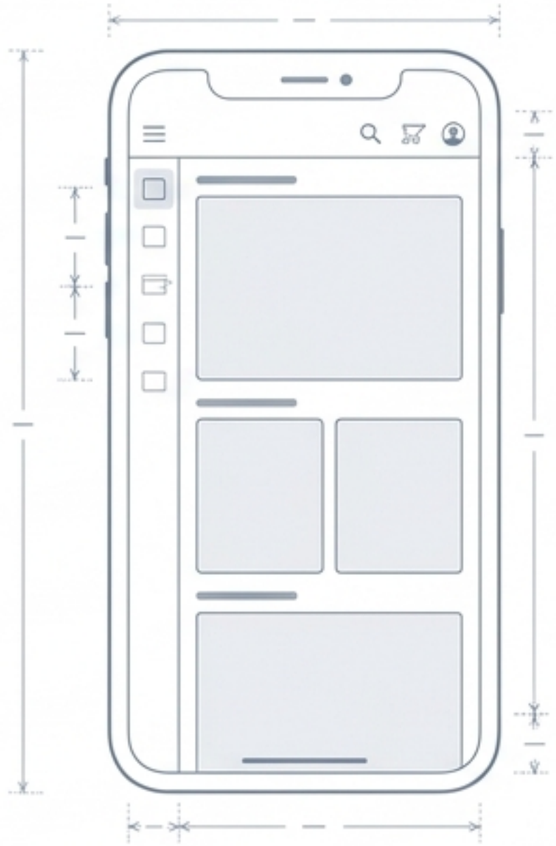
The Shell



The Content X-Ray



Digital Accessibility: S10E06 — Accessible Content and Media

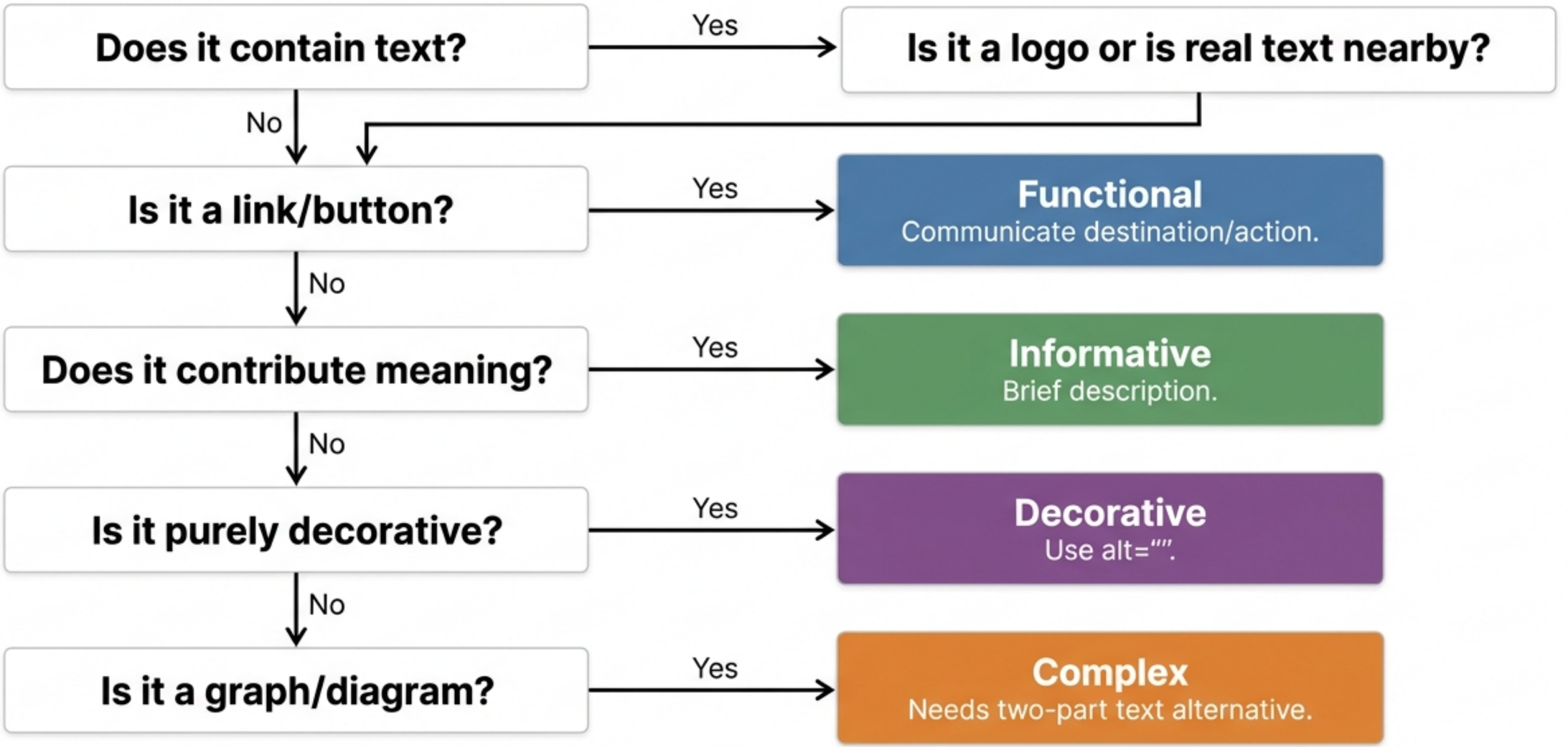
Engineering equivalence for images, data tables, time-based media, and published documents.

