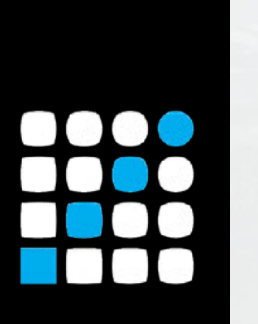




APACHE SLING & FRIENDS TECH MEETUP
10-12 SEPTEMBER 2018

AEM and Single Page Applications (SPAs)

Chris Millar, Adobe Systems



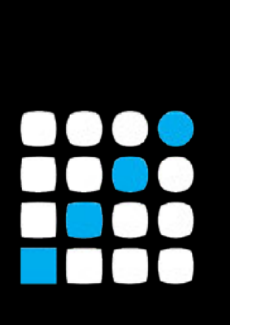
The screenshot shows the Adobe Creative Cloud website for teams. The main headline reads "Creative Cloud for teams A better way of working together." Below this, it states "With collaboration tools built into all your creative apps — from Photoshop CC to the new XD CC — it's easy to store, share, and sync assets securely and create amazing work anywhere you are." A "Learn more" button is present. Below the main section are three columns of information:

- Plans for teams of all sizes.** Compare Creative Cloud plans for business and choose the one that's right for your organization. (Compare now button)
- Hassle-free administration.** Creative Cloud for teams is built for business with simplified deployment and license management, robust security, and volume discounts. (Learn more button)
- Engaging user experiences.** Design, prototype, and share web and mobile experiences for your customers and business with Adobe XD CC, the all-in-one UX/UI solution. (Learn more button)

engineering manager
adobe.com platform

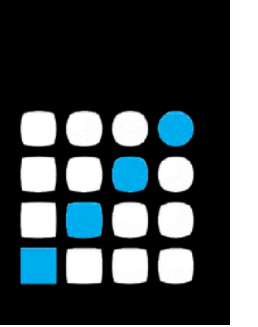
Here's the deal

- 1 What is an SPA?
- 2 What is the AEM SPA Editor?
- 3 How can we use it?
- 4 Hybrid (SPA-like) approaches.
- 5 Wrap up.



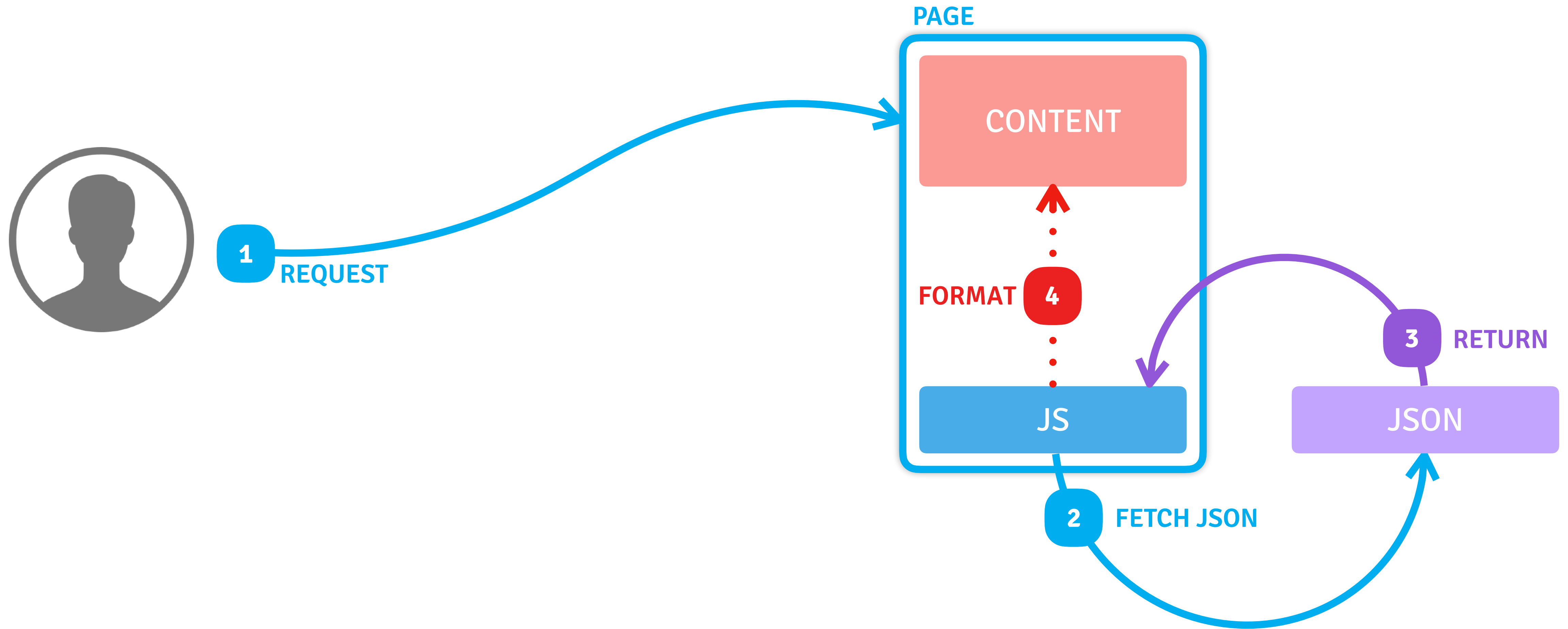
AdaptTo()

