

The **First** Rule of ARIA

Accessibility without doing Accessibility

The **First** Rule of ARIA

Accessibility without doing Accessibility

THE OBJECTIVE OF GOLF IS TO
PLAY THE **LEAST** AMOUNT OF GOLF



The **First** Rule of ARIA

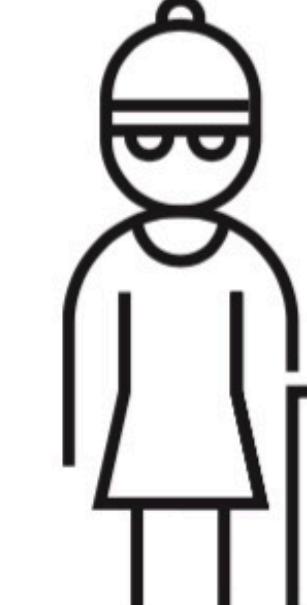
- Accessibility
- HTML and ARIA
- How a web browser works
- The Rules of ARIA
- UI patterns without using ARIA

Inclusive Design

"Designing inclusively **doesn't** mean you're making one thing for all people. You're designing a diversity of ways for everyone to participate in an experience with a **sense of belonging**."

This staircase isn't accessible unless everyone can reach the top, regardless of ability.



	Permanent	Temporary	Situational
Touch			
			
	One arm	Arm injury	New parent
See			
			
	Blind	Cataract	Distracted driver

	Permanent	Temporary	Situational
Hear			
			
	Deaf	Ear infection	Bartender
Speak			
			
	Non-verbal	Laryngitis	Heavy accent

Web Content Accessibility Guidelines 2.1 (WCAG)

Perceivable

Operable

Understandable

Robust

“Our goal is to make sure our website,
app and services **don't disable people**”

“The biggest misconception about accessibility is that by adding it you're doing somebody a favor. You're not, **you're doing your job.**”

james williamson @jameswillweb

IF SOMETHING'S HARD TO DO



THEN IT'S NOT WORTH DOING

Paul Duncan

That's me!

@dexterperrin



World Wide Web

The WorldWideWeb (W3) is a wide-area [hypermedia](#) information retrieval initiative aiming to give universal access to a large universe of documents.

Everything there is online about W3 is linked directly or indirectly to this document, including an [executive summary](#) of the project, [Mailing lists](#) , [Policy](#) , November's [W3 news](#) , [Frequently Asked Questions](#) .

[What's out there?](#)

Pointers to the world's online information, [subjects](#) , [W3 servers](#), etc.

[Help](#)

on the browser you are using

[Software Products](#)

A list of W3 project components and their current state. (e.g. [Line Mode](#) , [X11 Viola](#) , [NeXTStep](#) , [Servers](#) , [Tools](#) , [Mail robot](#) , [Library](#))

[Technical](#)

Details of protocols, formats, program internals etc

[Bibliography](#)

Paper documentation on W3 and references.

[People](#)

A list of some people involved in the project.

[History](#)

A summary of the history of the project.

[How can I help ?](#)

If you would like to support the web..

[Getting code](#)

Getting the code by [anonymous FTP](#) , etc.

Getting the code by [anonymous ELL](#) , etc.

[Getting code](#)

It's not world wide to support the Web..

A CITY BUILT ON
ROCK'N'ROLL
WILL HAVE
UNSTABLE
FOUNDATIONS!



ARIA

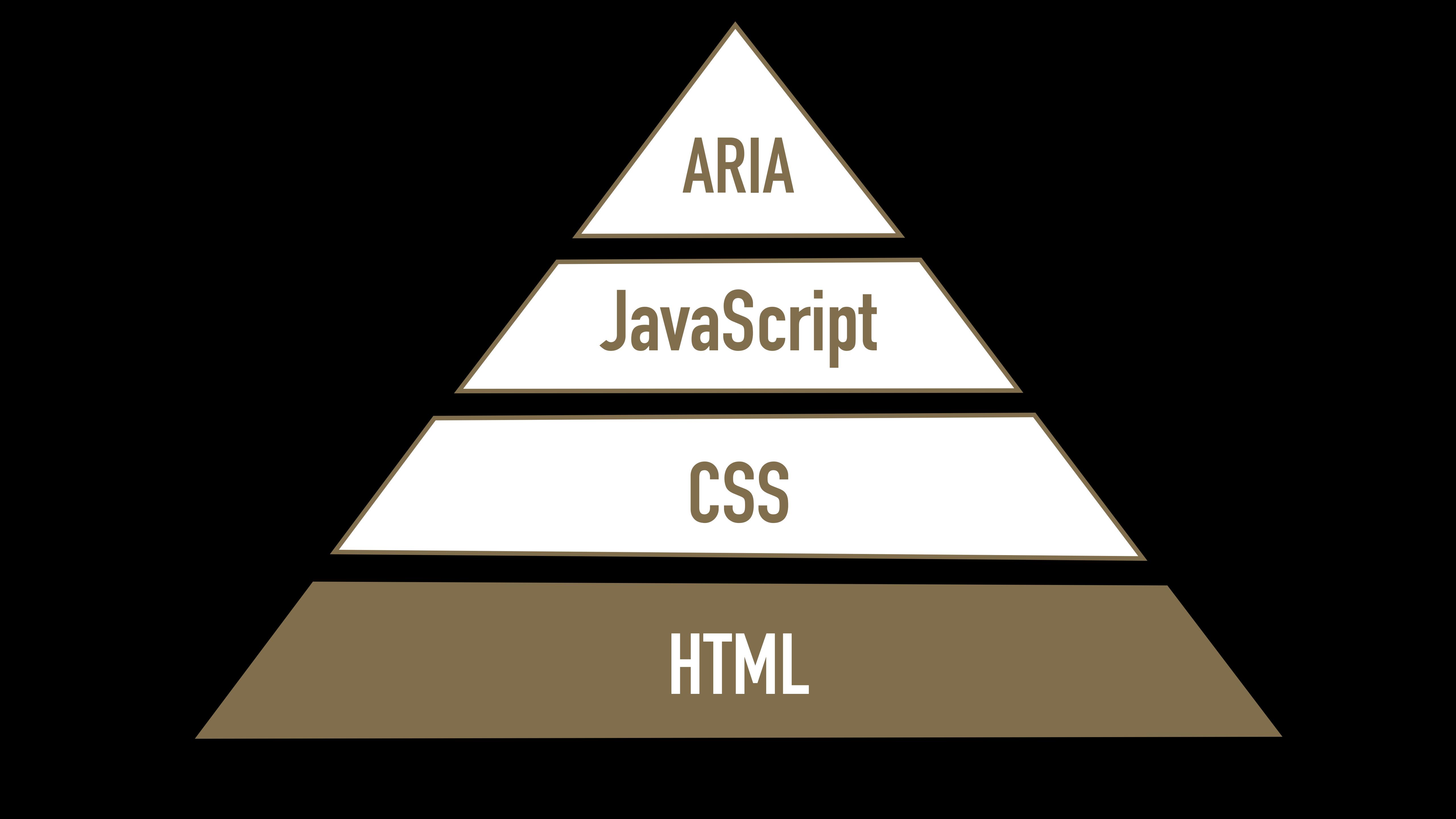
JavaScript

CSS

HTML

Devon Persing

<http://simplyaccessible.com/article/the-accessibility-stack/>



ARIA

JavaScript

CSS

HTML

WAI-ARIA

**Web Accessibility Initiative -
Accessible Rich Internet Applications**

<https://www.w3.org/WAI/intro/aria>

WAI-ARIA

defines a way to make Web content and Web applications more accessible.

It especially helps with **dynamic content** and **advanced user interface** controls developed with Ajax, HTML, JavaScript, and related technologies

Examples of ARIA

role="navigation"

role="tab"

aria-labelledby="id1 id2"

aria-hidden="true"

aria-expanded="false"

First rule of ARIA: **Don't use ARIA**

If you can use a **native** HTML element
or attribute with the semantics and
behaviour you require already built in.

This is a heading

```
<div> Heading </div>
```

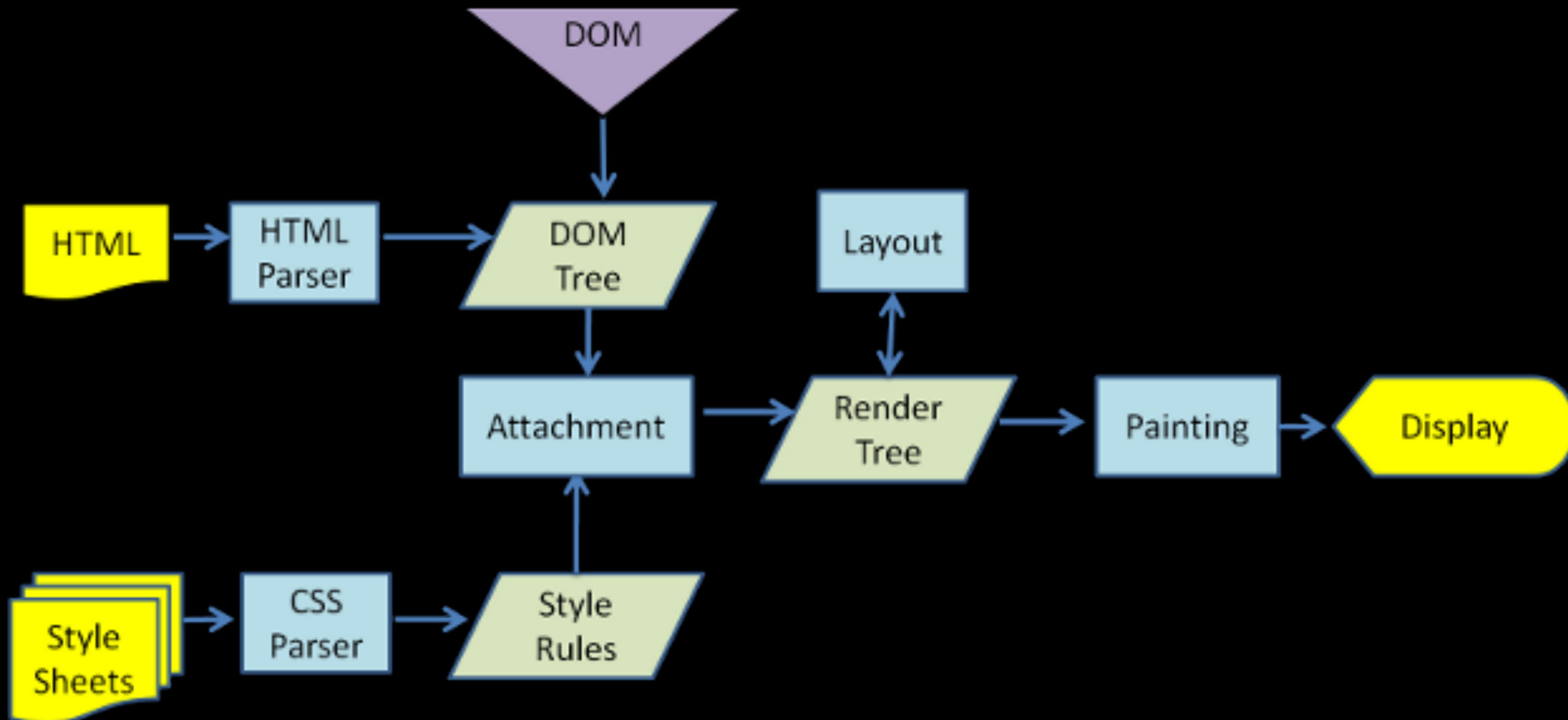
```
<div class="heading1"> Heading </div>
```

```
<div class="heading1" role="heading"> Heading </div>
```

```
<div class="heading1" role="heading" aria-level="1"> Heading </div>
```

```
<h1> Heading </h1>
```