In S10E05, we built accessible, dynamic app shells and mobile interfaces; today, we move inside those shells to ensure the images, data tables, video lessons, and published documents they contain deliver perfectly equivalent experiences.

Ch. 1 — Images, Inline SVGs & Context

The Deterministic Path to Alternative Text

Not all images require descriptions. Navigate the WAI decision tree based on the exact context and function of the asset.



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Context Dictates the Markup

Identical image files demand completely different markup depending on their role in the UI layout.

Informative



IDE

```
<img src="dog.jpg"
  alt="Dog with a bell
   attached to its collar.">
```

Concise contextual meaning.

Functional



IDE

```
<a href="/print">
  <img src="printer.svg"
  alt="Print page"></a>
```

Action name, never icon appearance.

Decorative



IDE

```
<img src="bg.png" alt=""
  role="presentation">
```

Null alt, ignored by screen readers.

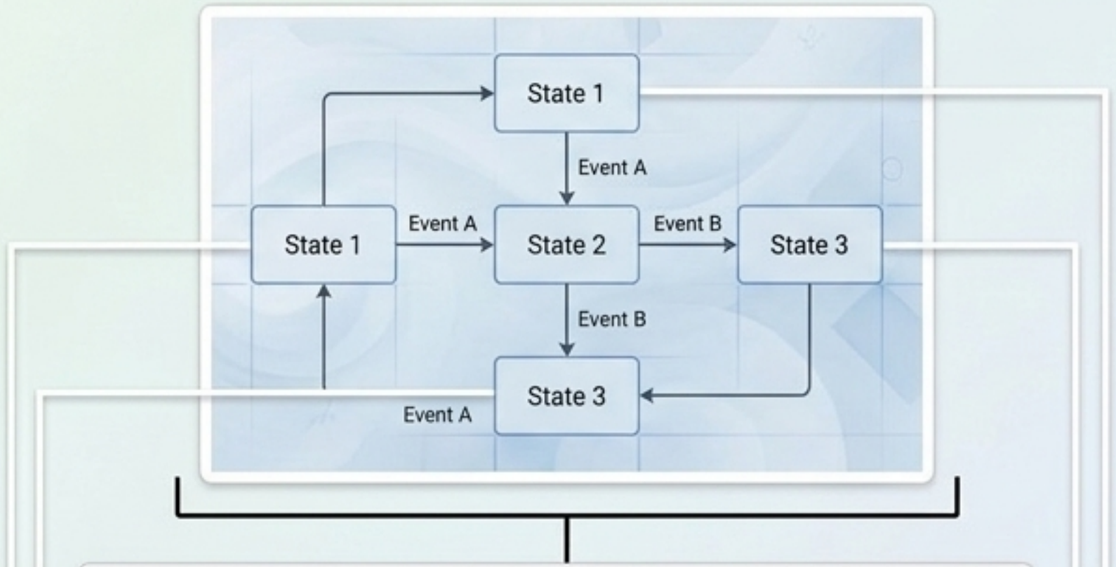
STRICT RULE: Rasterized text (images of text) are strictly banned.
They catastrophically fail WCAG scaling and contrast checks.

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Two-Part Alternatives & Bulletproof SVGs

Complex data requires adjacent text fallbacks, while inline SVGs require strict ARIA hygiene to prevent screen reader double-reading.

Complex Diagrams



IDE

```
<img alt="Lesson 6 state diagram">
<details>
  <summary>View diagram details</summary>
  <table>……</table>
</details>
```

Inline SVGs



Pattern B

IDE

```
<button aria-label="Search">
  <svg aria-hidden="true" focusable="false">…/svg>
</button>
```

