

ARIA Roles & Attributes



Brian Treese

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ARIA, What the Heck Is It?

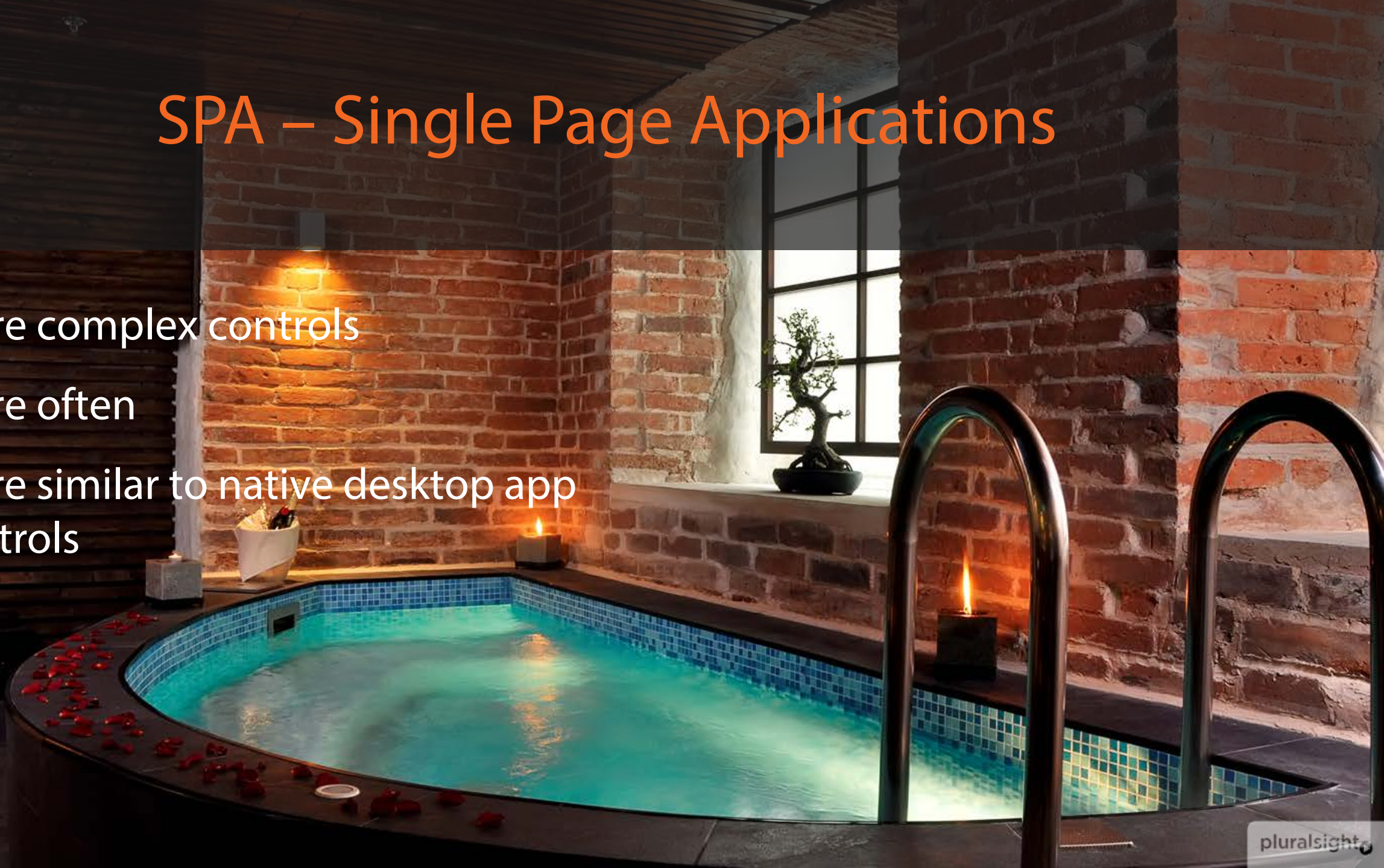
- WIA-ARIA = Web Accessibility Initiative - **A**ccessible **R**ich **I**nternet **A**pplications
- A specification developed by the W3C
- Helps bring accessibility to sites and apps using AJAX, HTML, and JavaScript

SPA – Single Page Applications

More complex controls

More often

More similar to native desktop app controls



Without ARIA

Address

Required

City

Required

State

Required

Postal Code

Required

Submit



Span



Address

Required

City

Required

State

Required

Postal Code

Required

Submit



Span



Address

Required

City

Required

State

Required

Postal Code

Required

Submit



Address

Required

City

Required

State

Required

Postal Code

Required

Submit



Address

Required

City

Required

State

Required

Postal Code

Required

Submit

With ARIA

Address

Required

City

Required

State

Required

Postal Code

Required

Submit



Span w/role="button"



Address

Required

City

Required

State

Required

Postal Code

Required

Submit



Span w/role="button"



Address

Required

City

Required

State

Required

Postal Code

Required

Submit



Address

Required

City

Required

State

Required

Postal Code

Required

Submit



Address

Required

City

Required

State

Required

Postal Code

Required

Submit



Address

Required

City

Required

State

Required

Postal Code

Required

Submit



Use Default HTML
Elements if Possible!