How a browser works



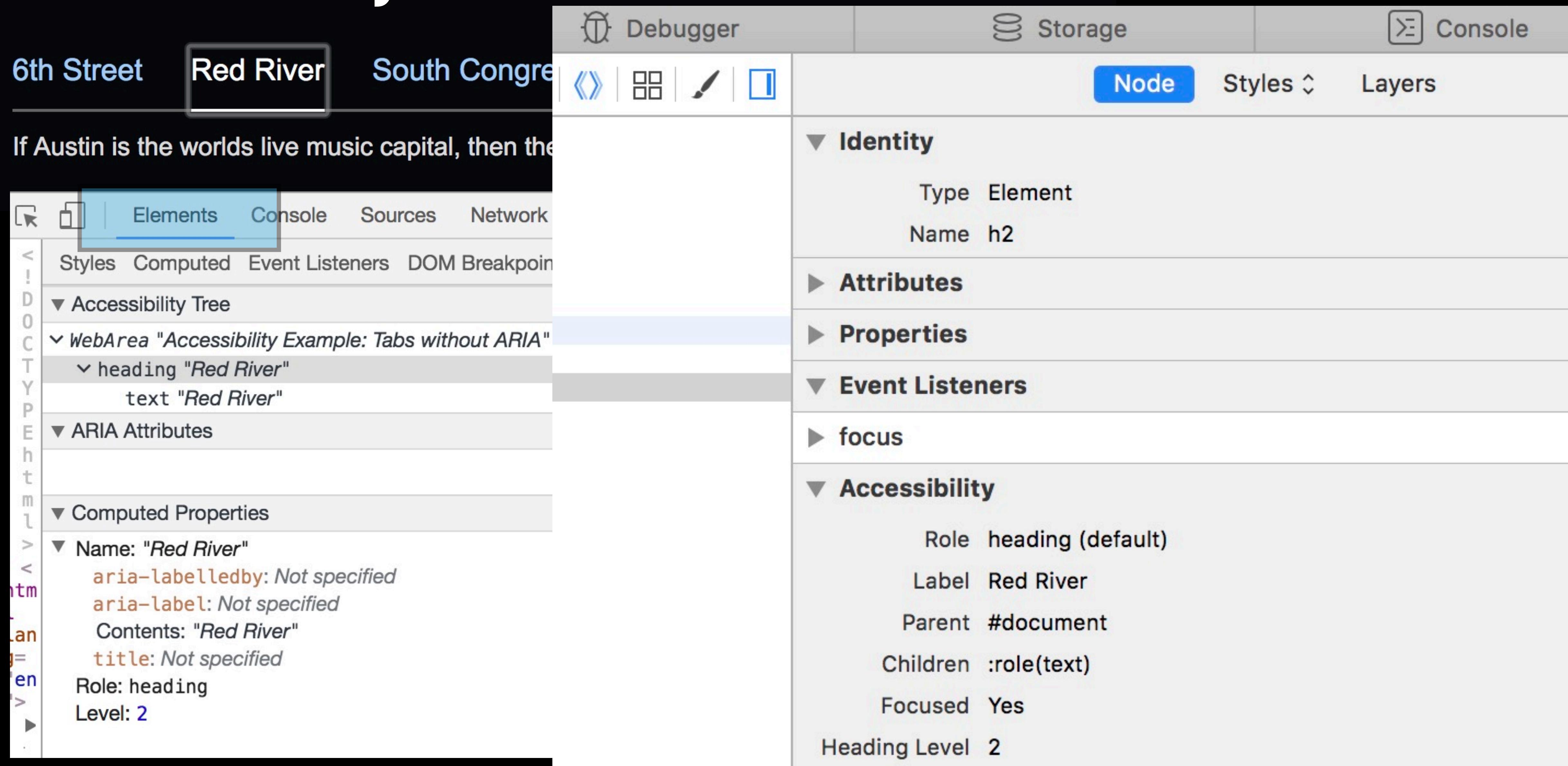
Tali Garsiel and Paul Irish

<https://www.html5rocks.com/en/tutorials/internals/howbrowserswork/>

Accessibility Tree

Accessible **objects** are created in the accessibility tree for every DOM element that should be **exposed** to an assistive technology.

Accessibility Tree



The screenshot shows the Firefox Developer Tools Accessibility Tree panel. The 'Red River' tab is selected, highlighted with a red border. The main content area displays the following information:

If Austin is the worlds live music capital, then the

Elements tab is selected in the top navigation bar. The sidebar on the left shows the following structure:

- WebArea "Accessibility Example: Tabs without ARIA"
- heading "Red River"
- text "Red River"

The right panel displays the following details for the selected element:

Identity

- Type: Element
- Name: h2

Attributes

Properties

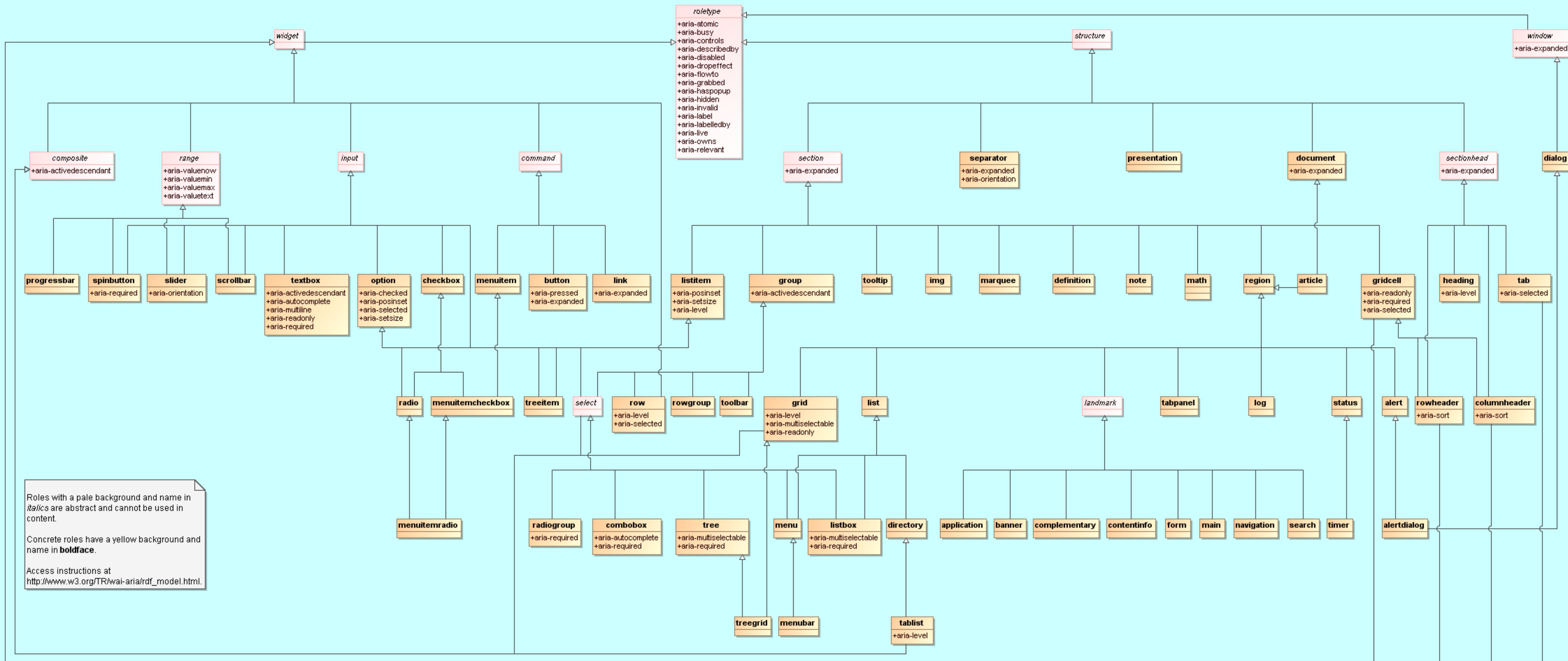
Event Listeners

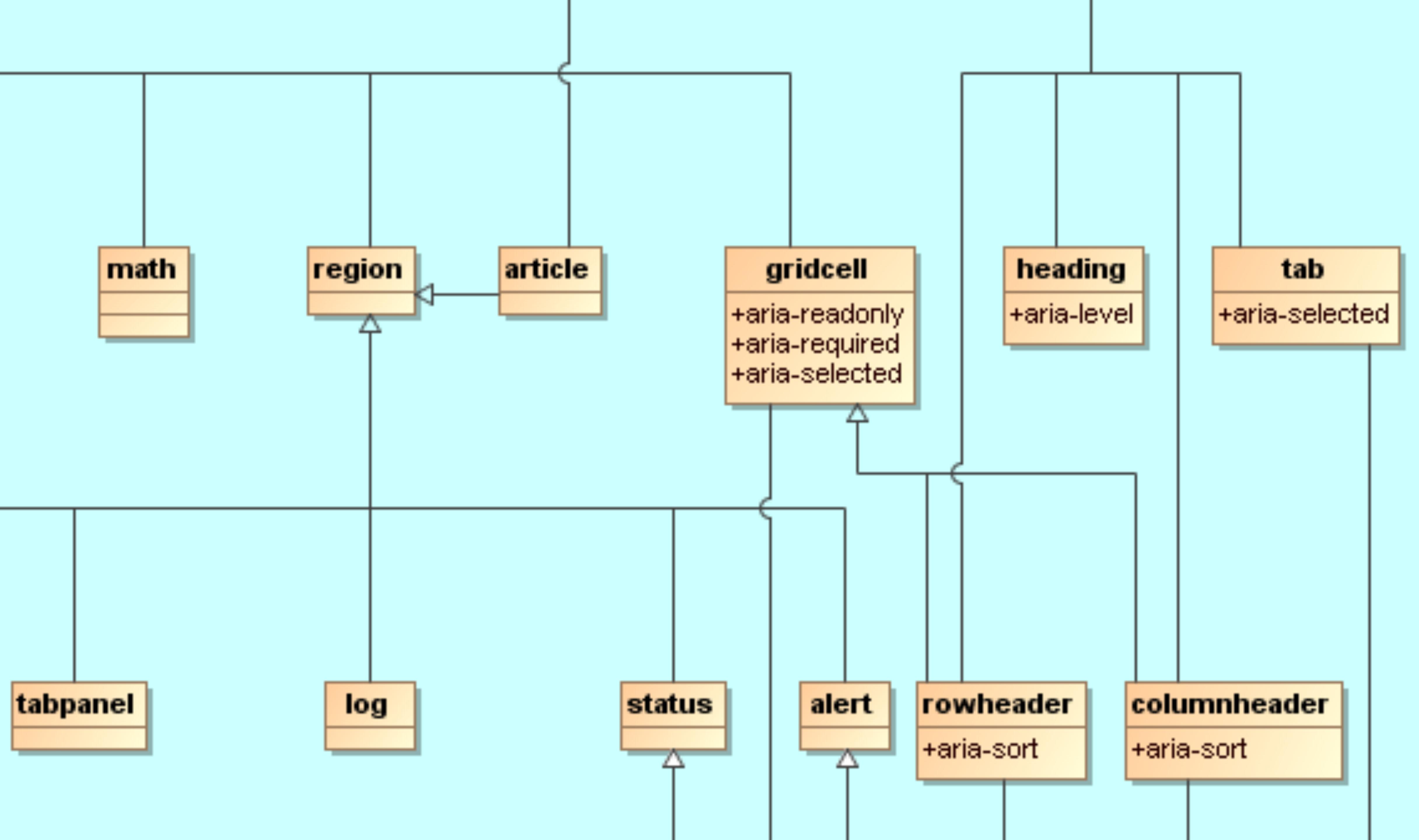
focus

Accessibility

- Role: heading (default)
- Label: Red River
- Parent: #document
- Children: :role(text)
- Focused: Yes
- Heading Level: 2

Categorization of Roles





Role Quiz

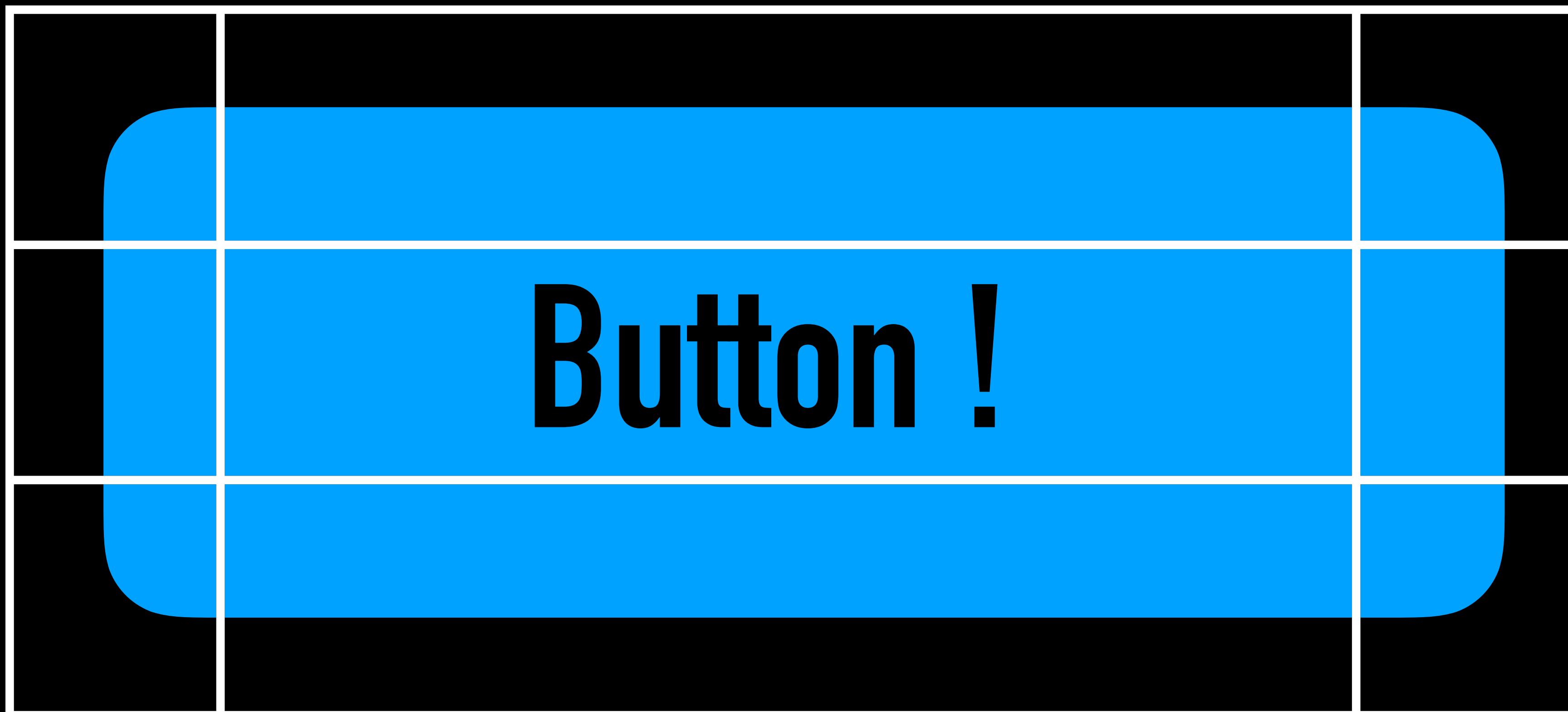
<h2 **role="heading"**> Hello me </h2>

<button **role="button"**> Push me </button>

<form **role="form"**> Fill me </button>

<table **role="table"**> Feed me </table>

Tables, we have a problem



Tables, we have a problem

Edd Sowden : Government Digital Service



Tables, we have a problem

```
// Unfortunately, there is no good way to determine the difference
// between a "layout" table and a "data" table.

// If there are at least 20 rows, we'll call it a data table.
if (numRows >= 20)
    return true;

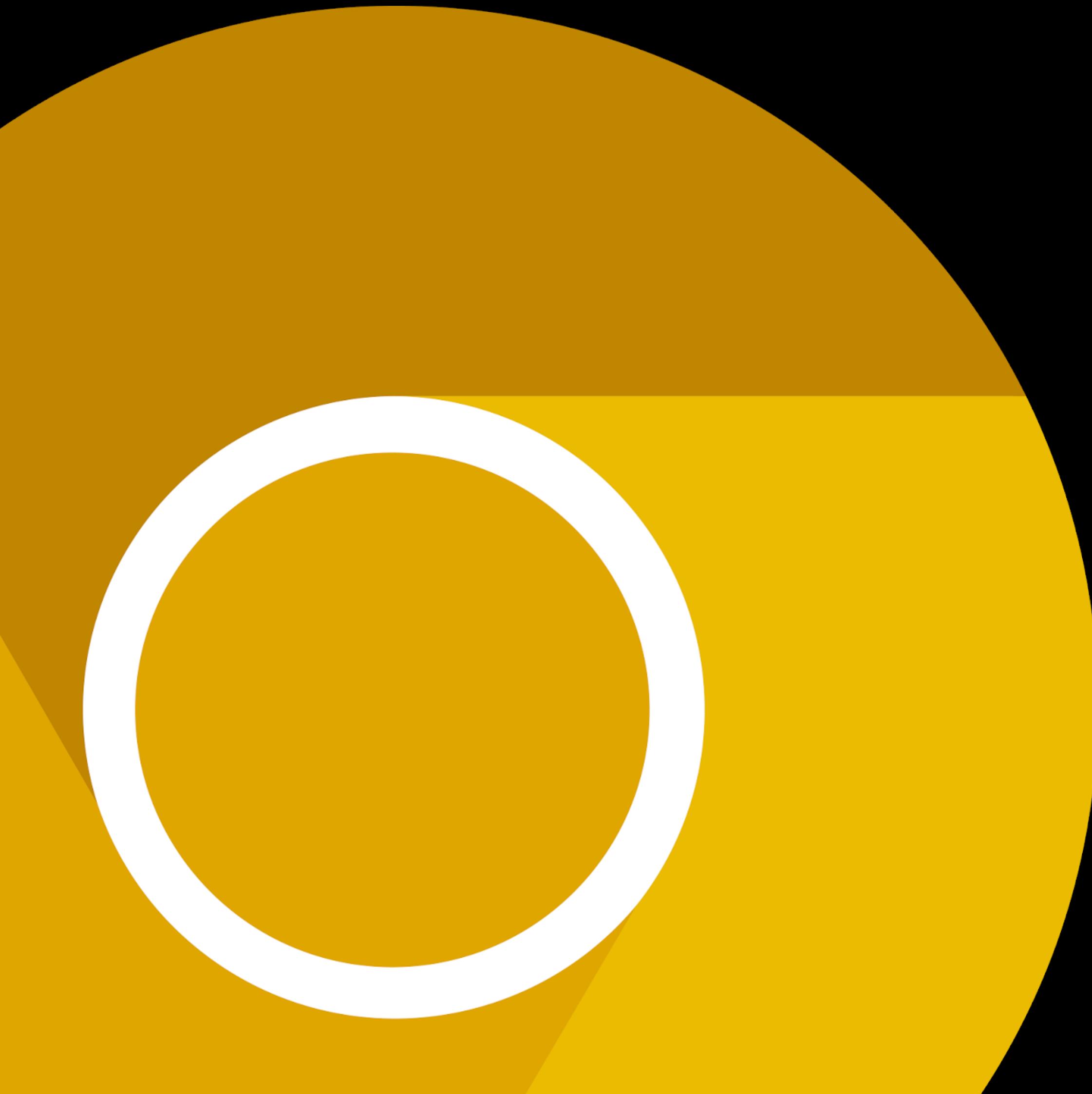
// Check if there is an alternating row background color
if (alternatingRowColorCount > 2) {
```