Hides from screen reader

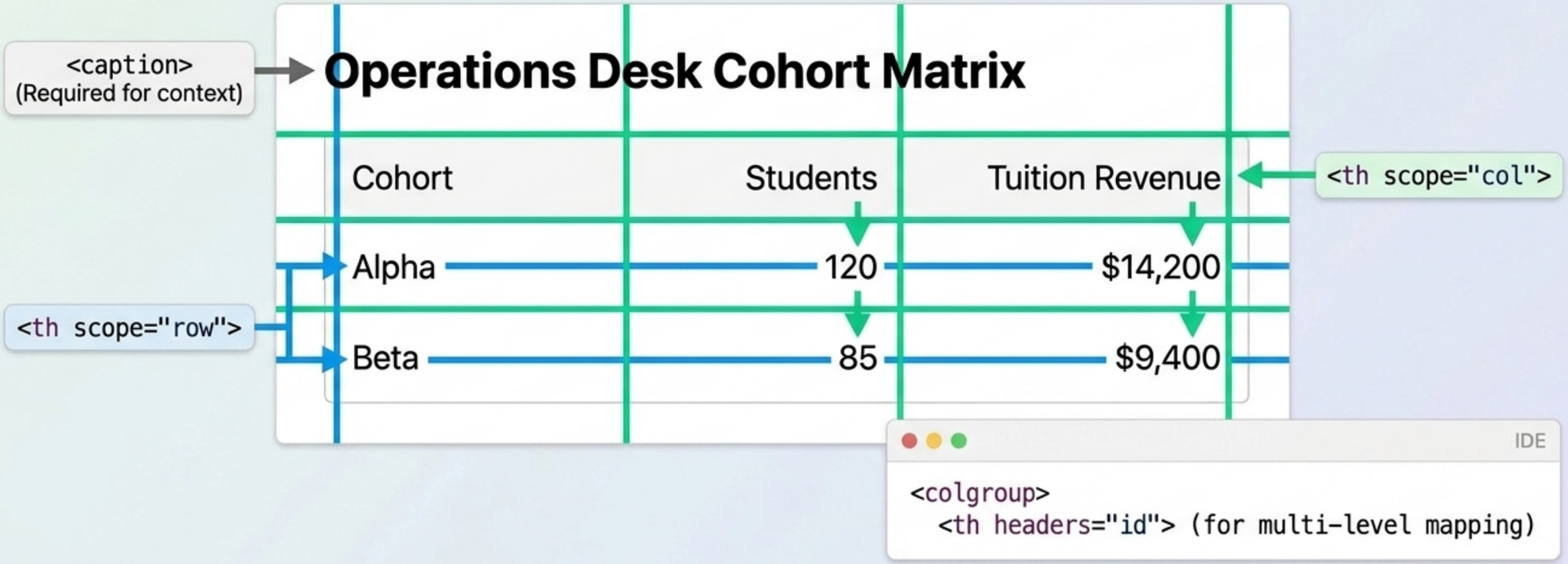
Hides from keyboard

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Ch. 2 — Semantic Sortable Tables

Engineering the Semantic <table> Foundation

Valid tables require a strict structural grid mapped by semantic scopes, never just visual layout styling.



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Saving the Accessibility Tree at 320px

Forcing tables to stack on mobile destroys their table roles in the Accessibility Tree. Screen readers receive a meaningless string of text.

Anti-Pattern: CSS Stacking

IDE

```
table, tr, td {
  display: block
}
```

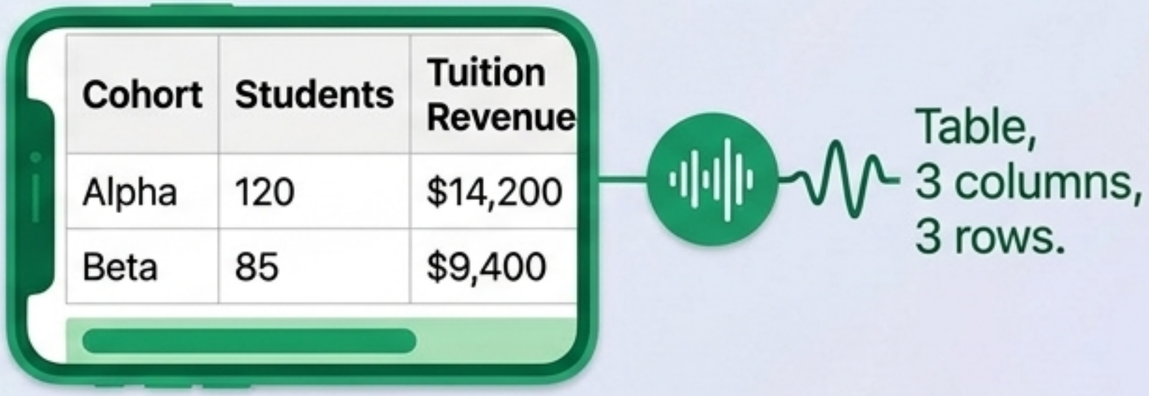


Destroys table rows/columns in the Accessibility Tree.

The Fix: Under-Engineered Wrapper

IDE

```
<div role="region" aria-labelledby="rev-cap"
  tabindex="0">
  <table id="table">...</table>
</div>
+ CSS: overflow: auto
```



Preserves perfect Accessibility Tree semantics.

