## 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">

<title>Fitness Tracker</title>

<style>

body {

font-family: Arial, sans-serif;

margin: 0;

padding: 0;

}

header, footer {

background-color: #333;

color: white;

text-align: center;

padding: 1em;

}

nav {

background-color: #444;

padding: 0.5em;

}

nav a {

color: white;

text-decoration: none;

padding: 0.5em 1em;

margin: 0 1em;

border-radius: 5px;

}

section {

padding: 20px;

margin: 10px;

}

img {

max-width: 100%;

height: auto;

}

table {

width: 100%;

border-collapse: collapse;

margin-top: 20px;

}

th, td {

border: 1px solid #ddd;

padding: 8px;

text-align: left;

}

button {

background-color: #4CAF50; /\* Green background \*/

color: #000000; /\* Changed text color to black \*/

padding: 10px 20px;

border: none;

border-radius: 5px;

cursor: pointer;

}

button:hover {

background-color: #45a049;

}

</style>

</head>

<body>

<header>

<h1>Fitness Tracker</h1>

</header>

<nav>

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

<a href="#">Workouts</a>

<a href="#">Nutrition</a>

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

</nav>

<section>

<h2>Welcome to our Fitness Tracker</h2>

<p>This is a simple fitness tracker website. You can track your workouts, access nutrition information, and contact us for any inquiries.</p>

<img src="fitness\_image.jpg" alt="Fitness Image">

<h3>Latest Workouts</h3>

<table>

<tr>

<th>Date</th>

<th>Exercise</th>

<th>Duration</th>

</tr>

<tr>

<td>2023-01-01</td>

<td>Running</td>

<td>30 minutes</td>

</tr>

<tr>

<td>2023-01-02</td>

<td>Weightlifting</td>

<td>45 minutes</td>

</tr>

</table>

<h2 onmouseout="PauseVideo()">Exercise Videos</h2>

<iframe width="560" height="315" src="https://www.youtube.com/embed/your-exercise-video" frameborder="0" allowfullscreen></iframe>

<h3>Contact Us</h3>

<form>

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

<label for="email">Email:</label>

<label for="email">Email:</label>

<input type="email" id="email" name="email" required><br>

<label for="message">Message:</label><br>

<textarea id="message" name="message" rows="4" required></textarea><br>

<button type="submit" style="color: rgb(0, 0, 0); background-color: rgb(76, 175, 80);"></button>

</form>

</section>

<footer>

<p>&copy; 2023 Fitness Tracker. All rights reserved.</p>

</footer>

</body>

</html>```

Response format:

Snippet with error: …

Location of error: …

WCAG Guideline violated: …

Detection Algorithm: …

Explanation of Error: …

### Snippet with error:

```html

<label for="email">Email:</label>

<label for="email">Email:</label>

<input type="email" id="email" name="email" required><br>

```

### Location of error:

This issue occurs within the `<section>` tag, specifically inside the form element where the labels for the email input field are duplicated.

### WCAG Guideline violated:

\*\*2.4.6 Headings and Sections (H57)\*\*

### Detection Algorithm:

The algorithm checks for duplicate labels associated with the same input field, which can confuse screen readers and assistive technologies, violating the guideline that requires unique labels for each form control.

### Explanation of Error:

Duplicate labels (`<label for="email">Email:</label>`) are provided for a single input field (`<input type="email" id="email" name="email" required>`). This duplication does not serve any functional purpose but can mislead users who rely on assistive technologies, as they might interpret this as indicating two separate fields for the same piece of information, which is incorrect.

Citations:

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

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

### Snippet with error:

```html

<button type="submit" style="color: rgb(0, 0, 0); background-color: rgb(76, 175, 80);"></button>

```

### Location of error:

This issue is found within the `<section>` tag, specifically within the form element where the submit button lacks accessible names and has inline styles for styling.

### WCAG Guideline violated:

\*\*2.4.7 Focus Visible (AA)\*\*

### Detection Algorithm:

The algorithm checks for the presence of sufficient visual cues to indicate focus state for interactive elements, especially buttons. Inline styles for styling without proper semantic markup or roles can obscure the default focus styles, making it difficult for keyboard users to navigate.

### Explanation of Error:

The button lacks a clear label or accessible name, which is essential for screen reader users to understand its purpose. Additionally, using inline styles for styling instead of external CSS can lead to maintenance issues and potentially override existing focus styles, making it harder for users to see which element is currently focused.

### Additional Issue:

#### Snippet with error:

```html

<h2 onmouseout="PauseVideo()">Exercise Videos</h2>

<iframe width="560" height="315" src="https://www.youtube.com/embed/your-exercise-video" frameborder="0" allowfullscreen></iframe>

```

### Location of error:

This issue is located within the `<section>` tag, specifically where an `onmouseout` event handler is attached to an `<h2>` heading to pause a video.