ARIA Categories

Roles

States and
properties

ARIA Roles

Define What a Widget Is or Does

- Menus
- Sliders
- Progress meters
- Modals
- Etc.

Describe Structure

- Headings
- Regions
- Tables

ARIA States & Properties

States

- Checked
- Disabled
- Selected
- Hidden

Properties

- Drag & Drop
- Live Regions
- Modals

Use Exiting HTML
Elements if Possible!

ARIA Roles

Landmark Roles

Help navigate
content

Describe common
regions

Added with “role”
attributes

`role="application"`

Used if the region is considered an application

Tells assistive technology to switch to application browsing mode

`role="banner"`

Generally the header of the site or application

```
role="navigation"
```

Contains navigation for the site or application

`role="main"`

Contains main content

`role="search"`

Added to the search form for the site or application

`role="complimentary"`

Contains content that is complimentary to the main content for the document


```
role="form"
```

Add to anything that contains a collection of fields that makes up a form

`role="contentinfo"`

Generally found in the footer

Provides information about the parent document

Widget Roles

alert	menuitem	spinbutton
alertdialog	menuitemcheckbox	status
button	menuitemradio	tab
checkbox	option	tabpanel
dialog	progressbar	textbox
gridcell	radio	timer
link	scrollbar	tooltip
log	slider	treeitem
marquee		

http://www.w3.org/TR/wai-aria/roles#widget_roles

Create an Account

CHOOSE A USERNAME

ENTER YOUR EMAIL ADDRESS

CREATE A PASSWORD

Create Account

Elements Network Sources Timeline »

```
<!DOCTYPE html>
<html lang="en">
  <head>...</head>
  <body>
    <form action>
      <fieldset>
        <legend>Create an Account</legend>
        <div class="field">...</div>
        <div class="field">...</div>
        <div class="field">
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```

html body

Styles Event Listeners DOM Breakpoints Properties \$scope »

Filter + -

```
element.style {
}
```

margin -

border -

pluralsight

Create an Account

CHOOSE A USERNAME

JohnDoe

ENTER YOUR EMAIL ADDRESS

JohnDoe@gmail.com

CREATE A PASSWORD

Create Account

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Styles Event Listeners DOM Breakpoints Properties \$scope »

Filter + -

```
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margin -

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pluralsight

Container Roles

combobox

grid

listbox

menu

menubar

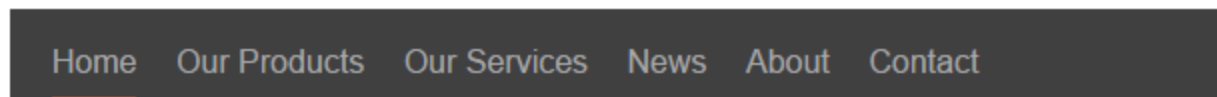
radiogroup

tablist

tree

treegrid

http://www.w3.org/TR/wai-aria/roles#widget_roles



Elements Network Sources Timeline »

```
<!DOCTYPE html>
<html lang="en">
  <head>...</head>
  <body>
    <nav role="navigation">
      <h2>Main Navigation</h2>
      <ul role="menu" class="menu">
        <li role="menuitem" class="current">...</li>
        <li role="menuitem">
          <a href="#" aria-haspopup="true">Our Products</a>
          <ul role="menu" aria-hidden="true">
            <li role="menuitem">...</li>
            <li role="menuitem">...</li>
            <li role="menuitem">...</li>
          </ul>
        </li>
        <li role="menuitem">...</li>
        <li role="menuitem">...</li>
        <li role="menuitem">...</li>
        <li role="menuitem">...</li>
      </ul>
    </nav>
    <script src="http://code.jquery.com/jquery-
    latest.min.js"></script>
    <script>...</script>
  </body>
</html>
```

html body nav ul.menu li

Styles Event Listeners DOM Breakpoints Properties \$scope »