Tables, we have a problem



```
bool
HTMLTableAccessible::IsProbablyLayoutTable()
{
    // Implement a heuristic to determine if table is most likely used for layout
    // XXX do we want to look for rowspan or colspan, especially that span all but a couple
    // 3-4 columns, no borders, not a lot of rows, and 95% of the doc's width
    // Probably for layout
```

The Accessibility Tree



cell	cell	cell
cell	cell	cell

summary: Not specified
title: Not specified
Role: *LayoutTable*

Elements Console Sources Network Performance Memory Application Security Audits

Styles **Computed** **Event Listeners** **DOM Breakpoints** **Properties** **Accessibility**

▶ Accessibility Tree
▼ ARIA Attributes
No ARIA attributes
▼ Computed Properties
▼ Name: ""
aria-labelledby: Not specified
aria-label: Not specified
From caption: Not specified
summary: Not specified
title: Not specified
Role: LayoutTable

```

<!DOCTYPE html>
<html lang="en">
  <head>...</head>
  <body class="s-page-tabs">
    <h2>Tables</h2>
    <p>...</p>
    <p>...</p>
    <p>This is not table enough for Chrome</p>
    ... <table> == $0
      <tbody>
        <tr>
          <td>cell</td>
          <td>cell</td>
          <td>cell</td>
        </tr>
        <tr>
          <td>cell</td>
          <td>cell</td>
          <td>cell</td>
        </tr>
      </tbody>
    </table>
  </body>
</html>

```

cell	cell	cell
cell	cell	cell
cell	cell	cell

title: Not specified
Role: table

Elements Console Sources Network Performance Memory Application Security Audits

<!DOCTYPE html>
<html lang="en">
►<head>...</head>
▼<body class="s-page-tabs">
 <h2>Tables</h2>
 ►<p>...</p>
 ►<p>...</p>
 ...

This is a table as the rows have different color

 </p>
 ...
 ▼<table> == \$0
 ▼<tbody>
 ►<tr class="pd-row0">...</tr>
 ►<tr class="pd-row1">...</tr>
 ►<tr class="pd-row0">...</tr>
 </tbody>
 </table>

Styles Computed Event Listeners DOM Breakpoints Properties Accessibility

► Accessibility Tree

▼ ARIA Attributes

No ARIA attributes

▼ Computed Properties

▼ Name: ""

aria-labelledby: Not specified
aria-label: Not specified
From caption: Not specified
summary: Not specified
title: Not specified

Role: table

row 17	cell	cell	cell
row 18	cell	cell	cell
row 19	cell	cell	cell
row 20 :-)	cell	cell	cell

— 1 —

title: Not specified

Role: table

row 16	cell	cell	cell
row 17	cell	cell	cell
row 18	cell	cell	cell
row 19	cell	cell	cell

▼ Computed Properties

Accessibility node not exposed

Element not interesting for accessibility.

Elements Console Sources Network

► <table>...</table>
<p>This has enough
data to be recognised
as a table (20 rows)
</p>

... ▼ <table> = \$0

▼ <tbody>

► <tr>...</tr>
► <tr>...</tr>

... table tbody tr

Styles Computed Event

▼ Accessibility Tree

▼ WebArea "Accessibility: Tables"

Ignored

▼ ARIA Attributes

No ARIA attributes

▼ Computed Properties

Accessibility node not exposed

Element not interesting for accessibility.

row 17	cell	cell	cell
row 18	cell	cell	cell
row 19	cell	cell	cell
row 20 :-)	cell	cell	cell

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title: Not specified

Role: table

title: Not specified
Role: table

cell	cell
cell	cell

Elements Console Sources Network Performance Memory Application Security Audits

<!DOCTYPE html>
<html lang="en">
 ► <head>...</head>
 ▼ <body class="s-page-tabs">
 <h2>Tables</h2>
 ► <p>...</p>
 ► <p>...</p>
... ▼ <table role="table"> == \$0

▼ <tbody>
 ▼ <tr>
 <td>cell</td>
 <td>cell</td>
 </tr>
 ▼ <tr>
 <td>cell</td>
 <td>cell</td>
 </tr>
 </tbody>
</table>

Styles Computed Event Listeners DOM Breakpoints Properties Accessibility

► Accessibility Tree

▼ ARIA Attributes

 role: table

▼ Computed Properties

▼ Name: ""

 aria-labelledby: Not specified
 aria-label: Not specified
 From caption: Not specified
 summary: Not specified
 title: Not specified

 Role: table

Second rule of ARIA:

Do **not change native **semantics****

```
<h2 style="my-button" role="button"> Push me </h2>
```

```
<h2> <button> Push me </button> </h2>
```

No ARIA is better than **bad** ARIA

https://www.w3.org/TR/wai-aria-practices/#no_aria_better_bad_aria

```
<h2 role="link"> Click me </h2>
```

<https://www.w3.org/TR/aria-in-html/#second>

SPORT

[Home](#) | [Football](#) | [Formula 1](#) | [Cricket](#) | [Rugby U](#) | [Tennis](#) | [Golf](#) | [Athletics](#) | [Cycling](#)[Winter Olympics](#)[All Sport](#)[Winter Olympics](#) > [Results](#) | [Schedule](#) | [Medals](#) | [Pyeongchang 2018 Sports](#)

Norway top medal table after Bjørgen wins final event of Games

Norway top the medal table as Marit Bjørgen wins gold in the women's cross-country skiing 30km mass start, the final event of the Winter Olympics.

8d | [Winter Olympics](#)



How a nation of 5.2 million topped the world - and more Winter Olympics stats

7d | [Winter Olympics](#) | [More](#)



Impersonators, animals & moustaches - nine unlikely stars of Pyeongchang 2018

7d | [Winter Olympics](#)



'I'll think about this moment until the end of my life' - how Ledecka conquered snowboard & skiing

9d | [Winter Olympics](#)



OAR beat Germany in thriller to win ice hockey gold in



Russia Olympic ban lifted if no further doping violations

Medal Table

#	Country	G	S	B	Total
1	NOR	14	14	11	39
2	GER	14	10	7	31
3	CAN	11	8	10	29

[View full medal table](#)

Pyeongchang 2018

9-25 February

[Medal table](#) | [Results](#)

From Around the Web

Promoted content by Outbrain



Ivanka Trump Cuts Asking Rent for Manhattan Condo to...
Mansion Global



Take A Peek At This Insane Super Yacht
Mansion Global



This app will get you

อาการสุนัข
Smart



Are we focusing on making the
UX accessible rather than on
making the **content** accessible

—Mobile First—

Content First

Modern UI components
without ARIA

Accordions

An accordion is a vertically stacked set of interactive headings that each contain a title, content snippet, or thumbnail representing a section of content. The headings function as controls that enable users to reveal or hide their associated sections of content. Accordions are commonly used **to reduce the need to scroll** when presenting multiple sections of content on a single page.

<https://www.w3.org/TR/wai-aria-practices/#accordion>

<https://www.w3.org/TR/wai-aria-practices/examples/accordion/accordion.html>

Accordions with ARIA

Accordion Example

The below example section contains a simple personal information input form divided into 3 sections that demonstrates the [design pattern for accordion](#). In this implementation, one panel of the accordion is always expanded, and only one panel may be expanded at a time.

Example

Personal Information

Billing Address

Address 1:

Address 2:

City:

State:

Zip Code:

Shipping Address

Accordions with ARIA

```
<dl id="accordionGroup"
  role="presentation"
  class="Accordion">
  <dt role="heading" aria-level="3">
    <button aria-expanded="true"
      class="Accordion-trigger"
      aria-controls="sect1"
      id="accordion1id"
      type="button">
      <span class="Accordion-title">
        Personal Information
      </span>
      <span class="Accordion-icon">
        </button>
    </dt>
    <dd id="sect1"
      role="region"
      aria-labelledby="accordion1id"
      class="Accordion-panel">
      <div>
        <!-- Variable content within section, may include any type of
        native widgets. -->
```

Accordions **without** ARIA

Texas

Accessible example of an accordion without using ARIA

Austin



Dallas



Houston



Accordions without ARIA

Texas

Accessible example of an accordion without using ARIA

Austin



Austin is the state capital of Texas, an inland city bordering the Hill Country region. Home to the University of Texas flagship campus, Austin is known for its eclectic live-music scene centered around country, blues and rock. Its many parks and lakes are popular for hiking, biking, swimming and boating. South of the city, Formula One's Circuit of the Americas raceway has hosted the United States Grand Prix.

Did you know: Austin, Travis County and Williamson County have been the site of human habitation since at least 9200 BC.

[Austin on Wikipedia](#)

Dallas



Houston



Accordions without ARIA

Texas

Accessible example of an accordion without using ARIA

Austin

Austin is the state capital of Texas, an inland city bordering the Hill Country region. Home to the University of Texas flagship campus, Austin is known for its eclectic live-music scene centered around country, blues and rock. Its many parks and lakes are popular for hiking, biking, swimming and boating. South of the city, Formula One's Circuit of the Americas raceway has hosted the United States Grand Prix.

Did you know: Austin, Travis County and Williamson County have been the site of human habitation since at least 9200 BC.

[Austin on Wikipedia](#)

Dallas

Dallas, a modern metropolis in north Texas, is a commercial and cultural hub of the region. Downtown's Sixth Floor Museum at Dealey Plaza commemorates the site of President John F. Kennedy's assassination in 1963. In the Arts District, the Dallas Museum of Art and the Crow Collection of Asian Art cover thousands of years of art. The sleek Nasher Sculpture Center showcases contemporary sculpture.

Did you know: Dallas is one of the fastest-growing cities in the United States. From 2010 to 2016, Dallas recorded the highest net domestic migration in the country, in excess of 300,000

Houston

Houston is a large metropolis in Texas, extending to Galveston Bay. It's closely linked with the Space Center Houston, the coastal visitor center at NASA's astronaut training and flight control complex. The city's relatively compact Downtown includes the Theater District, home to the renowned Houston Grand Opera, and the Historic District, with 19th-century architecture and upscale restaurants.