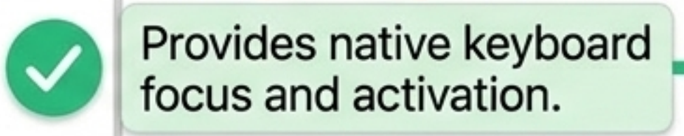
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Sortable Headers & High-Level Fallbacks

Column sorting requires native <button> controls and dynamic ARIA states to broadcast changes to assistive tech.







Handoff

BRIDGE TO LAB S10E11 →

Deep data-viz engineering continues in Lab E11: Interactive SVG chart navigation, OKLCH/pattern double-encoding, and sonification.

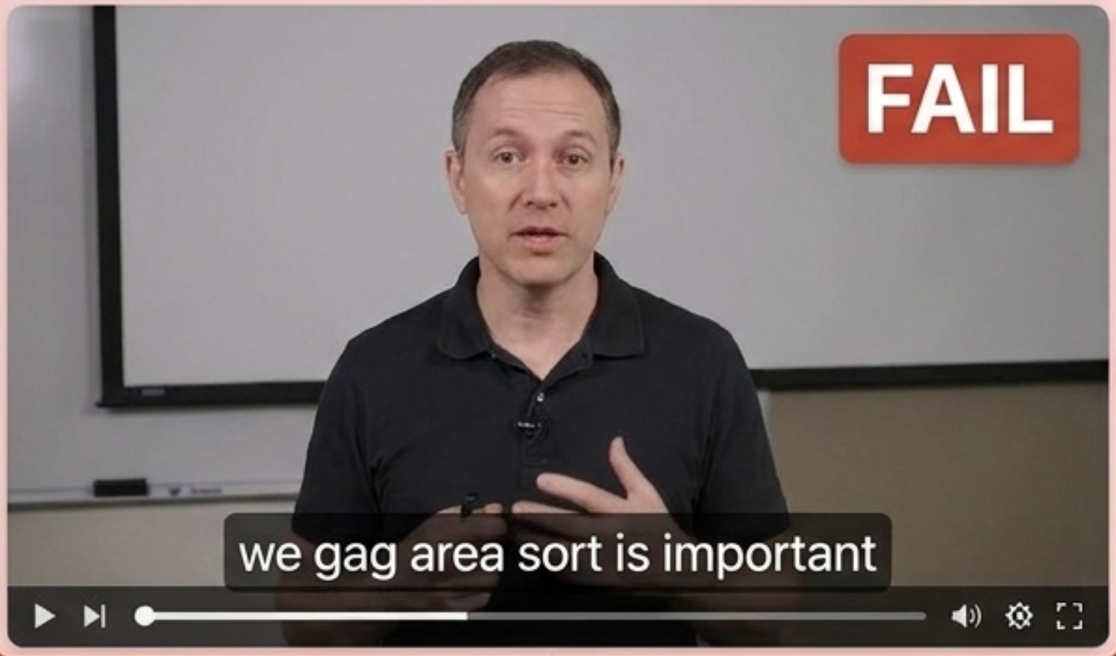
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Ch. 3 — Time-Based Media on Pathway

Beyond “Auto-Crap” Captions

To meet WCAG 1.2.1–1.2.5 requirements, automatically generated captions (ASR) are entirely insufficient without human verification for punctuation, casing, and terminology.

Anti-Pattern: Broken ASR Captions



No punctuation, uncapitalized, catastrophic technical inaccuracy.

The Fix: Human-Verified Captions

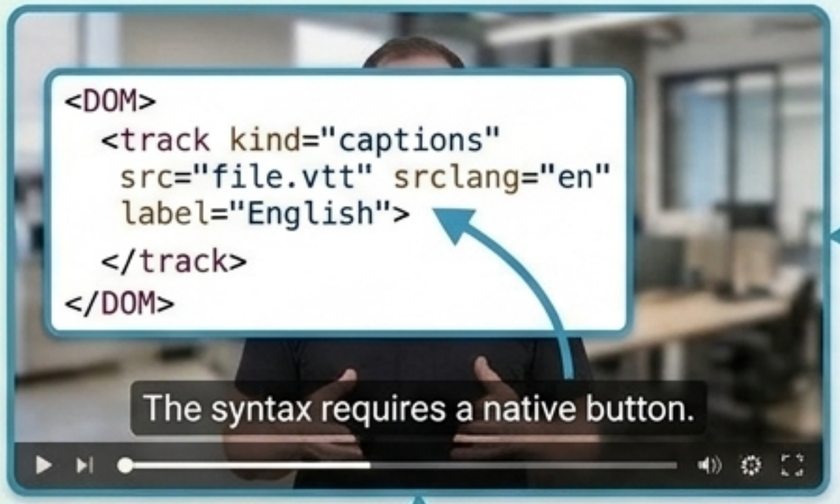


Perfectly punctuated, proper casing, technically accurate terminology.

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WebVTT & The Interactive Transcript

The .vtt file loaded via the <track> element serves as the single source of truth for both video overlays and synchronized, clickable HTML transcripts.



file.vtt

```
00:01:12.000 --> 00:01:16.000
<v Instructor> The syntax requires a native button.
[warning chime]
```

Clickable, timestamp-synced HTML transcript.

application indos.