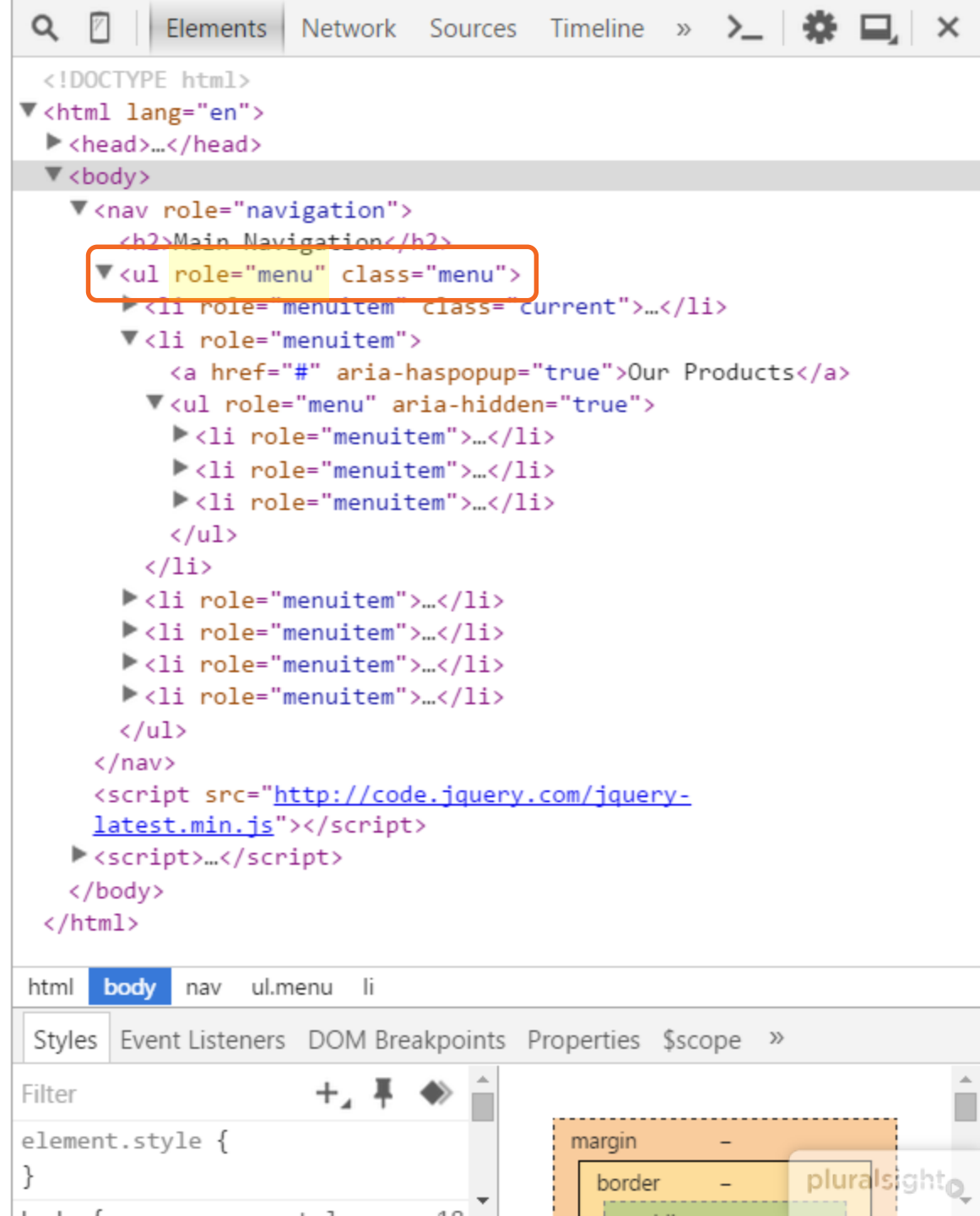
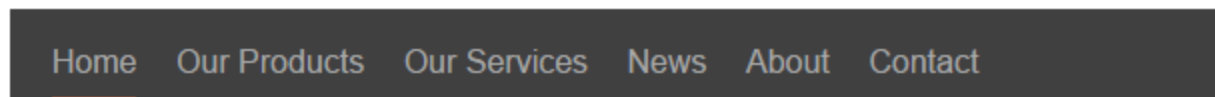
Filter + -

```
element.style {
}
```

margin -

border -

pluralsight



Home Our Products Our Services News About Contact

Elements Network Sources Timeline »

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            <li role="menuitem">...</li>
          </ul>
        </li>
        <li role="menuitem">...</li>
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html body nav ul.menu li

Styles Event Listeners DOM Breakpoints Properties \$scope »