Accordions **without** ARIA

Texas

Accessible example of an accordion without using ARIA

Austin



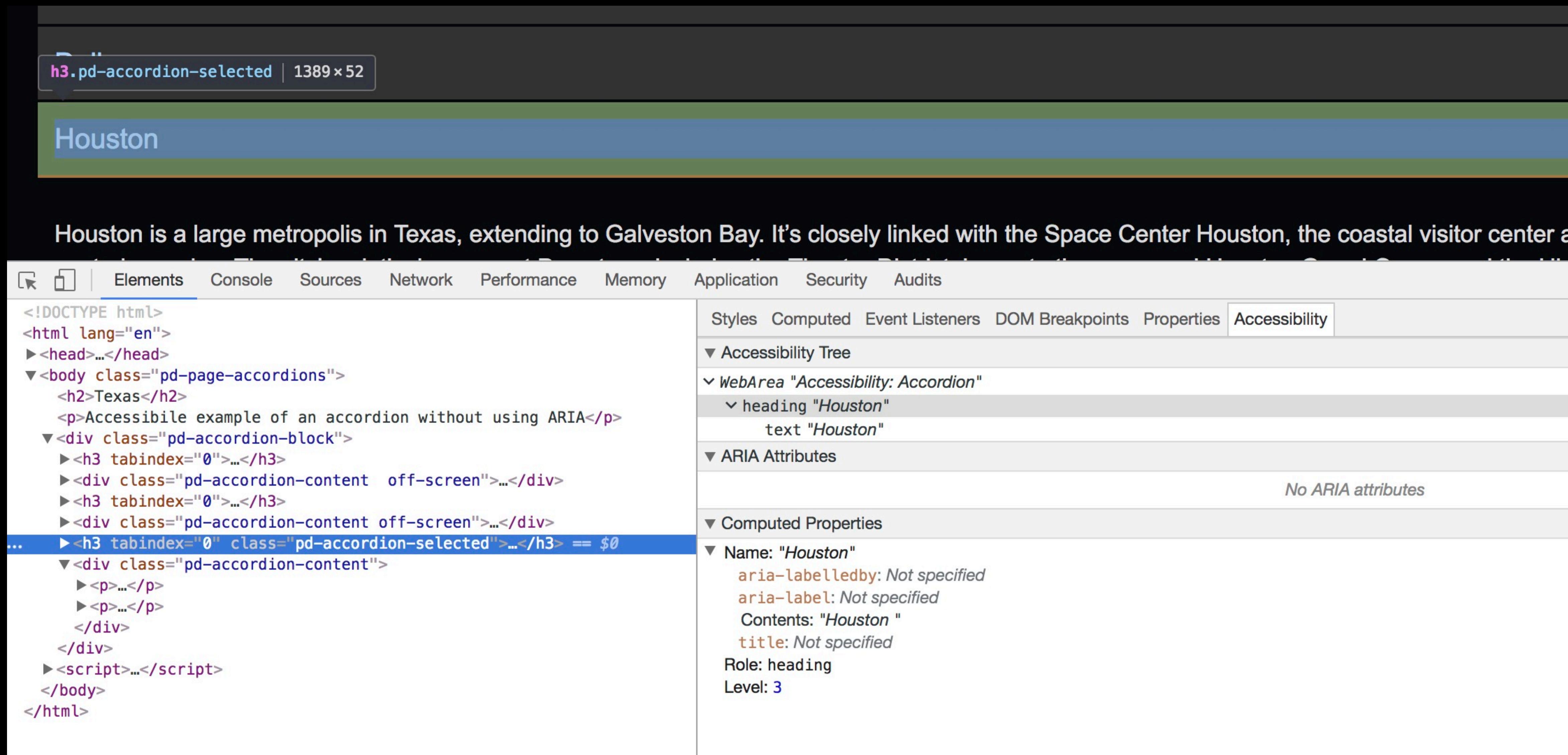
Dallas



Houston



Accordions without ARIA



The screenshot shows a web browser's developer tools with the 'Elements' tab selected. The left panel displays the HTML structure of a page. The right panel shows the 'Accessibility' tab of the developer tools, which is currently active. The 'Accessibility Tree' section shows a node for an 'Accordion' with the label 'Houston'. The 'ARIA Attributes' section indicates 'No ARIA attributes' for this element. The 'Computed Properties' section shows the following properties for the selected element:

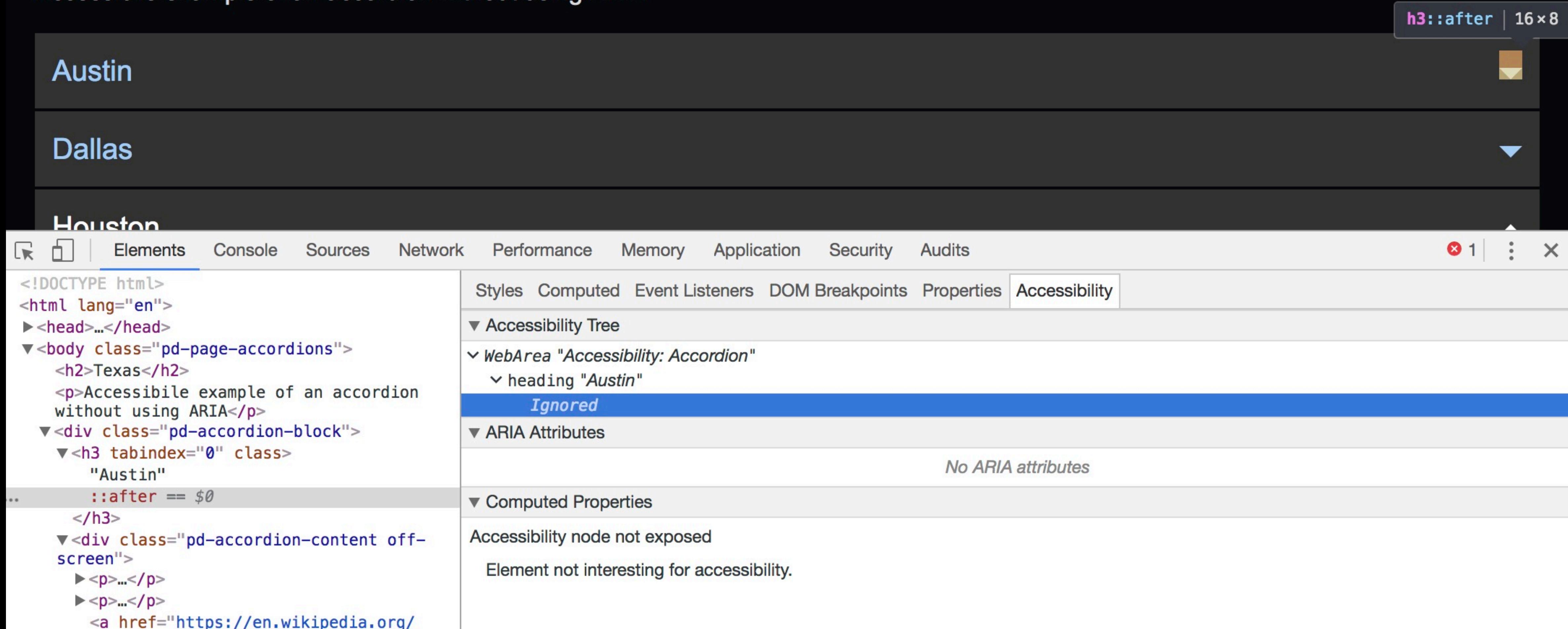
- Name: "Houston"
- aria-labelledby: Not specified
- aria-label: Not specified
- Contents: "Houston "
- title: Not specified
- Role: heading
- Level: 3

HTML Structure (Elements Tab):

```
<!DOCTYPE html>
<html lang="en">
  <head>...
  <body class="pd-page-accordions">
    <h2>Texas</h2>
    <p>Accessible example of an accordion without using ARIA</p>
    <div class="pd-accordion-block">
      <h3 tabindex="0">...
      <div class="pd-accordion-content off-screen">...
      <h3 tabindex="0">...
      <div class="pd-accordion-content off-screen">...
      <h3 tabindex="0" class="pd-accordion-selected">...
      <div class="pd-accordion-content">
        <p>...
        <p>...
      </div>
    </div>
    <script>...
  </body>
</html>
```

Accordions without ARIA

Accessible example of an accordion without using ARIA



h3::after | 16 x 8

Austin

Dallas

Houston

Elements Console Sources Network Performance Memory Application Security Audits

Styles Computed Event Listeners DOM Breakpoints Properties Accessibility

▼ Accessibility Tree

▼ WebArea "Accessibility: Accordion"

 ▼ heading "Austin"

 Ignored

▼ ARIA Attributes

 No ARIA attributes

▼ Computed Properties

 Accessibility node not exposed

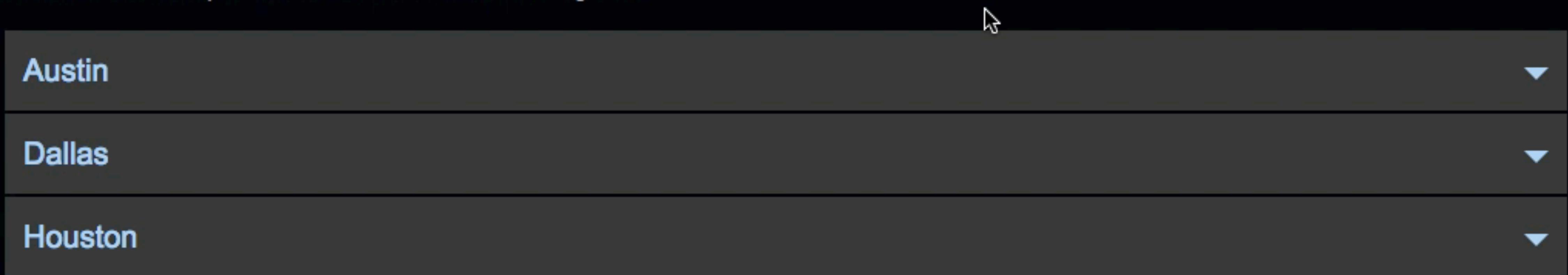
 Element not interesting for accessibility.

```
<!DOCTYPE html>
<html lang="en">
  <head>...</head>
  <body class="pd-page-accordions">
    <h2>Texas</h2>
    <p>Accessible example of an accordion without using ARIA</p>
    <div class="pd-accordion-block">
      <h3 tabindex="0" class="Austin">
        ::after == $0
      </h3>
      <div class="pd-accordion-content off-screen">
        <p>...</p>
        <p>...</p>
        <a href="https://en.wikipedia.org/">
      </div>
    </div>
  </body>
</html>
```

Accordions **without** ARIA

Texas

Accessible example of an accordion without using ARIA



You are currently on a text element, insid...

Tabs

Tabs are a set of layered sections of content, known as tab panels, that display one panel of content at a time.

<https://www.w3.org/TR/wai-aria-practices/#tabpanel>

<https://www.w3.org/TR/wai-aria-practices/examples/tabs/tabs-1/tabs.html>

Tabs with ARIA

Example

Nils Frahm

Agnes Obel

Joke

Nils Frahm is a German musician, composer and record producer based in Berlin. He is known for combining classical and electronic music and for an unconventional approach to the piano in which he mixes a grand piano, upright piano, Roland Juno-60, Rhodes piano, drum machine, and Moog Taurus.