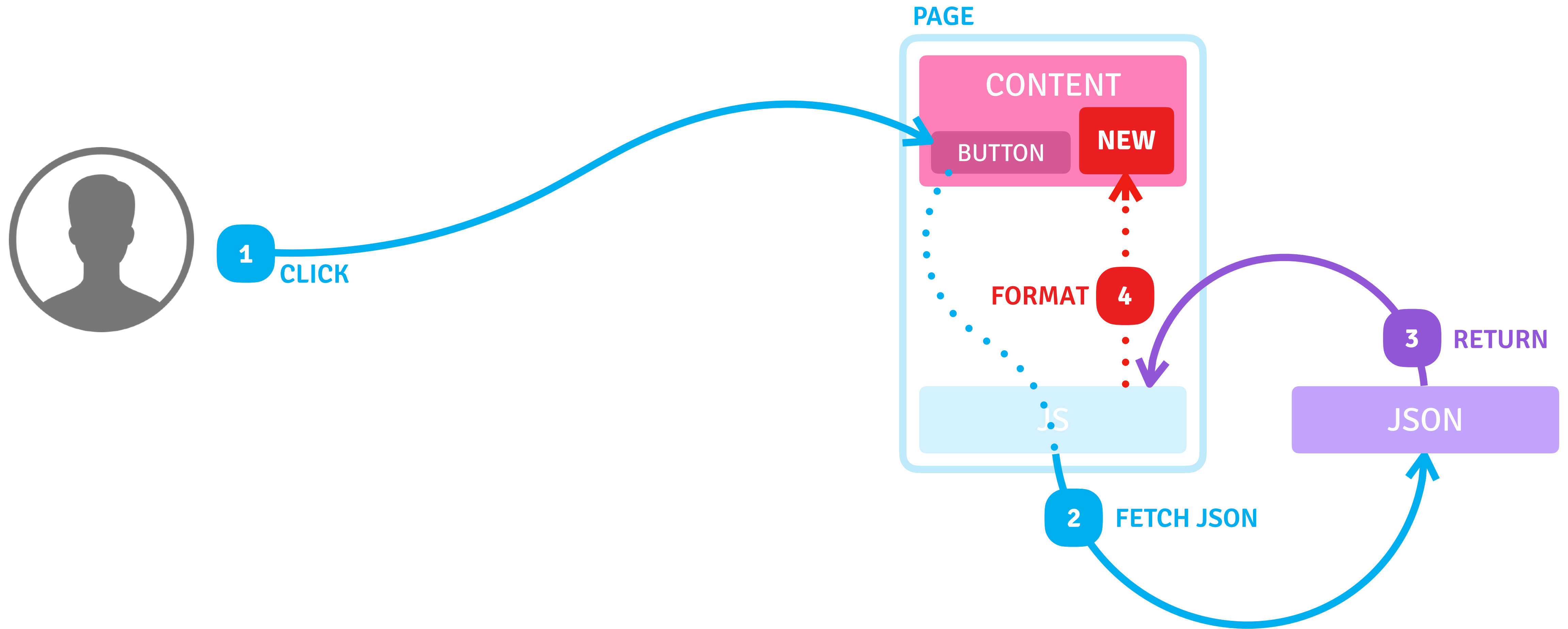
What is a Single Page Application?

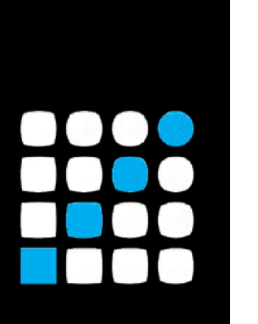


AdaptTo()

A webpage that can load content
without re-loading the entire page.