### WCAG Guideline violated:

\*\*2.1.1 Keyboard (A)\*\*

### Detection Algorithm:

The algorithm looks for elements that rely solely on mouse events for functionality, excluding keyboard users from accessing certain features.

### Explanation of Error:

Using JavaScript event handlers like `onmouseout` to control media playback can prevent keyboard-only users from interacting with the video since they cannot trigger mouse events. This violates the principle of operability, which ensures that users can operate the interface (including initiating and managing content) using a keyboard.

To address these issues, consider the following improvements:

- Ensure buttons have accessible names either through text labels or ARIA attributes like `aria-label`.

- Use external CSS for styling to maintain separation of concerns and avoid overriding focus styles.

- Provide alternative methods for controlling media playback that do not rely solely on mouse events, such as keyboard shortcuts or touch gestures.

Citations:

[1] https://adabook.medium.com/wcag-2-2-aa-guide-checklist-for-2021-web-accessibility-66c6fdaea034

[2] https://www.levelaccess.com/blog/wcag-2-2-aa-summary-and-checklist-for-website-owners/

[3] https://www.wuhcag.com/wcag-checklist/

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

[5] https://www.digitala11y.com/wcag-checklist/

[6] https://webaim.org/standards/wcag/checklist

[7] https://wcag.com/blog/wcag-2-2-aa-summary-and-checklist-for-website-owners/

[8] https://adasitecompliance.com/wcag-2-2-checklist/

[9] https://www.boia.org/wcag-2.2aa-checklist

[10] https://media.dequeuniversity.com/en/docs/web-accessibility-checklist-wcag-2.2.pdf

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

After reviewing the provided code against the WCAG 2.2 AA checklist and considering the insights from the sources, here are additional accessibility issues identified:

### Snippet with error:

```html

<img src="fitness\_image.jpg" alt="Fitness Image">

```

### Location of error:

This issue is found within the `<section>` tag, specifically where an image is used without providing a detailed alternative text.

### WCAG Guideline violated:

\*\*1.1.1 Non-text Content (A)\*\*

### Detection Algorithm:

The algorithm checks for the presence of alternative text for non-text content, ensuring that it is descriptive enough to convey the purpose or function of the content to users who cannot see it.

### Explanation of Error:

The alternative text "Fitness Image" is too generic and does not describe what the image represents. Providing a detailed description helps users with visual impairments understand the content of the image.

### Additional Issue:

#### Snippet with error:

```html

<iframe width="560" height="315" src="https://www.youtube.com/embed/your-exercise-video" frameborder="0" allowfullscreen></iframe>

```

### Location of error:

This issue is located within the `<section>` tag, specifically where an iframe embedding a YouTube video is used without providing alternative text or captions.

### WCAG Guideline violated:

\*\*1.2.3 Audio Description or Text Alternatives (A)\*\*

### Detection Algorithm:

The algorithm looks for multimedia content, such as videos, that lack alternative text or captions, which are crucial for users who are deaf or hard of hearing.

### Explanation of Error:

While the code snippet does not explicitly mention the absence of captions, it's common practice to embed videos without automatic captioning, which can exclude users who rely on captions for understanding video content. To address this, captions should be added to the video itself or a text transcript should be provided alongside the video.

### Additional Recommendations Based on WCAG 2.2 AA Checklist:

- \*\*Ensure Color Contrast\*\*: Verify that the contrast ratio between text and background colors meets the minimum requirements to ensure readability for users with color blindness or other visual impairments.

- \*\*Avoid Flashing Content\*\*: Check if any part of the webpage flashes more than three times per second, which could cause seizures in people with photosensitive epilepsy.

- \*\*Provide Sign Language Translations\*\*: For videos with speech, ensure sign language translations are provided to accommodate users who are deaf or hard of hearing.

- \*\*Use Clear Labels for Form Controls\*\*: Ensure that all form controls have clear labels to aid users in filling out forms accurately.

By addressing these issues, the website can become more accessible to a broader range of users, including those with disabilities.

Citations:

[1] https://media.dequeuniversity.com/en/docs/web-accessibility-checklist-wcag-2.2.pdf

[2] https://www.digitala11y.com/wcag-checklist/

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

[4] https://webaim.org/standards/wcag/checklist

[5] https://adasitecompliance.com/wcag-2-2-checklist/

[6] https://accessible.org/wcag/

[7] https://dubbot.com/dubblog/2024/accessibility-checklist-update-now-includes-wcag-2.2.html

[8] https://adabook.medium.com/wcag-2-2-aa-guide-checklist-for-2021-web-accessibility-66c6fdaea034

[9] https://www.audioeye.com/post/wcag-checklist/

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