Filter + -

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margin -

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pluralsight

Document Structure Roles

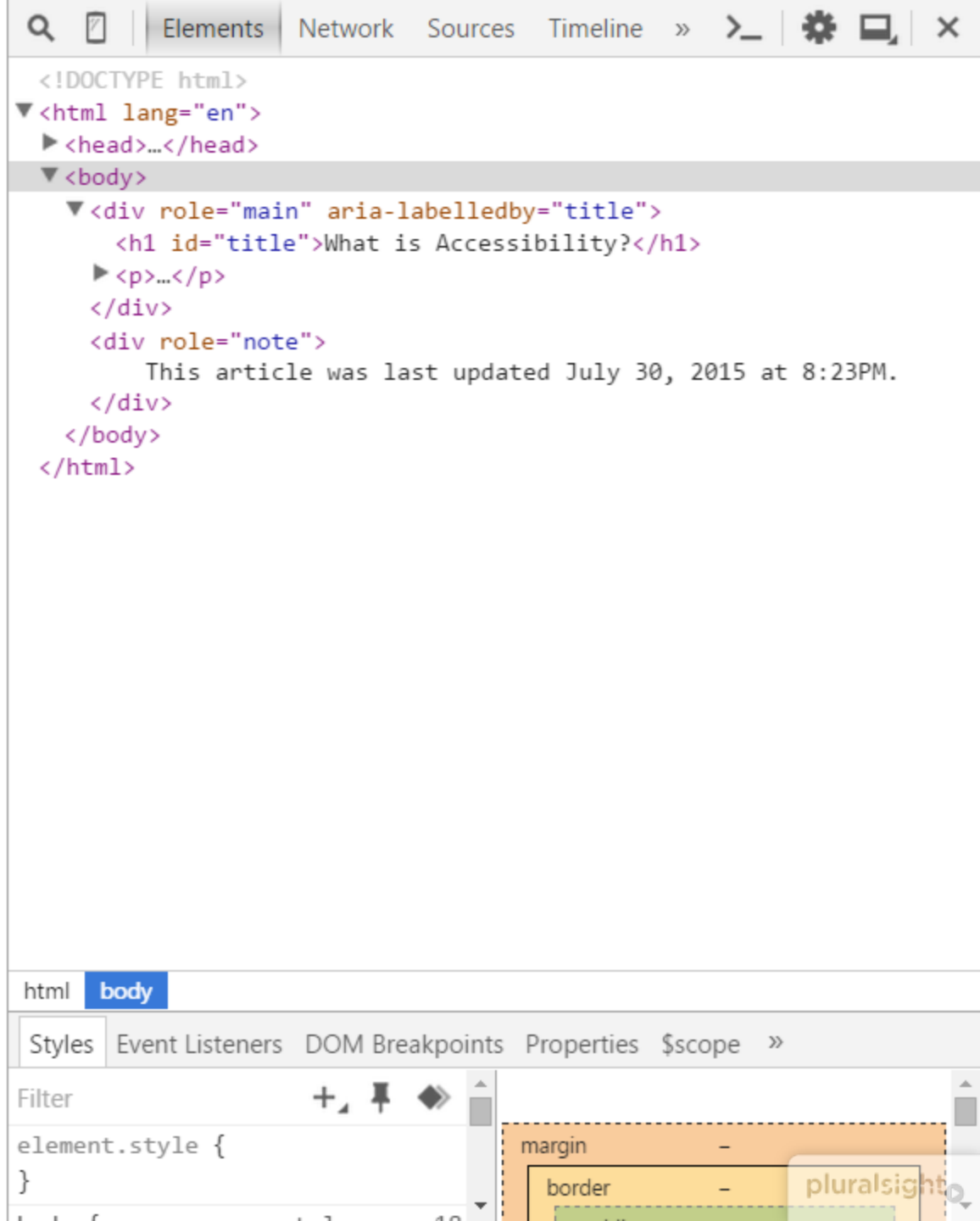
article	img	region
columnheader	list	row
definition	listitem	rowgroup
directory	math	rowheader
document	note	separator
group	presentation	toolbar
heading		

http://www.w3.org/TR/wai-aria/roles#document_structure_roles

What is Accessibility?

Web accessibility means that people with disabilities can use the Web. More specifically, Web accessibility means that people with disabilities can perceive, understand, navigate, and interact with the Web, and that they can contribute to the Web. Web accessibility also benefits others, including older people with changing abilities due to aging.

