



ANGULAR
ARCHITECTS

WAI ARIA

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WAI ARIA

- Web Accessibility Initiative
- Accessible Rich Internet Applications
- WAI ARIA
 - Roles
 - Attributes

WAI ARIA

- Adds **HTML-attributes** to elements
 - improving accessibility for dynamic web content
 - especially for people with disabilities
- The attributes help assistive technologies
 - like screen readers, Braille, ...
 - understand and navigate web content more effectively
- Defining roles, states, properties
 - relationships of elements
 - allowing Devs to create accessible & inclusive web apps

NG ARIA [attr]

- ARIA attributes enable modifying
 - an element's states and properties as defined in the A11y tree
 - <https://developer.mozilla.org/en-US/docs/Web/Accessibility/ARIA/Attributes>
- When binding to ARIA attributes in Angular, you must use the "attr." prefix

```
<!-- Use attr. when binding to an ARIA attribute -->
<button [attr.aria-label]="myActionButton">...</button>
```

```
<!-- Static ARIA attributes require no extra -->
<button aria-label="Close">...</button>
```

ARIA vs. Semantic HTML

- Semantic HTML
 - preferred
 - native elements like `<button>`, `<label>`, `<nav>` and `<header>`
 - provide built-in accessibility features
- ARIA
 - is our last resort
 - when semantic HTML not possible / not applicable

WAI-ARIA Essentials

- Roles
 - enhance a11y by providing semantic information, when native HTML elements cannot be used
 - e.g. `<div role="button" tabindex="0" (click)="onClick()">Click Me</div>`
- Attributes
 - enhance by providing additional semantic information
 - states (dynamic / temporal) vs. properties (permanent)



ARIA Roles

- define what an element is or does
 - role="button" (prefer <button>)
 - role="navigation" (prefer <nav>)
 - role="complementary" (prefer <aside>)
 - role="main" (prefer <main>)
 - role="form" (prefer <form>)
 - role="banner"
 - role="search"
 - role="tablist" & role="tabpanel"
 - role="presentation"
 - removes default behaviour e.g. <button>

ARIA Roles – Example

```
<app-dialog role="dialog" aria-labelledby="dialogTitle" aria-modal="true">
  <h2 id="dialogTitle">{{ dialogTitle() }}</h2>
  <p>{{ dialogContent() }}</p>
  <button type="button" (click)="onClose()">Close</button>
</app-dialog>
```

ARIA Roles – Full List

– <https://developer.mozilla.org/en-US/docs/Web/Accessibility/ARIA/Roles>



ARIA Attributes I

- ARIA attributes enable modifying an element's states and properties as defined in the A11y tree
- Widget attributes
 - aria-disabled (state)
 - aria-required (property)
 - aria-expanded (state)
 - aria-hidden (state)
 - aria-invalid (state)
- Live region attributes (states)
 - aria-live ('assertive' → error, 'polite' → info)
 - aria-busy (loading spinner)

ARIA Attributes II

- Drag-and-Drop attributes
 - aria-grabbed (state)
- Relationship attributes (properties)
 - aria-label
 - aria-labelledby
 - aria-describedby
 - aria-controls

ARIA Attribute – Example

```
<button  
  type="button"  
  aria-label="Toggle navigation menu"  
  [attr.aria-expanded]="isMenuOpen() ? 'true' : 'false'"  
  (click)="onToggleNav()">  
  <i class="icon-menu"></i>  
</button>
```

ARIA Attributes – Full List

– <https://developer.mozilla.org/en-US/docs/Web/Accessibility/ARIA/Attributes>

The background of the slide features a photograph of a modern architectural structure, likely a glass and steel building, viewed from a low angle looking up. The sky above is a vibrant red, creating a dramatic contrast with the building's facade.

Questions?