## 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>

<base href="https://bhargavichandu1.github.io/">

<meta charset="UTF-8">

<meta name="viewport" content="width=device-width, initial-scale=1.0">

<title>Hospital Management System</title>

<style>

body {

margin: 0;

padding: 0;

font-family: 'Arial', sans-serif;

color: #333; /\* Set the default text color \*/

}

header {

background-image: url('hospital\_background.jpg');

background-size: cover;

color: #fff;

text-align: center;

padding: 50px;

}

nav {

background-color: #333;

overflow: hidden;

}

nav a {

float: left;

display: block;

color: white;

text-align: center;

padding: 14px 16px;

text-decoration: none;

}

section {

padding: 20px;

}

footer {

background-color: #333;

color: white;

text-align: center;

padding: 10px;

position: fixed;

bottom: 0;

width: 100%;

}

h1, h2, h3, h4, h5, h6 {

color: #fff;

}

/\* Add your additional styles for buttons, input fields, etc. \*/

label {

display: block;

margin-bottom: 5px;

color: #333; /\* Set label color \*/

}

input, textarea, button {

margin-bottom: 10px;

}

/\* Add more specific styles for form elements if needed \*/

</style>

</head>

<body>

<!-- Header -->

<header>

<marquee>Hospital Management System</marquee>

</header>

<!-- Navigation -->

<nav>

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

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

<a href="#about">About Us</a>

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

<!-- Add more navigation links as needed-->

</nav>

<!-- Home Section -->

<section id="home">

<h2>Welcome to Our Hospital</h2>

<p>This is a brief description of your hospital and its services.</p>

<!-- HTML5 video or audio -->

<video width="400" controls>

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

Your browser does not support the video tag.

</video>

</section>

<!-- Services Section -->

<section id="services">

<h2>Our Services</h2>

<p>Describe the services offered by your hospital.</p>

<!-- Add more content and sections as needed-->

</section>

<!-- About Section -->

<section id="about">

<h4>About Us</h4>

<h3>Provide information about the hospital's history, mission, and values.</h3>

<!-- Add more content and sections as needed-->

</section>

<!-- Contact Section -->

<section id="contact">

<h2>Contact Us</h2>

<form>

<label for="name"></label>

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

<br>

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

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

<br>

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

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

<br>

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

</form>

</section>

<meta http-equiv="refresh" content="0">

<!-- Footer -->

<footer>

<p>© 2023 Hospital Management System. 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

<header>

<marquee>Hospital Management System</marquee>

</header>

```

### Location of error:

In the `<head>` section, within the `<style>` tag, there is a comment indicating where additional styles for buttons, input fields, etc., should be added. However, this comment is misplaced and should be located outside the `<style>` tag but still within the `<head>` section.

### WCAG Guideline violated:

\*\*2.4.1 Bypass Blocks (Level A)\*\*

### Detection Algorithm:

The algorithm checks for comments placed inside style tags, which could potentially confuse screen readers or assistive technologies.

### Explanation of Error:

Comments intended for developers, such as instructions or notes, should not be placed within the `<style>` tag because they might be interpreted as part of the CSS rules by some assistive technologies. This can lead to confusion for users relying on these technologies, violating WCAG guideline 2.4.1, which requires that Web pages be designed so that all functionality is available from a keyboard and that web content is perceivable without requiring interaction.

To fix this issue, move the comment outside the `<style>` tag but keep it within the `<head>` section:

```html

<!-- Add your additional styles for buttons, input fields, etc. -->

<style>

/\* Existing CSS styles \*/

</style>

```

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 issues identified:

### Issue 1: Use of `<marquee>` Tag

- \*\*Snippet with error:\*\*

```html

<header>

<marquee>Hospital Management System</marquee>

</header>

```

- \*\*WCAG Guideline violated:\*\* 2.2.4 Carriage Returns (AA)

- \*\*Explanation:\*\* The `<marquee>` tag is deprecated and not recommended for use due to its poor accessibility features. It can cause issues with screen readers and is generally discouraged in modern web development practices.

### Issue 2: Lack of Alternative Text for Non-text Content

- \*\*Snippet with error:\*\* Video element without alt attribute.

```html

<video width="400" controls>

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

Your browser does not support the video tag.

</video>

```

- \*\*WCAG Guideline violated:\*\* 2.4.4 Link Purpose (In Context) (A)

- \*\*Explanation:\*\* Although the video has a fallback text ("Your browser does not support the video tag."), it's recommended to add `alt` attributes to videos for better accessibility, especially for users who rely on screen readers. Since videos don't have visual content, the `alt` attribute should describe the purpose or content of the video.

### Issue 3: Missing Alt Attribute for Images

- \*\*Snippet with error:\*\* Background image in the header without an alt attribute.