Tabs with ARIA

[Nils Frahm](#)

[Agnes Obel](#)

[Joke](#)

Nils Frahm is a German musician, composer and record producer based in Berlin. He is known for combining different piano sounds in a single piano in which he mixes a grand piano, upright piano, Roland Juno-60, Rhodes piano, drum machine, and Moog synthesizer.

Agnes Caroline Thaarup Obel is a Danish singer/songwriter. Her first album, *Philharmonics*, was released by Polydor in 2010 and reached gold in June 2011 by the Belgian Entertainment Association (BEA) for sales of 10,000 Copies.

Fear of complicated buildings:

A complex complex complex.

Tabs with ARIA

```
<div class="tabs">
  <div role="tablist" aria-label="Entertainment">
    <button role="tab"
      aria-selected="true"
      aria-controls="nils-tab"
      id="nils">
      Nils Frahm
    </button>
    <button role="tab"
      aria-selected="false"
      aria-controls="agnes-tab"
      id="agnes"
      tabindex="-1">
      Agnes Obel
    </button>
    <button role="tab"
      aria-selected="false"
      aria-controls="complexcomplex"
      id="complex"
      tabindex="-1"
      data-deletable="">
      Joke
    </button>
  </div>
  <div tabindex="0"
    role="tabpanel"
    id="nils-tab"
    aria-labelledby="nils">
    <p>
      Nils Frahm is a German musician, composer and record producer based in Berlin. He is known for combining classical and electronic music and for an unconventional approach to the piano in which he mixes a grand piano, upright piano, Roland Juno-60, Rhodes piano, drum machine, and Moog Taurus.
    </p>
  </div>
  <div tabindex="0"
    role="tabpanel"
    id="agnes-tab"
    aria-labelledby="agnes"
    hidden="">
    <p>
```

Tabs without ARIA

Accessibility example for a tabbed interface without using ARIA

6th Street Red River South Congress

Whether you love it or loath it, Sixth Street is one of the most iconic streets in Austin. It's the epicenter of what locals refer to as the "Music Capital of the World."

There are three sections of Sixth Street in Austin: West, East and what locals refer to as Dirty. West Sixth is the main Street that runs west from Congress Avenue. For the most part, the nightlife scene ends at North Lamar Boulevard.

Tabs **without** ARIA

Austin Streets

Accessibility example for a tabbed interface without using ARIA

6th Street

Whether you love it or loath it, Sixth Street is one of the most iconic streets in Austin. It's the epicenter of what made Austin the

There are three sections of Sixth Street in Austin: West, East and what locals refer to as Dirty. West Sixth is the section of Sixth in most part, the nightlife scene ends at North Lamar Boulevard.

Red River

If Austin is the worlds live music capital, then the Red River Music District is it's senate chambers. An eclectic three blocks of

South Congress

This vibrant neighborhood south of Lady Bird Lake is a must-stroll for visitors and a popular hangout for locals. South Congress Austin's yesteryear in its boutiques, eateries, galleries and music venues.

Tabs without ARIA

6th Street

Whether you love it or loath it, Sixth Street is one of the most iconic streets in Austin. It's the epicenter of what made World."

There are three sections of Sixth Street in Austin: West, East and what locals refer to as Dirty. West Sixth is the section Congress Avenue. For the most part, the nightlife scene ends at North Lamar Boulevard.

Red River

If Austin is the worlds live music capital, then the Red River Music District is it's senate chambers. An eclectic three block music in Austin

South Congress

This vibrant neighborhood south of Lady Bird Lake is a must-stroll for visitors and a popular hangout for locals. South Congress has character and boasts the story of Austin's yesteryear in its boutiques, eateries, galleries and music venues.

Tabs without ARIA

6th Street

Red River

South Congress

Whether you love it or loath it, Sixth Street is one of the most iconic streets in Austin. It's the epicenter of what made Austin the World."

There are three sections of Sixth Street in Austin: West, East and what locals refer to as Dirty. West Sixth is the section between Congress and South Congress Avenue. For the most part, the nightlife scene ends at North Lamar Boulevard.

If Austin is the world's live music capital, then the Red River Music District is its senate chambers. An eclectic three block neighborhood, the Red River District is the heart of Austin's music scene.

This vibrant neighborhood south of Lady Bird Lake is a must-stroll for visitors and a popular hangout for locals. South Congress has a unique character and boasts the story of Austin's yesteryear in its boutiques, eateries, galleries and music venues.

Tabs without ARIA

[6th Street](#)

[Red River](#)

[South Congress](#)

Whether you love it or loath it, Sixth Street is one of the most iconic streets in Austin. It's the epicenter of what's happening in the city, and it's been that way for decades. "Sixth Street is the heart and soul of Austin," says one local. "It's where the city comes to life at night."

There are three sections of Sixth Street in Austin: West, East and what locals refer to as Dirty. West Sixth is the most popular section, with a mix of bars, restaurants and clubs. East Sixth is more residential, while Dirty Sixth is located between Congress Avenue and North Lamar Boulevard. For the most part, the nightlife scene ends at North Lamar Boulevard.

If Austin is the world's live music capital, then the Red River Music District is its senate chambers. An eclectic mix of bars, clubs and music venues, the Red River District is where you can catch a show by some of the city's best artists. It's also a great place to grab a drink or a bite to eat.

This vibrant neighborhood south of Lady Bird Lake is a must-stroll for visitors and a popular hangout for locals. It's full of character and boasts the story of Austin's yesteryear in its boutiques, eateries, galleries and music venues.

Tabs without ARIA

[6th Street](#)

[Red River](#)

[South Congress](#)

Whether you love it or loath it, Sixth Street is one of the most iconic streets in Austin. It's the [e](#)
[Music Capital of the World.](#)"

There are three sections of Sixth Street in Austin: West, East and what locals refer to as Dirty.
Street that runs west from Congress Avenue. For the most part, the nightlife scene ends at No

CSS

~~display: none~~

class="off-screen"

Tabs without ARIA

Austin Streets

Accessibility example for a tabbed interface without using ARIA

6th Street Red River South Congress

Whether you love it or loath it, Sixth Street is one of the most iconic streets in Austin. It's the epicenter of

There are
West Sixth
the nightlif

The code
could be d

Heading

Headings

- 1: Austin Streets
- 2: 6th Street
- 2: Red River
- 2: South Congress

Tabs without ARIA

6th Street Red River South Congress

Whether you love it or loath it, Sixth Street is one of

Mu

Red

tabindex='0'>Red

If Austin is the

eclectic three b

```
<button role="tab"
  aria-selected="false"
  aria-controls="agnes-tab"
  id="agnes"
  tabindex="-1">
  Agnes Obel
</button>

<div tabindex="0"
  role="tabpanel"
  id="agnes-tab"
  aria-labelledby="agnes"
  hidden="">
  <p>
```

**“PROGRAMS MUST BE WRITTEN FOR
PEOPLE TO READ, AND ONLY INCIDENTALLY
FOR MACHINES TO EXECUTE”**

MIT Structure and Interpretation of Computer Programs
Hal Abelson and Gerald Jay Sussman

