## 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: …

### Snippet with error:

```html

<nav>

<ul>

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

</ul>

</nav>

```

### Location of error:

This issue is located within the `<nav>` element, specifically within the unordered list (`<ul>`) inside the navigation bar.

### WCAG Guideline violated:

\*\*2.4.6 Headings and Sections (H)\*\*

### Detection Algorithm:

The algorithm checks for proper use of heading elements (`<h1>`, `<h2>`, etc.) to structure content semantically and ensure that interactive sections like navigation menus are accessible.

### Explanation of Error:

The `<li>` element containing the link to "Services" lacks an anchor (`<a>`) tag. This means that while the link text "Services" is present, it is not properly enclosed within an `<a>` tag, which is required for it to function as a clickable link. Without this, users relying on keyboard navigation or screen readers might not be able to interact with or understand the purpose of this item in the navigation menu.

To fix this issue, wrap the link text "Services" with an `<a>` tag, specifying the destination URL if applicable:

```html

<li><a href="services.html">Services</a></li>

```

This correction ensures that the link is functional and accessible, adhering to WCAG 2.2 guidelines by providing a clear and usable navigation structure.

Citations:

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

Based on the provided HTML code and the WCAG 2.2 guidelines, here are additional accessibility issues identified:

### Snippet with error:

```html

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

```

### Location of error:

This issue is located within the `<button>` element used to play a video.

### WCAG Guideline violated:

\*\*2.4.4 Link Purpose (In Context)\*\*

### Detection Algorithm:

The algorithm checks for buttons and links that convey their purpose clearly, especially in the context of their surrounding content.

### Explanation of Error:

The button lacks an accessible name, which is crucial for users of assistive technologies to understand its purpose. Without an accessible name, screen readers will announce the button as just a generic "button," which does not inform the user about its function.

To fix this issue, add an `aria-label` attribute to the button to provide a clear description of its action:

```html

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

```

### Snippet with error:

```html

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

```

### Location of error:

This issue is located within the `<input>` element used for password input.

### WCAG Guideline violated:

\*\*2.5.3 Label in Name (A)\*\*

### Detection Algorithm:

The algorithm checks for input fields that lack labels, which are essential for understanding the purpose of the field and filling it out correctly.

### Explanation of Error:

The password input field lacks a visible label. While it has an ID (`id="pwd"`), this alone does not suffice for accessibility because visually impaired users rely on labels to understand what information is expected in the field.

To fix this issue, add a `<label>` element associated with the input field using the `for` attribute matching the input's `id`:

```html

<label for="pwd">Password:</label>

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

```

These corrections address specific WCAG 2.2 guidelines by improving the clarity and usability of interactive elements on the webpage, ensuring a more accessible experience for users with various disabilities.

Citations:

[1] https://www.w3.org/TR/WCAG22/

[2] https://www.accessibility.works/blog/wcag-2-2-guide/

[3] https://www.w3.org/WAI/test-evaluate/tools/list/

[4] https://www.milespartnership.com/how-we-think/article/tackling-most-common-web-accessibility-issues-2024

[5] https://abilitynet.org.uk/news-blogs/wcag-22-what-you-need-know

[6] https://www.w3.org/WAI/standards-guidelines/wcag/new-in-22/

[7] https://www.deque.com/blog/wcag-2-2-removes-4-1-1-parsing-and-how-axe-core-is-impacted/

[8] https://www.boia.org/blog/wcag-2.2-is-here

[9] https://www.youtube.com/watch?v=XcSSTBaegi8

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

Upon further review of the provided HTML code against the WCAG 2.2 guidelines, additional accessibility concerns emerge:

### Snippet with error:

```html

<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>

```

### Location of error:

This issue is located within the `<section>` element designated as "hero", specifically within the `<h1>` and `<p>` tags styled inline.

### WCAG Guideline violated:

\*\*1.4.3 Contrast (Minimum)\*\*

### Detection Algorithm:

The algorithm checks for sufficient contrast between text and its background to ensure readability for users with visual impairments.

### Explanation of Error:

The text colors (#ffffff) used for both the `<h1>` and `<p>` elements within the hero section do not provide enough contrast against the background color (rgba(0, 0, 0, 0.7)), which is semi-transparent black. This could lead to difficulty in reading the text for users with visual impairments.

To fix this issue, choose contrasting colors that meet the minimum contrast ratio recommended by WCAG 2.2 (4.5:1 for normal text and 3:1 for large text). For example, using a lighter shade of gray for the text could improve visibility:

```html

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

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

```

### Snippet with error:

```html

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

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

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

...

</form>

```

### Location of error:

This issue is located within the `<form>` element, specifically within the `<label>` and `<input>` elements for the username field.

### WCAG Guideline violated:

\*\*2.5.3 Label in Name (A)\*\*

### Detection Algorithm:

The algorithm checks for input fields that lack labels, which are essential for understanding the purpose of the field and filling it out correctly.

### Explanation of Error:

While the `<label>` element is present for the username input field, it does not enclose the `<input>` element. This is a common mistake that can affect accessibility because screen readers read the label after the input field, which can confuse users about which label belongs to which input.

To fix this issue, ensure the `<label>` element wraps the `<input>` element:

```html

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

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

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

...

</form>

```

By addressing these issues, the webpage becomes more accessible, adhering to WCAG 2.2 guidelines and enhancing the overall user experience for individuals with disabilities.

Citations:

[1] https://www.w3.org/TR/WCAG22/

[2] https://www.w3.org/WAI/WCAG22/Techniques/

[3] https://www.accessibility.works/blog/wcag-2-2-guide/

[4] https://www.milespartnership.com/how-we-think/article/tackling-most-common-web-accessibility-issues-2024

[5] https://tetralogical.com/blog/2023/10/05/whats-new-wcag-2.2/

[6] https://adasitecompliance.com/wcag-2-2-decoding-latest-web-accessibility-guidelines/

[7] https://www.w3.org/WAI/WCAG22/Understanding/accessible-authentication-minimum.html

[8] https://accessibility.psu.edu/guidelines/wcaglist/

[9] https://www.boia.org/blog/wcag-2.2-is-here

[10] https://dequeuniversity.com/resources/wcag-2.2/