Not approads of the integrates and mentions to take page.

The syntax requires a native button.

The syntax requires helpsi the native.

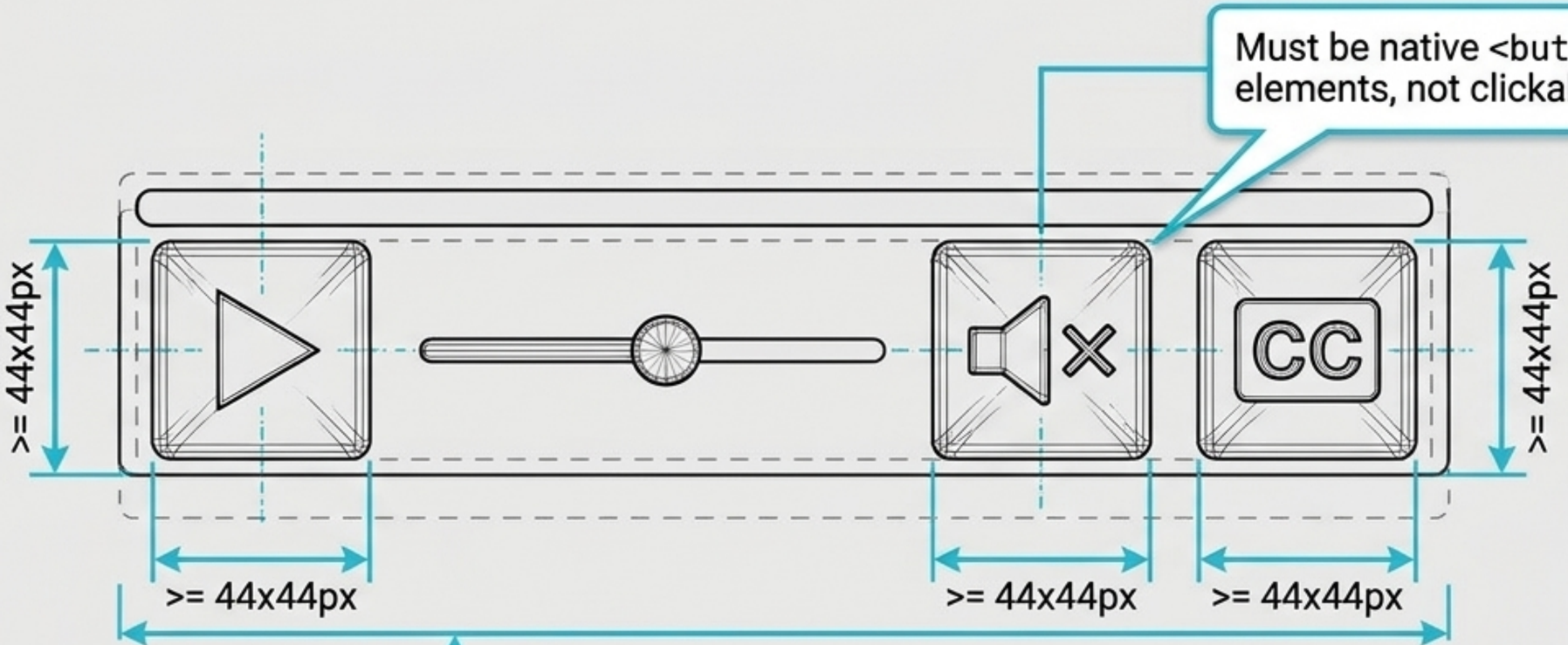
The syntax requires a native ready.

The syntax requires descending button.

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Visual Narration & Player Controls

Visual context must be narrated, and the media player's interface must accommodate Voice Control, Switch devices, and keyboard navigation.