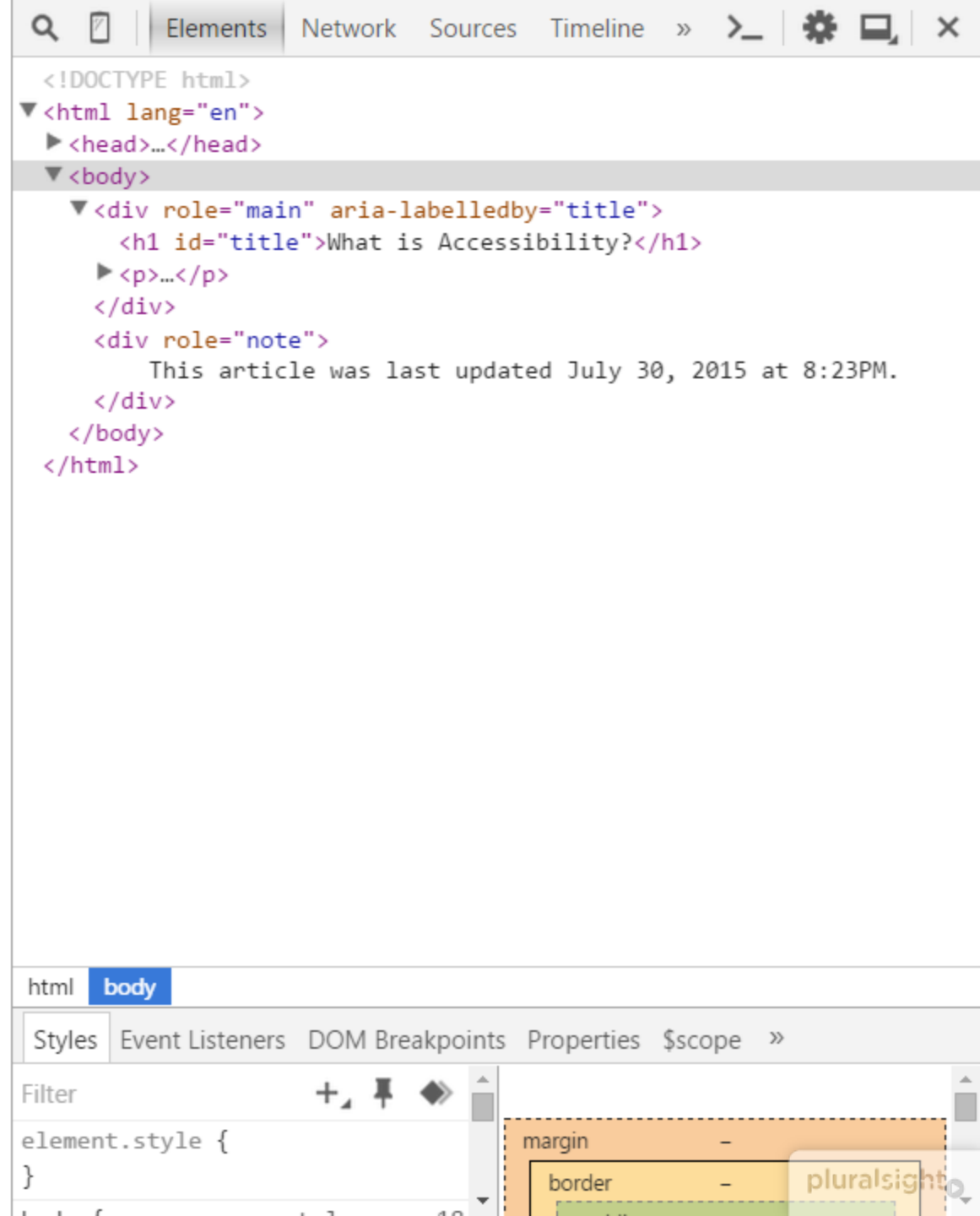
This article was last updated July 30, 2015 at 8:23PM.



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