Hamburgers **without** ARIA

Hamburger Menu

Accessibility example for a hamburger menu without using ARIA

The 1st Rule of ARIA

The 2nd Rule of ARIA

The 3rd Rule of ARIA

The 4th Rule of ARIA

Hamburgers **without** ARIA

```
<header>
  <h1>Hamburger Example </h1>

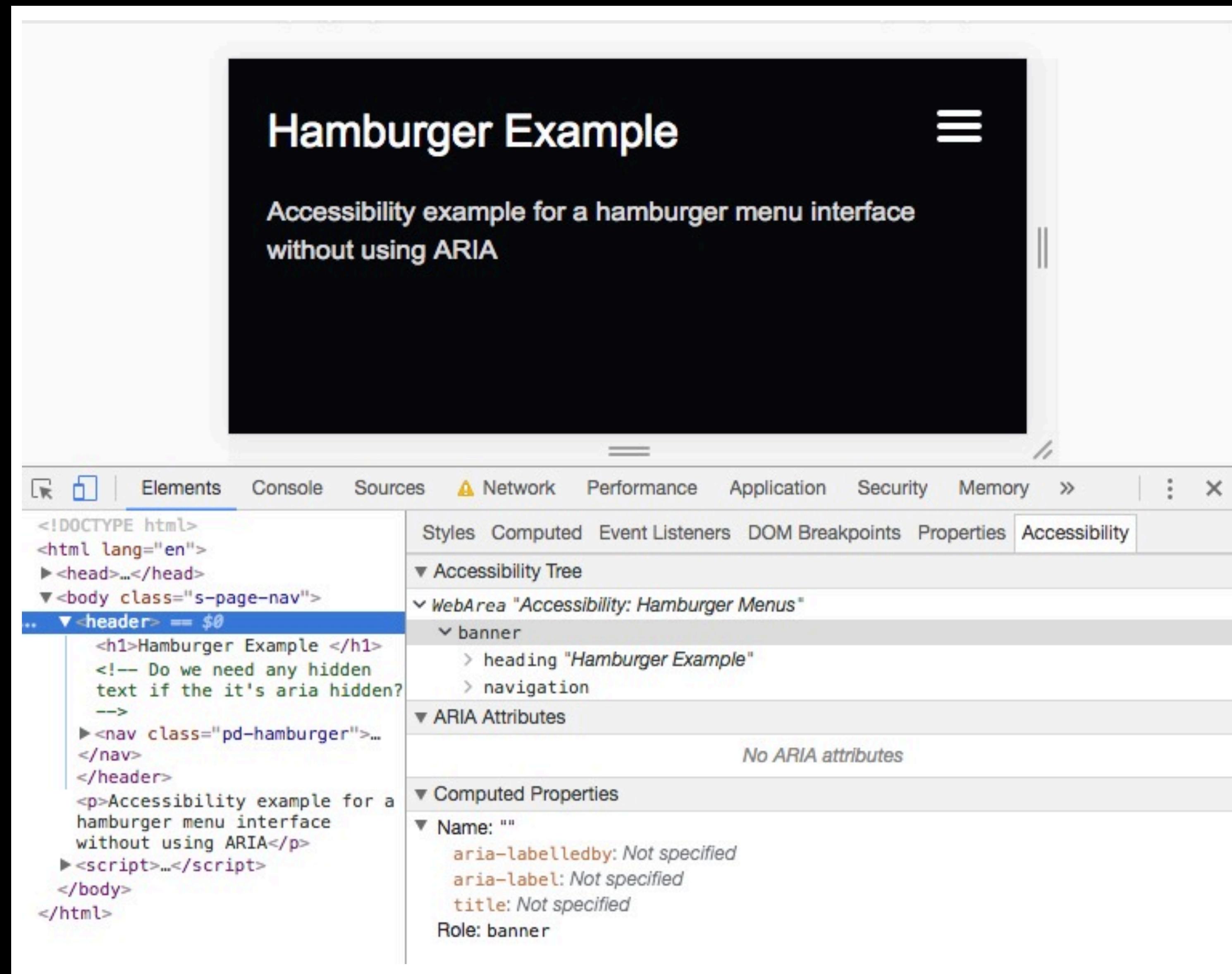
  <nav class="pd-hamburger">

    <i class="pd-hamburger-icon" aria-hidden="true" tabindex="1"></i>

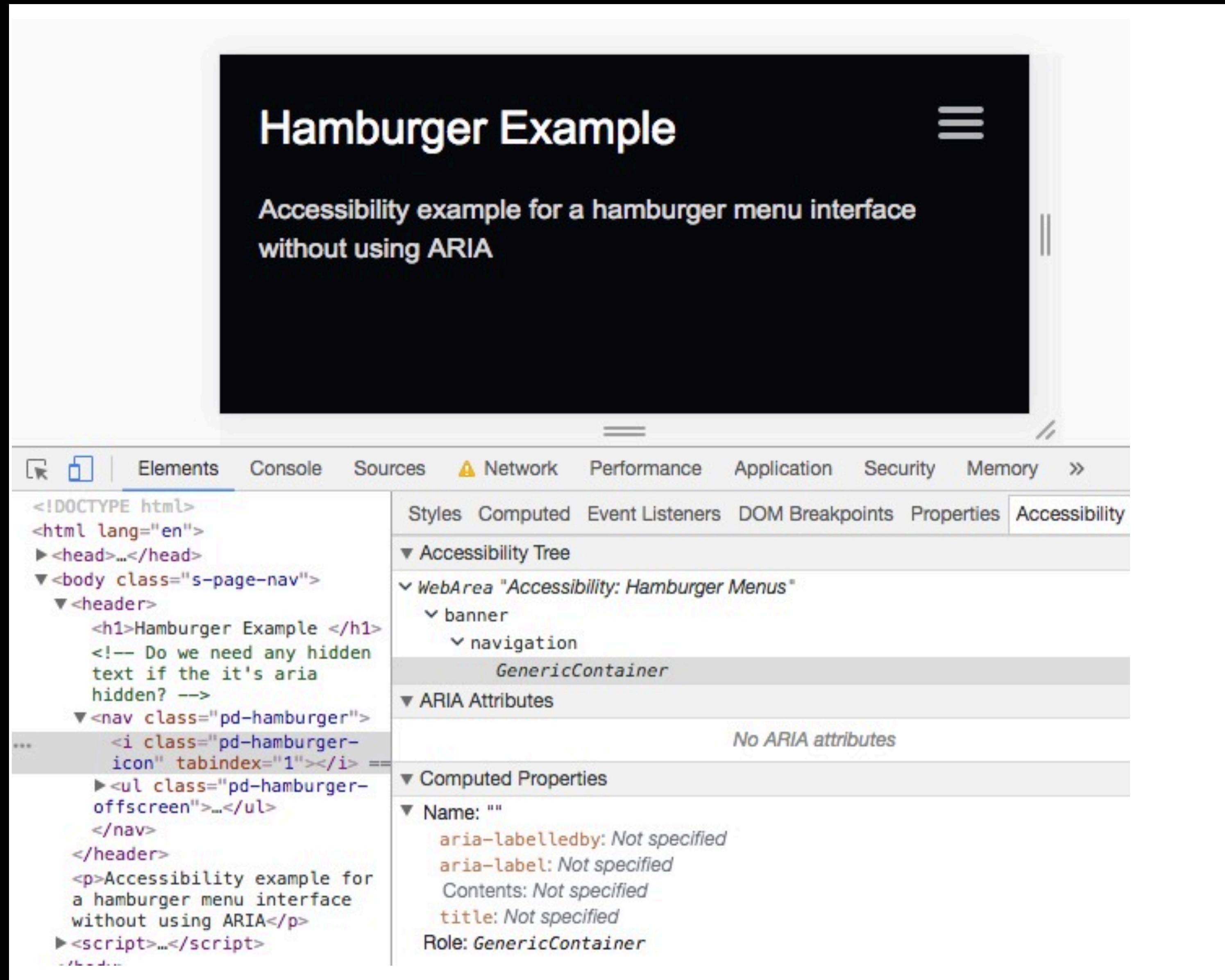
    <ul class="pd-hamburger-offscreen">
      <li><a href="">The First Rule of ARIA</a></li>
      <li><a href="">The Second Rule of ARIA</a></li>
      <li><a href="">The Third Rule of ARIA</a></li>
      <li><a href="">The Fourth Rule of ARIA</a></li>
      <li><a href="">The Fifth Rule of ARIA</a></li>
    </ul>

  </nav>
</header>
```

Hamburgers **without** ARIA



Hamburgers **without** ARIA



The screenshot shows a web browser window with the title "Hamburger Example" and a subtitle "Accessibility example for a hamburger menu interface without using ARIA". The browser's address bar shows the URL "http://hamburger-example.com". Below the browser window is the developer tools interface, specifically the "Elements" tab of the "Inspector" panel. The "Accessibility" tab is selected in the top navigation bar of the tools. The "Elements" panel on the left shows the HTML structure of the page, including a header with a hamburger menu icon and a navigation menu. The "Accessibility" panel on the right shows the "Accessibility Tree" for the page. The tree structure includes a "WebArea" node with a "navigation" node under it, which is identified as a "GenericContainer". The "ARIA Attributes" section of the tree indicates "No ARIA attributes". The "Computed Properties" section shows that the element has a "Name: """, "Role: GenericContainer", and several ARIA-related properties set to "Not specified".

Hamburger Example

Accessibility example for a hamburger menu interface without using ARIA

Elements Console Sources Network Performance Application Security Memory »

Styles Computed Event Listeners DOM Breakpoints Properties **Accessibility**

▼ Accessibility Tree

▼ WebArea "Accessibility: Hamburger Menus"

 ▼ banner

 ▼ navigation

 GenericContainer

▼ ARIA Attributes

 No ARIA attributes

▼ Computed Properties

▼ Name: ""

 aria-labelledby: Not specified

 aria-label: Not specified

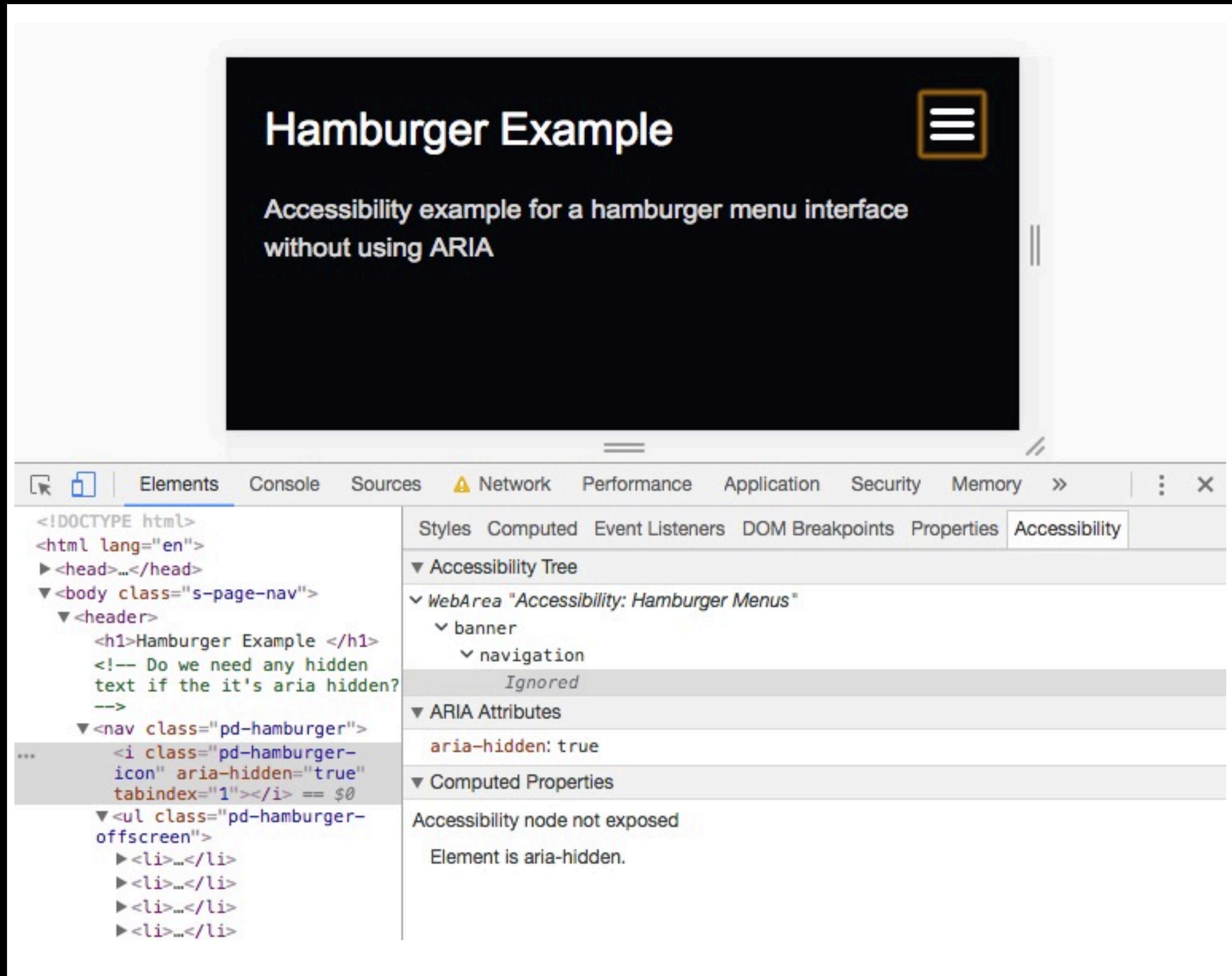
 Contents: Not specified

 title: Not specified

 Role: GenericContainer

```
<!DOCTYPE html>
<html lang="en">
  <head>...</head>
  <body class="s-page-nav">
    <header>
      <h1>Hamburger Example </h1>
      <!-- Do we need any hidden text if the it's aria hidden? -->
      <nav class="pd-hamburger">
        <i class="pd-hamburger-icon" tabindex="1"></i> ...
        <ul class="pd-hamburger-offscreen">...</ul>
      </nav>
    </header>
    <p>Accessibility example for a hamburger menu interface without using ARIA</p>
  </body>
</html>
```