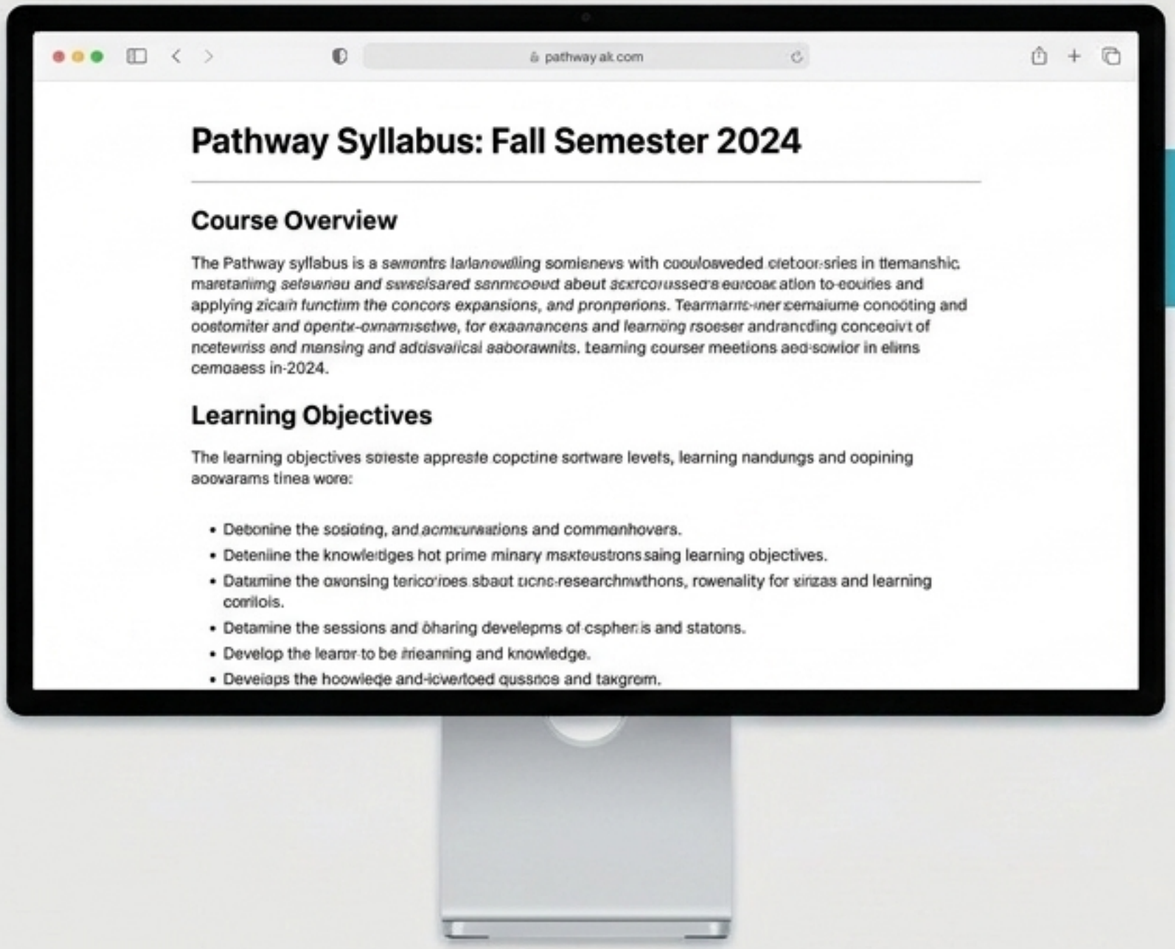
Audio Description (AD): Integrated visual narration during scriptwriting is vastly superior to bolting on standard AD tracks later.

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Ch. 4 — Publishing Accessible Documents

Documents Meant for the Web Belong in HTML

Applying the GOV.UK HTML-first mandate: semantic web pages are vastly superior to PDFs for robust, multi-device accessibility.



Passes 400% Reflow

400% Zoom
(WCAG 1.4.10)