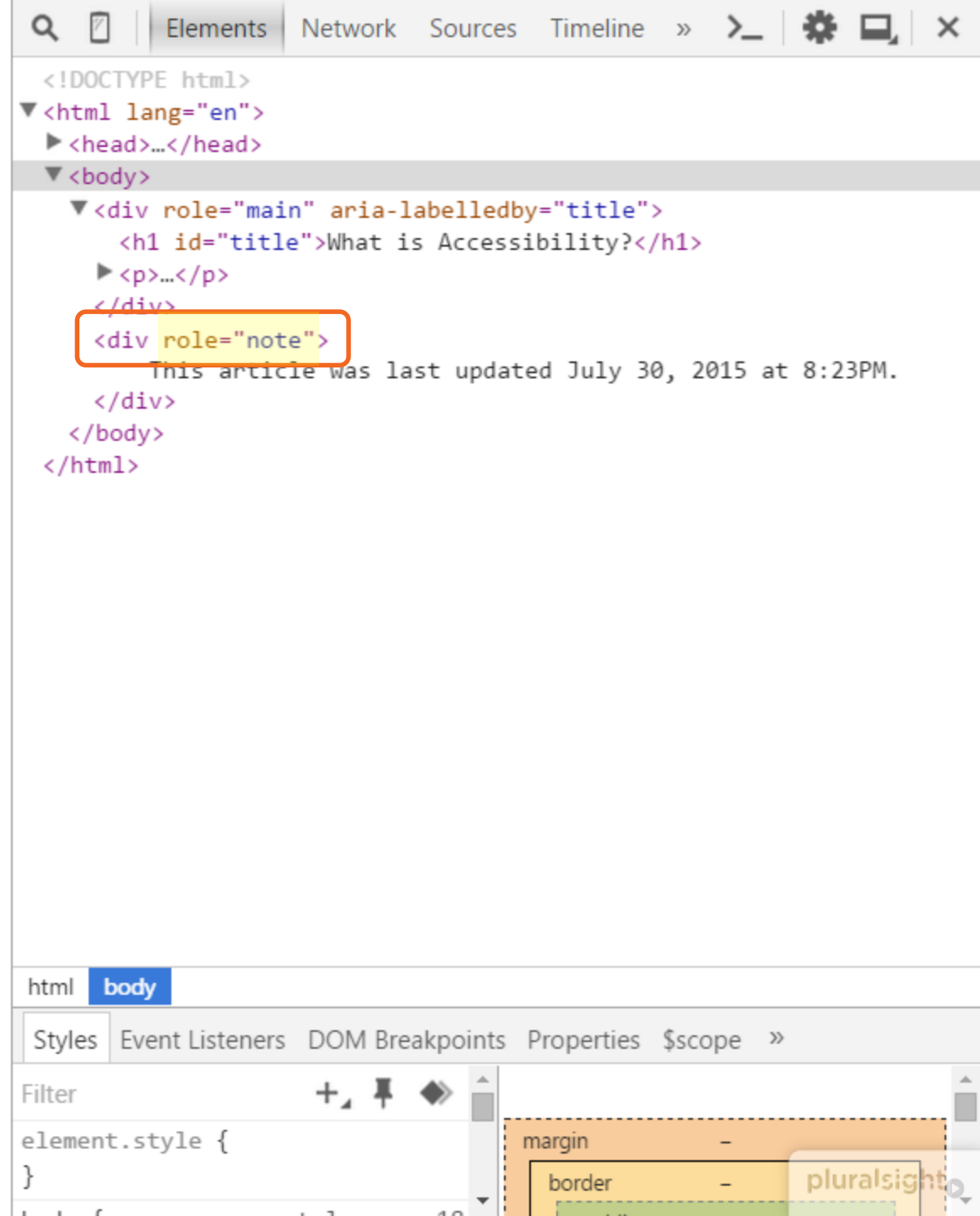
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ARIA States & Properties