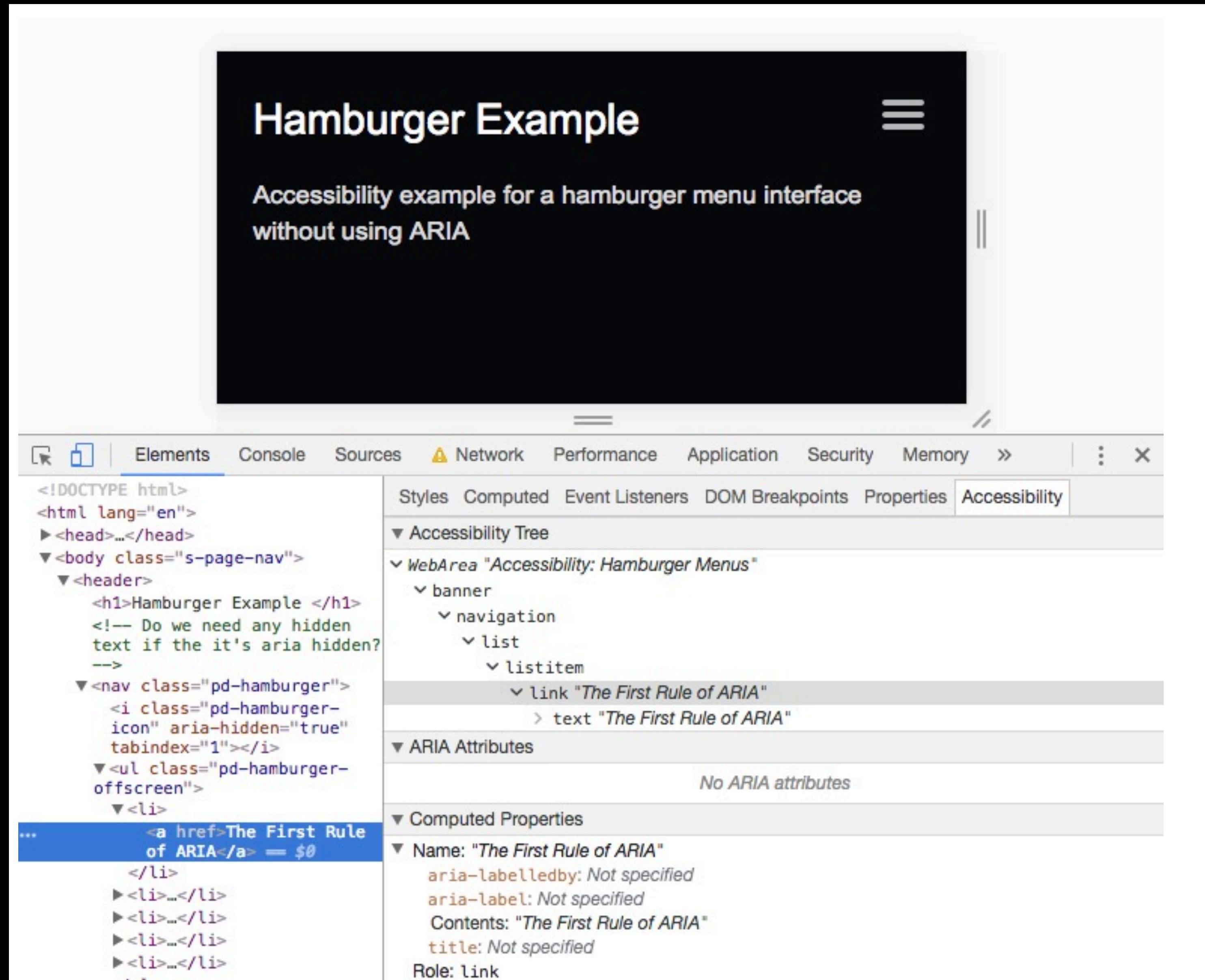
Hamburgers **without** ARIA



The screenshot shows a browser window with developer tools open. The main content area displays a dark-themed "Hamburger Example" page with a title and a hamburger menu icon. The developer tools interface includes:

- Elements** panel: Shows the HTML structure of the page, including a `<i>` element with `aria-hidden="true"` and `tabindex="1"`.
- Accessibility** panel: Shows the Accessibility Tree and ARIA Attributes for the page. The tree node for the hamburger menu is labeled "Ignored". The ARIA Attributes section shows `aria-hidden: true`.
- Computed Properties** section: States "Accessibility node not exposed" and "Element is aria-hidden".

Hamburgers **without** ARIA



The screenshot shows a web browser window with the title "Hamburger Example". The main content area displays the text: "Accessibility example for a hamburger menu interface without using ARIA". Below the browser window is the developer tools interface, specifically the "Elements" tab and the "Accessibility" panel.

Elements Tab:

```
<!DOCTYPE html>
<html lang="en">
  <head>...</head>
  <body class="s-page-nav">
    <header>
      <h1>Hamburger Example </h1>
      <!-- Do we need any hidden text if the it's aria hidden? -->
    <nav class="pd-hamburger">
      <i class="pd-hamburger-icon" aria-hidden="true" tabindex="1"></i>
    <ul class="pd-hamburger-offscreen">
      <li>
        <a href="The First Rule of ARIA">The First Rule of ARIA</a> = $0
      </li>
      <li>...</li>
      <li>...</li>
      <li>...</li>
      <li>...</li>
    </ul>
  </body>
</html>
```

Accessibility Panel:

- Styles
- Computed
- Event Listeners
- DOM Breakpoints
- Properties
- Accessibility**

Accessibility Tree:

- WebArea "Accessibility: Hamburger Menus"
 - banner
 - navigation
 - list
 - listitem
 - link "The First Rule of ARIA"
 - text "The First Rule of ARIA"

ARIA Attributes:

No ARIA attributes

Computed Properties:

 - Name: "The First Rule of ARIA"
 - aria-labelledby: Not specified
 - aria-label: Not specified
 - Contents: "The First Rule of ARIA"
 - title: Not specified
 - Role: link

Hamburgers **without** ARIA

Hamburger Example

Accessibility example for a hamburger menu interface without using ARIA

Landmarks menu

Landmarks

banner
navigation



FULL
“STACK OVERFLOW”
DEVELOPER

@codepo8

role="presentation"

"The intended use is when an element is used to change the look of the page but does not have all the functional, interactive, or structural relevance implied by the element type.....

Example use cases: An element whose content is completely presentational (like a decorative graphic)"

<https://www.w3.org/TR/wai-aria-1.1/#none>

<https://www.w3.org/TR/wai-aria-1.1/#presentation>

role="presentation"

role="none"

<https://www.w3.org/TR/wai-aria-1.1/#none>
<https://www.w3.org/TR/wai-aria-1.1/#presentation>

aria-hidden="true"

<https://www.w3.org/TR/wai-aria-1.1/#none>
<https://www.w3.org/TR/wai-aria-1.1/#presentation>

Carousels

There was an old lady who swallowed a fly

<

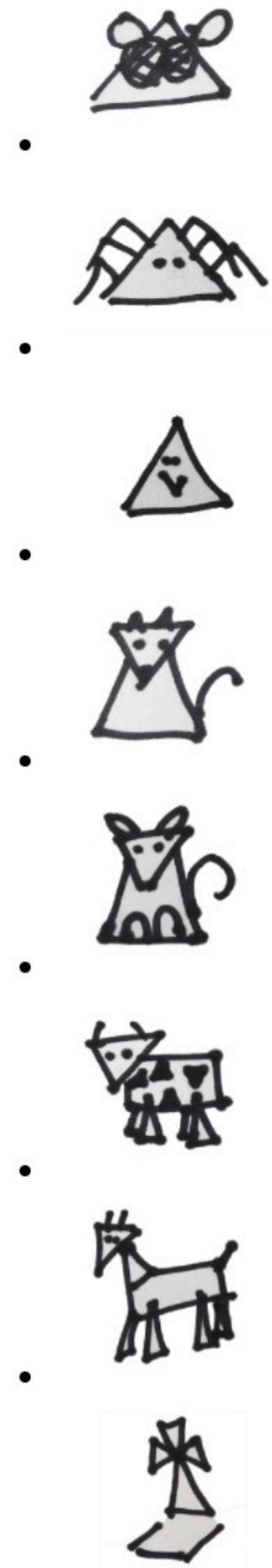


>

You are currently on a heading level 2, ins...

Carousels

There was an old lady who swallowed a fly



```
<div class="pd-carousel-block" >
  <i class="i-arrow i-arrow--left" aria-hidden="true" tabindex="0"></i>
  <i class="i-arrow i-arrow--right" aria-hidden="true" tabindex="0"></i>
  <ul>
    <li><img src='img/fly.png' alt="a fly"/></li>
    <li><img src='img/spider.png' alt="a spider"/></li>
    <li><img src='img/bird.png' alt="a bird"/></li>
    <li><img src='img/cat.png' alt="a cat"/></li>
    <li><img src='img/dog.png' alt="a dog"/></li>
    <li><img src='img/cow.png' alt="a cow"/></li>
    <li><img src='img/horse.png' alt="a horse"/></li>
    <li><img src='img/dead.png' alt="she died of course"/></li>
  </ul>
</div>
```

HTML



The W3C spec says not to but.....

HTML 5	ARIA Role
<header>	role="banner"
<nav>	role="navigation"
<main>	role="main"
<footer>	role="contentinfo"
<aside>	role="complementary"
<section>	role="region"
<article>	role="article"
none	role="search"
<form>	role="form"

War what is it good for?

absolutely nothing?

**ARIA is good for
dynamic content,
single page apps,
alerts and more.....**

Testing

- Voice Over on Mac, Talkback Andriod, NVDA windows
- Accessibility Inspector in Dev Tools
- Audits/Lighthouse in Chrome Dev Tools
- Real customers

Take Aways

- Accessibility is part of your **job**
- Make the **content** accessible not the UX
- Embrace web **standards**
- Remember the **first rule** and keep it simple
- You will change peoples lives

Acknowledgements

Jamie and Lion

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Charlie Riggle

Peter Korn

Resources

- W3C documentation
- simplyaccessible.com
- [microsoft /design/inclusive](https://microsoft.github.io/design/inclusive)
- Paciello Group

