

CSS COLORS AND ACCESSIBILITY

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For **CSS colors and accessibility**, it's crucial to ensure sufficient **color contrast** between text and background elements, as low contrast makes content unreadable for users with visual impairments or those in bright environments.

Achieving a minimum **contrast ratio** (often 4.5:1 for normal text) is essential for meeting **WCAG** (Web Content Accessibility Guidelines) standards.

Key Term & Elements



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Color Contrast Ratio The numerical difference in **luminosity** (brightness) between the text (foreground) and background. A higher ratio means better readability.

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Key Term & Elements



WCAG (Web Content Accessibility Guidelines): The international **standards** that define required minimum contrast ratios (e.g., 4.5:1 for normal text) to ensure content is accessible.

Key Term & Elements



Color Blindness (CVD): A reduced ability to distinguish colors. Designers should avoid relying on color *alone* to convey information, as low **contrast** makes content inaccessible for users with CVD.

Visual Example / Code Snippet



Visual Example / Code Snippet

GOOD CONTRAST (Accessible)	POOR CONTRAST (Inaccessible)
<p>This text is easy to read.</p> <p>Contrast Ratio: 7.7:1 (Pass)</p>	<p>This text is hard to read.</p> <p>Contrast Ratio: 1.8:1 (Fail)</p>
<p>Another accessible combination.</p> <p>Contrast Ratio: 14.5:1 (Pass)</p>	<p>Problematic for CVD.</p> <p>Contrast Ratio: 2.5:1 (Fail)</p>

Visual Example / Code Snippet

```
Style.css - The Ultimate PVZ 1  index.html - The Ultimate PVZ 1  index.html - testing 0  Style.css - testing 0
/* Good Contrast (Accessible) - Passes WCAG AA 4.5:1 for normal text */
.good-contrast-dark {
  color: #FFFFFF; /* White text */
  background-color: #003366; /* Dark blue background */
  /* Contrast Ratio: 7.7:1 */
}

.good-contrast-light {
  color: #333333; /* Dark gray text */
  background-color: #F8F8F8; /* Light gray background */
  /* Contrast Ratio: 12.3:1 */
}

/* Poor Contrast (Inaccessible) - Fails WCAG AA 4.5:1 */
.poor-contrast-light-on-light {
  color: #AAAAAA; /* Light gray text */
  background-color: #F0F0F0; /* Very light gray background */
  /* Contrast Ratio: 1.5:1 */
}

.poor-contrast-red-on-red {
  color: #FFFFFF; /* White text */
  background-color: #CC0000; /* Bright red background */
  /* Contrast Ratio: 2.5:1 (problematic for color vision deficiency too) */
}
```

Common Mistakes / Tips



Common Mistakes / Tips



Low Color Contrast

This is the failure to ensure enough **difference in lightness** between text (foreground) and its background.

- The Mistake:** Using colors that are too similar, such as light grey text on a white background, making the content unreadable for users with low vision.
- How to Avoid:** Always check the contrast ratio. Use a tool to confirm your color pairs meet the **WCAG AA standard** of at least **4.5:1** for normal text.+

Common Mistakes / Tips



Relying on Color Only

This mistake involves using color as **the sole way to convey crucial information** or meaning.

- **The Mistake:** Indicating a required form field with *only* a red border or marking a link by *only* changing its color, which makes the information inaccessible to users with color blindness.
- **How to Avoid:** Use a second visual cue. For errors, use **text labels** (e.g., "Error"), **icons**, or **bolding**. For links, ensure they are **underlined** or have another non-color style change.

Common Mistakes / Tips



Ignoring Non-Text & Focus Contrast

This is when **interactive element contrast** (like input borders and icons) and the **focus indicator** aren't visible enough.

- **The Mistake:** Using low-contrast borders on input fields or an outline that is too faint when a user tabs to a button, which hinders keyboard navigation.
- **How to Avoid:** Ensure all **UI components** and their `:focus states` meet a **3:1 contrast ratio** against the background so users can clearly see what element they are interacting with.

Key Takeaway



This topic is **crucial** because it ensures **readability and usability** for all users, fulfilling legal and ethical accessibility standards (**WCAG**).

Key Takeaway



This is a **foundational skill** that impacts:

- **Design Systems:** Essential for defining accessible, high-contrast **color palettes** used in component libraries.
- **UI/UX Design:** Core to designing effective interfaces where color is used correctly for **status** and **interaction** (e.g., links, errors) without relying on it solely.
- **Advanced CSS:** Necessary when implementing features like **dark mode**, which requires managing multiple, accessible color themes, often with **CSS variables**.

THE END

CSS