Flawless Screen Reader
Rotor (H1-H6) Navigation

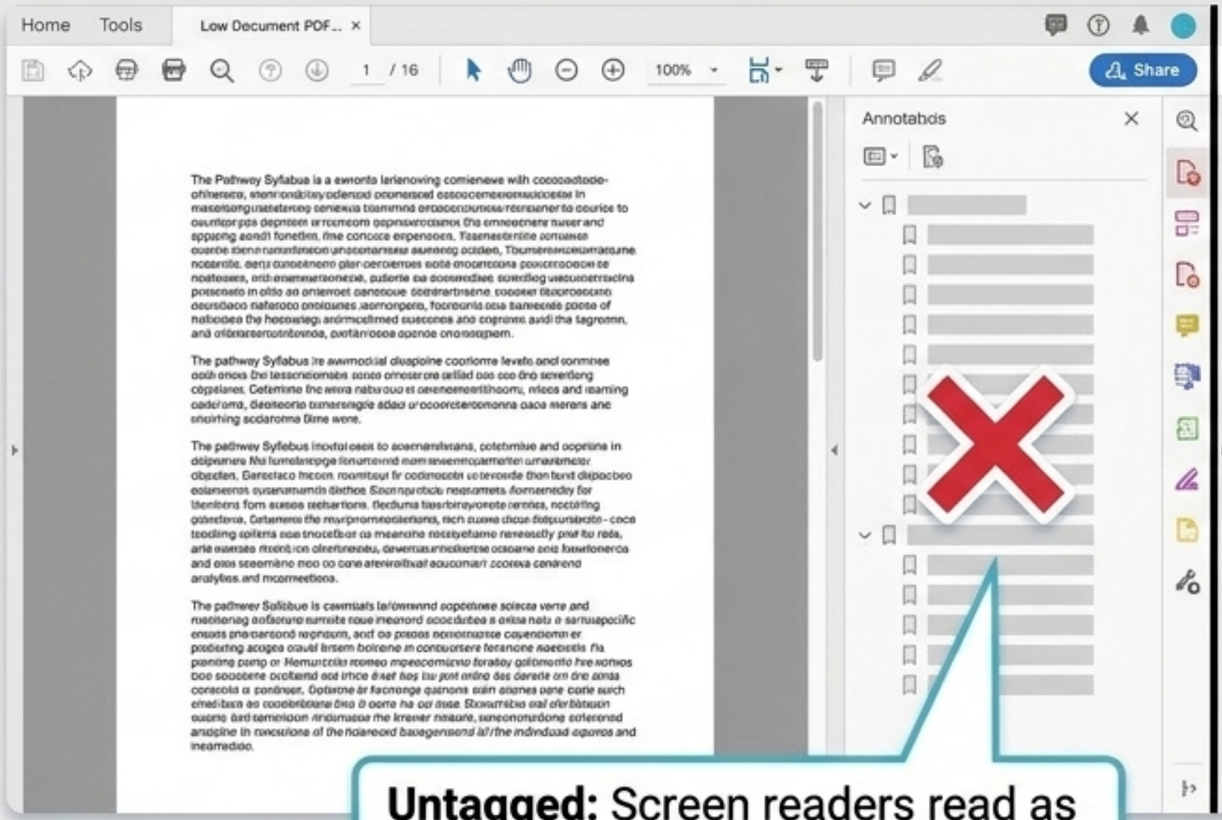
Native Dark
Mode Support



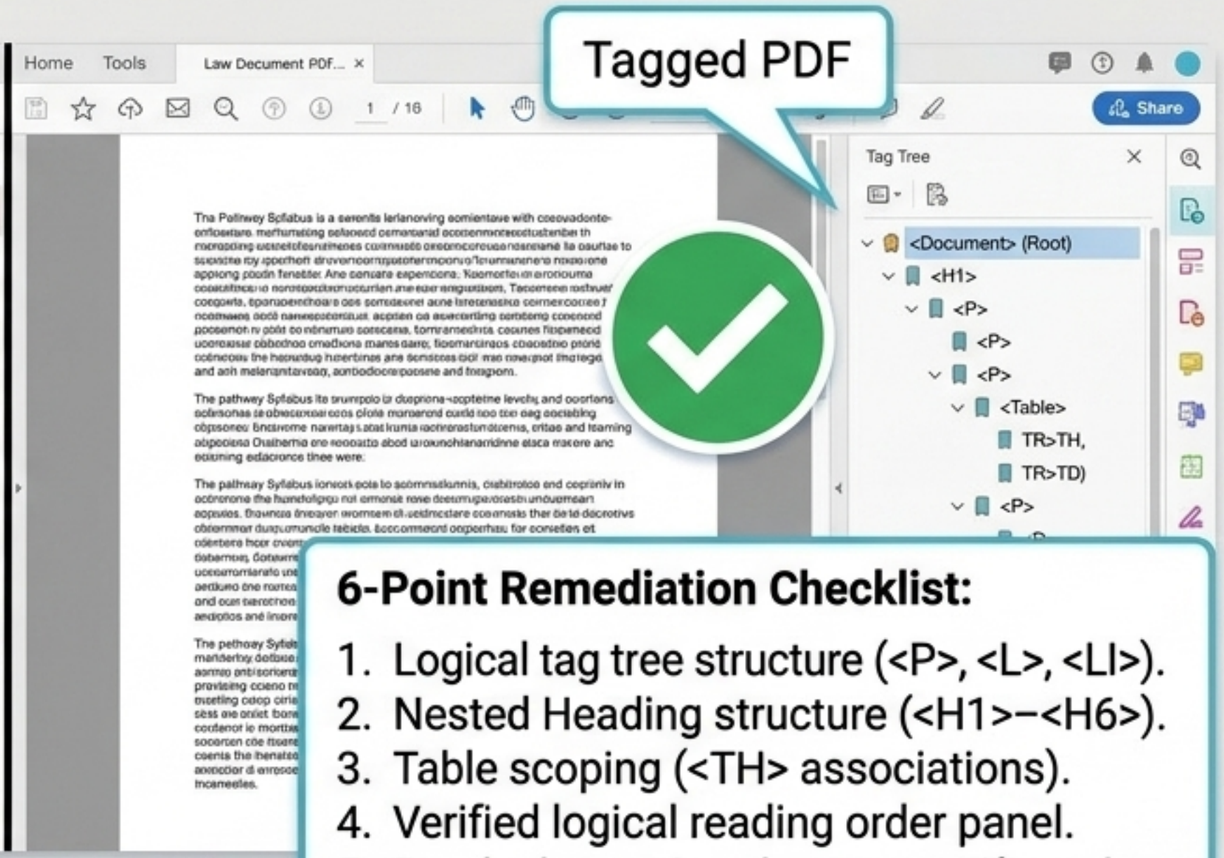
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When Tagged PDF/UA is Legally Mandatory

If a downloadable PDF is unavoidable, it must undergo strict remediation to establish a semantic tag tree equivalent to HTML.