ARIA States

Describe dynamic
states

Changed with
JavaScript

Prefixed with “aria-”

ARIA States

aria-busy

aria-disabled

aria-grabbed

aria-hidden

aria-invalid

Home Our Products Our Services News About Contact

Elements Network Sources Timeline » >_ ⚙️ 📱 ✕

```
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          <ul role="menu" aria-hidden="true" class="submenu">...</ul>
        </li>
        <li role="menuitem">...</li>
        <li role="menuitem">...</li>
        <li role="menuitem">...</li>
        <li role="menuitem">...</li>
      </ul>
    </nav>
    <script src="http://code.jquery.com/jquery-latest.min.js"></script>
    <script>...</script>
  </body>
</html>
```

html body nav ul.menu **li**

Styles Event Listeners DOM Breakpoints Properties \$scope »

Filter + 📌 🔍

```
element.style {
}
```

position -
margin -
border -

pluralsight

Home Our Products Our Services News About Contact

Elements Network Sources Timeline »

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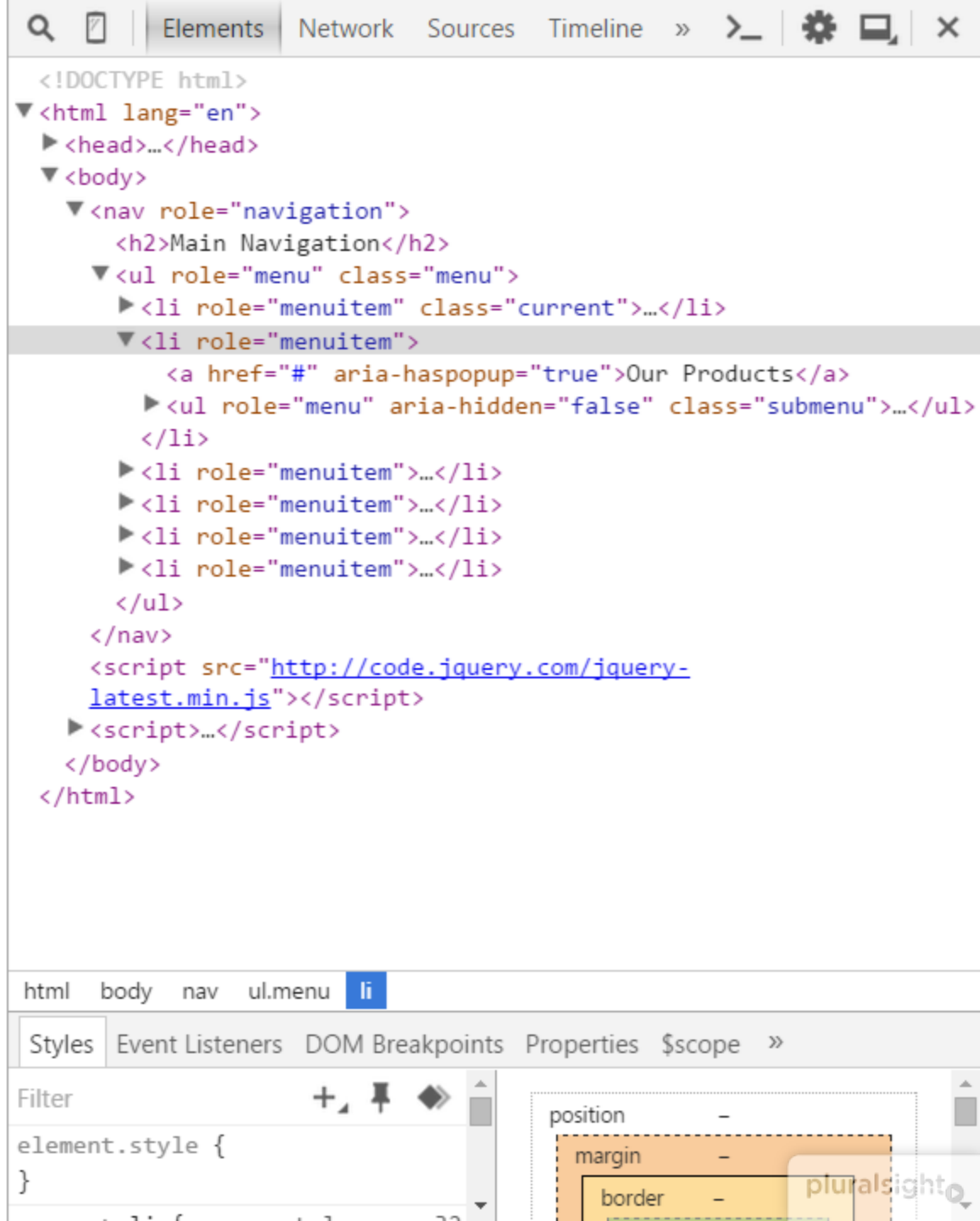
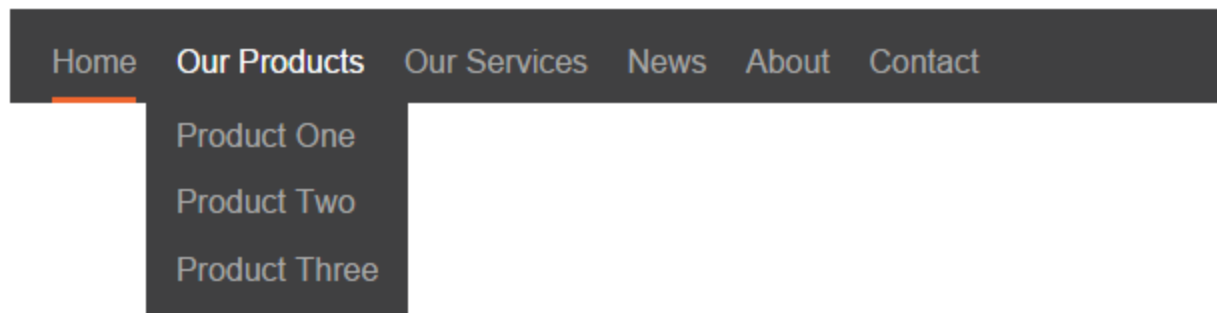
Styles Event Listeners DOM Breakpoints Properties \$scope »

