

The background is a dark blue gradient with a subtle pattern of white dots. Overlaid on this are several concentric circles and arcs in a light blue/white color. Some of these arcs have degree markings, such as 150, 160, 170, 180, 190, 200, 210, 220, 230, 240, 250, and 260. There are also small white arrows pointing in various directions, suggesting a sense of rotation or movement.

CSS COLORS AND ACCESSIBILITY

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What is CSS Colors & Accessibility?

The background is a dark blue gradient with a starry texture. Overlaid on the left side are several concentric circles and arcs in a lighter blue color. Some of these arcs have degree markings, such as 150, 160, 170, 180, 190, 200, 210, 220, 230, 240, 250, and 260. There are also small white arrows pointing in various directions, suggesting a sense of rotation or movement.

What is CSS Colors & Accessibility?



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

The background is a gradient of deep blue and purple, speckled with white dots resembling stars. Overlaid on this are several faint, white circular and semi-circular lines. Some of these lines have tick marks and numerical labels (40, 150, 160, 170, 180, 190, 200, 210, 220, 230, 240, 250, 260) along their arcs, suggesting a circular scale or a celestial map. There are also small white arrows pointing in various directions, some following the curves of the lines.

Key Term & Elements



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

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

The background is a gradient of deep blue and purple, speckled with white dots resembling stars. Overlaid on this are several faint, white circular and semi-circular patterns. Some of these patterns include tick marks and numbers, suggesting a circular scale or a clock face. For example, one large arc on the left has numbers ranging from 140 to 260. Other smaller arcs and dashed lines are scattered across the image, some with arrows indicating a direction of movement or rotation.

Visual Example / Code Snippet



GOOD CONTRAST (Accessible)

This text is easy to read.

Contrast Ratio: 7.7:1 (Pass)

Another accessible combination.

Contrast Ratio: 14.5:1 (Pass)

POOR CONTRAST (Incessible)

This text is hard to read.

Contrast Ratio: 1.8:1 (Fail)

Problematic for CVD.

Contrast Ratio: 2.5:1 (Fail)

Visual Example / Code Snippet



```
style.css The Ultimate PVZ | index.html The Ultimate PVZ | index.html testing 0 | style.css testing 0
sting > # style.css > .poor-contrast-red-on-red
1  /* Good Contrast (Accessible) - Passes WCAG AA 4.5:1 for normal text */
2  .good-contrast-dark {
3      color: ■ #FFFFFF; /* White text */
4      background-color: ■ #003366; /* Dark blue background */
5      /* Contrast Ratio: 7.7:1 */
6  }
7
8  .good-contrast-light {
9      color: □ #333333; /* Dark gray text */
10     background-color: ■ #F8F8F8; /* Light gray background */
11     /* Contrast Ratio: 12.3:1 */
12 }
13
14 /* Poor Contrast (Inaccessible) - Fails WCAG AA 4.5:1 */
15 .poor-contrast-light-on-light {
16     color: ■ #AAAAAA; /* Light gray text */
17     background-color: ■ #F0F0F0; /* Very light gray background */
18     /* Contrast Ratio: 1.5:1 */
19 }
20
21 .poor-contrast-red-on-red {
22     color: ■ #FFFFFF; /* White text */
23     background-color: ■ #CC0000; /* Bright red background */
24     /* Contrast Ratio: 2.5:1 (problematic for color vision deficiency too) */
25 }
```

Common Mistakes / Tips

The background is a gradient of deep blue and purple, transitioning from a darker blue at the bottom to a lighter purple at the top. It is filled with numerous small, white, star-like specks. Overlaid on this background are several faint, white, circular and semi-circular lines. Some of these lines have tick marks and numbers, resembling a protractor or a circular scale. For example, one large arc on the left has numbers from 140 to 260 in increments of 10. Another smaller arc in the upper right has a single tick mark. There are also dashed circular lines and solid circular lines, some with arrows indicating a direction of movement or rotation.

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