```html

<header>

<div class="background-image"></div>

</header>

```

- \*\*WCAG Guideline violated:\*\* 2.4.3 Contrast (Minimum) (AA)

- \*\*Explanation:\*\* The original code snippet provided does not explicitly show the usage of images with alt attributes. However, it's crucial to ensure that all images, including background images, have descriptive alt text for users who cannot see the images. This improves accessibility for visually impaired users.

### Issue 4: Fixed Positioning of Footer

- \*\*Snippet with error:\*\* Fixed positioning of the footer.

```html

<footer>

<p>© 2023 Hospital Management System. All rights reserved.</p>

</footer>

```

- \*\*WCAG Guideline violated:\*\* 2.4.11 Focus Visible (AA)

- \*\*Explanation:\*\* The footer is positioned fixed at the bottom of the viewport. While this is not inherently an accessibility issue, it can obscure the focus indicator if the footer contains interactive elements. Ensure that the focus indicator remains visible and accessible when interacting with elements within the footer.

### Issue 5: No Keyboard Navigability

- \*\*Snippet with error:\*\* Navigation menu without explicit keyboard navigability.

```html

<nav>

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

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

<a href="#about">About Us</a>

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

</nav>

```

- \*\*WCAG Guideline violated:\*\* 2.4.7 Focus Visible (AA)

- \*\*Explanation:\*\* While the navigation links are present, there's no explicit indication of how to navigate them using a keyboard. Users should be able to tab through all interactive elements, including navigation links, without encountering any issues.

### Issue 6: Form Labels Without `for` Attributes

- \*\*Snippet with error:\*\* Form labels without corresponding `for` attributes.

```html

<form>

<label for="name"></label>

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

...

</form>

```

- \*\*WCAG Guideline violated:\*\* 2.4.7 Focus Visible (AA)

- \*\*Explanation:\*\* The `for` attribute in the `<label>` element associates the label with the corresponding form control (`<input>`). This is essential for screen reader users to understand the purpose of each form control. The empty `for` attribute in the provided code snippet indicates a potential oversight.

These issues highlight areas for improvement to enhance the accessibility of the webpage according to WCAG 2.2 AA standards.

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.

Reviewing the provided code against the WCAG 2.2 AA checklist from the sources, here are additional accessibility issues identified:

### Issue 7: Focus Visibility Concerns

- \*\*Snippet with error:\*\* The footer is positioned fixed at the bottom of the viewport.

```html

<footer>

<p>© 2023 Hospital Management System. All rights reserved.</p>

</footer>

```

- \*\*WCAG Guideline violated:\*\* 2.4.11 Focus Visible (AA)

- \*\*Explanation:\*\* The fixed positioning of the footer could potentially hide the focus indicator when navigating through the page, especially if the footer contains interactive elements. This violates WCAG 2.4.11, which requires that elements receiving focus are not obscured by other content [2].

### Issue 8: Interactive Elements Size

- \*\*Snippet with error:\*\* Not applicable in the provided code, but relevant for future development.

- \*\*WCAG Guideline violated:\*\* 2.5.8 Target Size (AA)

- \*\*Explanation:\*\* To ensure that all interactive elements are accessible, they should meet the minimum size requirement of 24x24 CSS pixels. This includes links, buttons, and form inputs. This guideline helps prevent accidental activation of elements, especially for users with motor impairments [2].

### Issue 9: Consistency of Help Options

- \*\*Snippet with error:\*\* Not applicable in the provided code, but relevant for future development.

- \*\*WCAG Guideline violated:\*\* 3.2.6 Consistent Identification (AA)

- \*\*Explanation:\*\* Help options, such as support links or contact information, should be consistently located across different pages of the site. This ensures that users can easily find assistance regardless of where they are on the site [2].

### Issue 10: Authentication Methods

- \*\*Snippet with error:\*\* Not applicable in the provided code, but relevant for future development.

- \*\*WCAG Guideline violated:\*\* 3.3.7 Alternative Authentication (AA)

- \*\*Explanation:\*\* If the site uses cognitive tests for authentication (like remembering a username and password), it must offer alternative authentication methods that do not rely on memory or cognitive skills. This could include sending a verification link to an email address or phone number [2].

### Issue 11: Auto-Fill and Selection of Previously Entered Information

- \*\*Snippet with error:\*\* Not applicable in the provided code, but relevant for future development.

- \*\*WCAG Guideline violated:\*\* 3.3.8 Input Assistance (AA)

- \*\*Explanation:\*\* Forms should allow users to auto-fill or select previously entered information to reduce the amount of typing required. This exception applies to confirming passwords and abandoned forms. Ensuring this feature is implemented can significantly improve the user experience, especially for users with motor impairments [2].

These additional issues highlight further areas for improvement to enhance the overall accessibility of the webpage according to WCAG 2.2 AA standards.

Citations:

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

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

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

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

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

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

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

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

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

[10] https://www.w3.org/WAI/WCAG22/quickref/