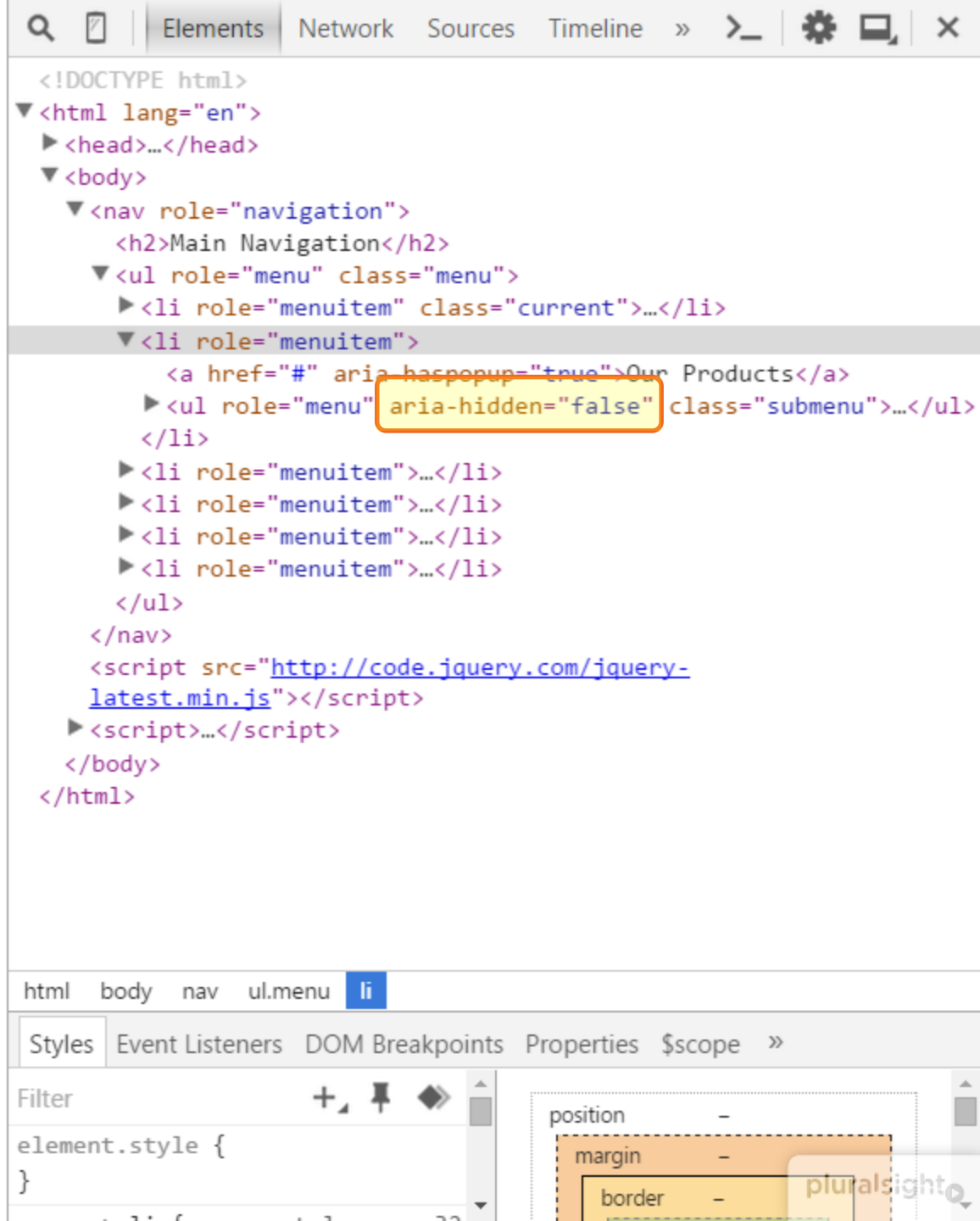
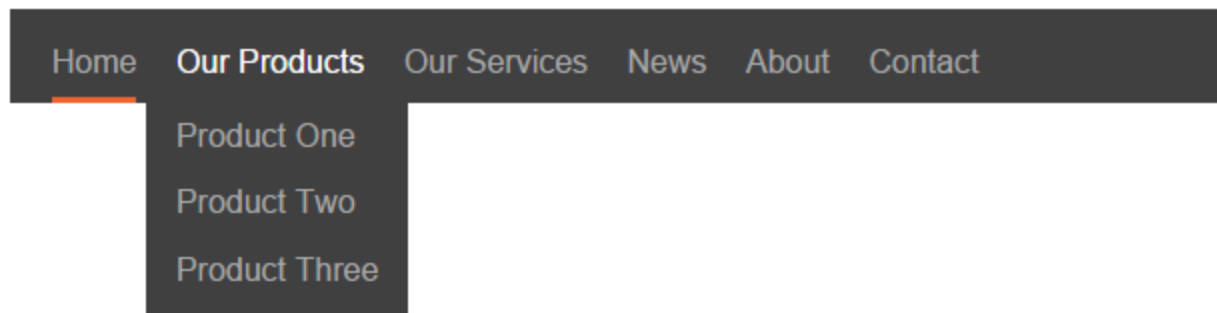
Filter + - 🔍

```
element.style {
}
```

position -
margin -
border -

pluralsight





ARIA Properties

Describe
relationships

Rarely change

ARIA Properties

aria-describedby

aria-flowto

aria-haspopup

aria-label

aria-labelledby

Create an Account

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CREATE A PASSWORD

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Styles Event Listeners DOM Breakpoints Properties \$scope »

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pluralsight

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Elements Network Sources Timeline » >_ ⚙️ 🖨️ ✕

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margin -

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pluralsight

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Styles Event Listeners DOM Breakpoints Properties \$scope »

Filter + -

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pluralsight

ARIA & Keyboard Control



- Many assistive technologies use keyboard like functionality
- Developers may forget or be unaware



TAB



SHIFT + TAB



Secondary Content



Tabbed Content

Tab 1

Tab 2

Tab 3

Tab 4





Secondary Content



Tabbed Content

Tab 1

Tab 2

Tab 3

Tab 4





Secondary Content



Tabbed Content





Secondary Content



Tabbed Content





Secondary Content



Tabbed Content





Secondary Content



Tabbed Content



The Spacebar Activates Controls

Enter Submits the
Default Action

https://developer.mozilla.org/en-US/docs/Web/Accessibility/Keyboard-navigable_JavaScript_widgets

Summary



ARIA = Accessible Rich Internet Applications

Developed by the W3C to bring accessibility and semantics to modern Web applications

ARIA roles vs. states & properties

Summary



Keyboard control is extremely important

Only use custom elements ARIA if absolutely necessary