; background-color: rgba(0,0,0,0.7); padding: 10px"> Your Trusted Financial Partner </p>

</section>

Location of error: Color contrast in hero section

WCAG Guideline violated: 1.4.3 (Contrast (Minimum))

Detection Algorithm: Check for sufficient contrast between text and background colors.

Explanation of Error: The text color may not provide sufficient contrast against the background image or color for users with visual impairments.

<img src="background.jpg">

Location of error: Background image in the hero section

WCAG Guideline violated: 1.1.1 (Non-text Content)

Detection Algorithm: Check if all meaningful images include alternative text.

Explanation of Error: The background image lacks an alt attribute, making its content inaccessible to screen readers.

<button onclick="playVideo()" style="background-color: #2E7D32; color: #FFFFFF;"></button>

Location of error: Styling-only information

WCAG Guideline violated: 1.3.1 (Info and Relationships)

Detection Algorithm: Check if interactive elements have meaningful content beyond style.

Explanation of Error: A button's functionality and purpose should not be conveyed by style alone.

<link rel="stylesheet" href="styles.css">

Location of error: External styles

WCAG Guideline violated: 2.1.2 (No Keyboard Trap)

Detection Algorithm: Ensure interactive elements are fully accessible without relying on styles.

Explanation of Error: Ensure all styled hover or focus states are still keyboard-accessible and operable, although this requires checking the external stylesheet.

<video controls>

<source src="bank\_video.mp4" type="video/mp4">

Your browser does not support the video tag.

</video>

Location of error: Text alternative for video

WCAG Guideline violated: 1.2.2 (Captions (Prerecorded))

Detection Algorithm: Verify that synchronized media has captions.

Explanation of Error: Ensure the video includes captions synced with the media for accessibility.

<input type="checkbox" id="vehicle1" name="vehicle1" value="Bike"> <label for="vehicle1"> I have a bike</label><br>

Location of error: Input fields and labels

WCAG Guideline violated: 1.3.1 (Info and Relationships)

Detection Algorithm: Ensure each input element is properly labeled.

Explanation of Error: Each checkbox should have a visible label, which appears to be missing for some radio and input fields.

<div class="logo">Your Bank</div>

Location of error: Logo element

WCAG Guideline violated: 1.1.1 (Non-text Content)

Detection Algorithm: Check if all logo elements have an accessible name or description.

Explanation of Error: The logo text isn't explicitly labeled, which can be problematic for screen readers relying on semantic HTML.

<style>body { font-family: 'Arial', sans-serif; margin: 0; padding: 0; unicode-bidi: embed; }</style>

Location of error: Inline styles

WCAG Guideline violated: 1.3.1 (Info and Relationships)

Detection Algorithm: Ensure information is not conveyed solely via CSS.

Explanation of Error: Important information should not rely solely on CSS visual formatting, affecting assistive technology.

<html lang="en">

(Nothing wrong here; correct language declaration.) Location of error: None

WCAG Guideline violated: None

Detection Algorithm: Confirm the presence of the lang attribute.

Explanation of Error: The lang attribute is correctly present and set in the <html> element, so no error here.

Are there any more issues? List all that you find.

<form action="contact.php" method="post">

<label for="username">Username:</label><br>

<input type="text" id="username" name="username"><br>

<input type="password" id="pwd" name="pwd">

...

<label for="myfile">Select a file:</label>

<input type="file" id="myfile" name="myfile">

<button type="submit">Submit</button>

</form>

Location of error: Lack of input instructions and required indicators

WCAG Guideline violated: 3.3.2 (Labels or Instructions), 3.3.3 (Error Suggestion), 3.3.4 (Error Prevention)

Detection Algorithm: Check for form instructions, required field indicators, and error prevention mechanisms.

Explanation of Error: The form lacks instructions for users, doesn't indicate which fields are required, and doesn’t provide error suggestions.

<header>

<div class="logo">Your Bank</div>

<nav>

<ul>

<li><a href="#">Home</a></li>

<li><a href="#">Accounts</a></li>

<li><a href="#">Services</a></li>

<li><a href="#">Contact Us</a></li>

</ul>

</nav>

</header>

Location of error: Navigation links

WCAG Guideline violated: 1.4.1 (Use of Color)

Detection Algorithm: Ensure functional elements are not dependent solely on color.

Explanation of Error: Navigation links rely solely on color for distinction, which may not be reliable for all users, including those with color vision deficiencies.

<body dir="ltr">

Location of error: Direction attribute without semantic context

WCAG Guideline violated: 3.1.2 (Language of Parts)

Detection Algorithm: Confirm the correct semantic context for the direction attribute if different languages are used within the content.

Explanation of Error: The dir attribute alone may not be sufficient if language changes need to be indicated within the content for various parts; dir should reflect actual content direction changes, especially in multilingual documents.

<section class="hero">

...

</section>

Location of error: Background image accessibility

WCAG Guideline violated: 1.4.5 (Images of Text)

Detection Algorithm: Verify the text embedded in images and provide an accessible alternative.

Explanation of Error: Embedding text within a background image without providing accessible alternatives may hinder readability for visually impaired users.

<video controls>

<source src="bank\_video.mp4" type="video/mp4">

Your browser does not support the video tag.

</video>

Location of error: Video instructions

WCAG Guideline violated: 1.2.3 (Audio Description or Media Alternative (Prerecorded))

Detection Algorithm: Check for the presence of audio descriptions or a media alternative for videos.

Explanation of Error: The video lacks an audio description or an alternative like a full transcript for users who can't see visual content.

Location of error: focus styles

WCAG Guideline violated: 2.4.7 (Focus Visible)

Detection Algorithm: Ensure elements have visible focus indicators when navigated using the keyboard.

Explanation of Error: No focus indicator styles are provided for keyboard navigation through interactive elements, essential for sighted keyboard users.

Location of error: Non-interactive elements having event handlers

WCAG Guideline violated: 2.1.1 (Keyboard)

Detection Algorithm: Check for non-interactive elements with event handlers that require interaction.

Explanation of Error: Ensure elements intended to be interactive are keyboard-navigable; onclick should be accompanied by keyboard operability mechanisms.

New Chat (Alt-J)