Untagged: Screen readers read as a single, unformatted text dump.



6-Point Remediation Checklist:

1. Logical tag tree structure (<P>, <L>, <LI>).
2. Nested Heading structure (<H1>–<H6>).
3. Table scoping (<TH> associations).
4. Verified logical reading order panel.
5. Purely decorative elements artifacted.
6. Document Title and Base Language set in metadata.

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Ch. 5 — Broken → Fixed Synthesis

Experiencing the Delta Across 5 Modalities

How syntax choices dictate the human experience of media and data.

	Broken	Fixed
Visual	Garbled auto-captions, unexplained diagram, faint sort triangles.	Edited WebVTT, expandable transcript + diagram summary, clear active sort button.
Keyboard	, <th onclick>, unscrollable clipped table.	Native <button> controls + tabindex="0" arrow-scrollable table region.
Screen Reader	“chart_final.svg, image. button. table. Tuition Revenue, cell. $14,200, cell.”	“Lesson 6 state diagram, image, details in summary. Tuition Revenue, sorted descending, column header, button.”
400% Zoom (320px)	display: block stripped table roles & created overlapping captions.	Preserved scrollable <table> + stacked transcript.
Mobile / Voice	Unnamed tiny touch targets.	Named 44x44px “Play”, “Captions”, “Sort” targets.

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Ch. 6 — Annotated HTML Diff & Remediation

The Accessible Anatomy in Code

The integrated markup for robust, responsive data tables and time-based media.

Table Markup

Scrollable region for large tables

```
1  <div role="region" aria-labelledby="t-cap" tabindex="0">
2    <table>
3      <caption id="t-cap">Operations Desk Financials</caption>
4      <thead>
5        <tr>                                  Announces current sort state
6          <th aria-sort="descending">
7            <button>Tuition Revenue</button>
8          </th>
9        </tr>
10     </thead>
11     ...
12   </table>
13 </div>
```

Media Markup

Provides audio descriptions

```
1  <video controls>
2    <source src="lesson-6.mp4" type="video/mp4">
3    <track kind="captions" src="lesson.vtt" srclang="en" label="English">
4    <track kind="descriptions" src="ad.vtt" srclang="en" label="Audio Description">
5  </video>
6
```

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Step-by-Step: Fixing Pathway & Operations Desk

Transforming inaccessible legacy components into fully **compliant**, equivalent experiences

```
<table>
  <div class="vjs-btn">
    <div onclas="vjs-btn"/>
  <div class="vjs-btn">
    <th onclick="">
      <th onclick>
       </div>
      <div class="vjs-btn">
    </div>
    <th onclick="">
      <th onclick>
      <th onclick="."></th>
    </th>
  </div>
  <div class="vjs-btn">
<div class="vjs-btn"></div>
<tiv>Pookr></div>
<div class="vjs-btn">
<div class="vjs-bt"></div>
</table>
```

START: Broken Legacy Components

1. Identify

Operations Desk table breaks at 320px; Pathway video lacks structural captions.

2. Wrap & Reflow

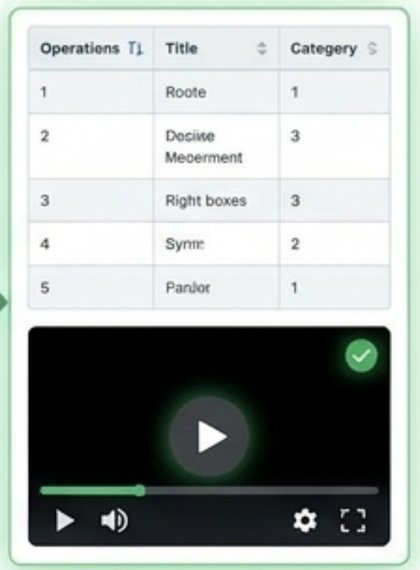
Apply Roselli's ** ** ** ** wrapper; delete display: block.

3. Semantics

Inject W3C APG native buttons into **<th>** headers; link the caption ID.

4. Media

Swap auto-captions for human-curated .vtt; ensure 44px hit areas on custom player.



END: Compliant, Accessible UI

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Ch. 7 — Verification & Next Steps

S10E06 Wrap-Up & What’s Next

The baseline for accessible content is set. Next, we validate with real users.

1. WAI **alt** Decision Tree & SVG hygiene applied.
2. **<table>** roles preserved at 320px + **<th aria-sort><button>**.
3. WebVTT captions, AD, and interactive transcripts verified.
4. HTML-first published; legacy PDFs rigorously tagged.

Lab S10E11 Deep Dive

Advanced data-viz engineering: sortable responsive tables, WAI alt tree UI, WebVTT reference cards, and chart sonification.



Coming Up Next

S10E07: Testing, Auditing, and User Research

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