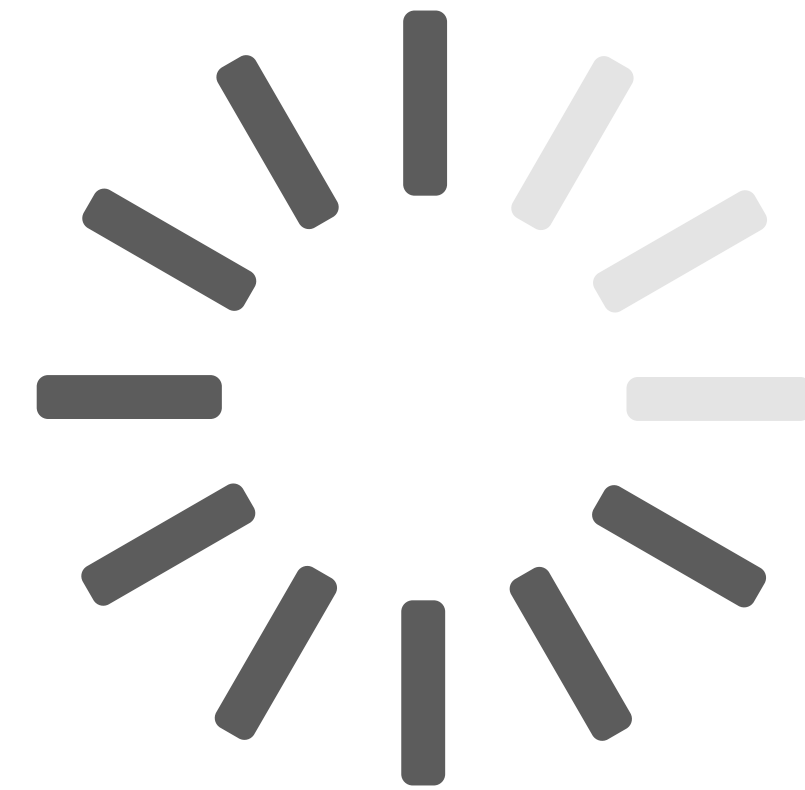
AdaptTo()

Why do I want this?

- Load time improvements
- Front-End developer productivity
- Sites feel more dynamic
- [Someone read a Medium post](#)

Why would I not want this?

- Initial page load can be slower
- 100% SEO coverage is desired
- Added complexity



#soapbox



AdaptTo()

Not everything is a nail when you get a new hammer.

The screenshot shows the Adobe XD website with the headline "The future of experience design. Now free." and a video player showing various user interface designs. Below the website, there is a smaller screenshot of the Adobe XD software interface with the text "Experience design. Redefined." and a short paragraph describing the tool's features.

Download free Adobe XD CC

Secure | <https://www.adobe.com/products/xd.html?promoid=PYPVQ3HN&mv=other>

Adobe

Creativity & Design Marketing & Analytics PDF & E-signatures Business Solutions Support Sign In

Xd ADOBE XD CC Features Resources Learn & Support System Requirements Compare Plans More Products Get XD for free

The future of experience design. Now free.

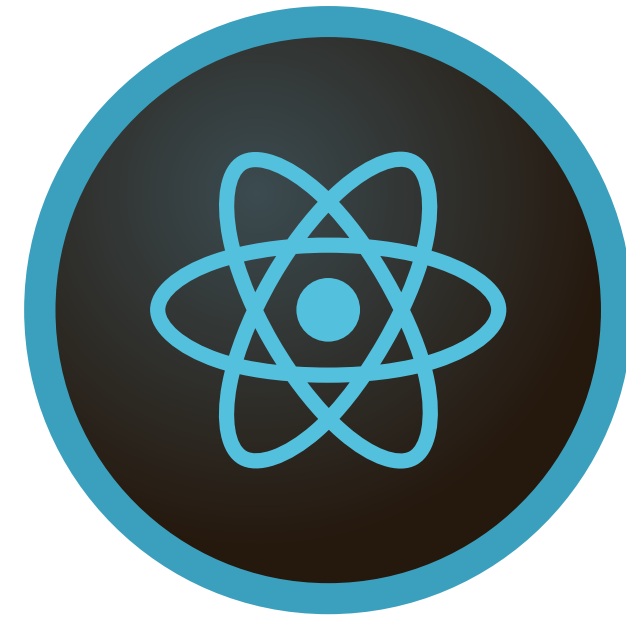
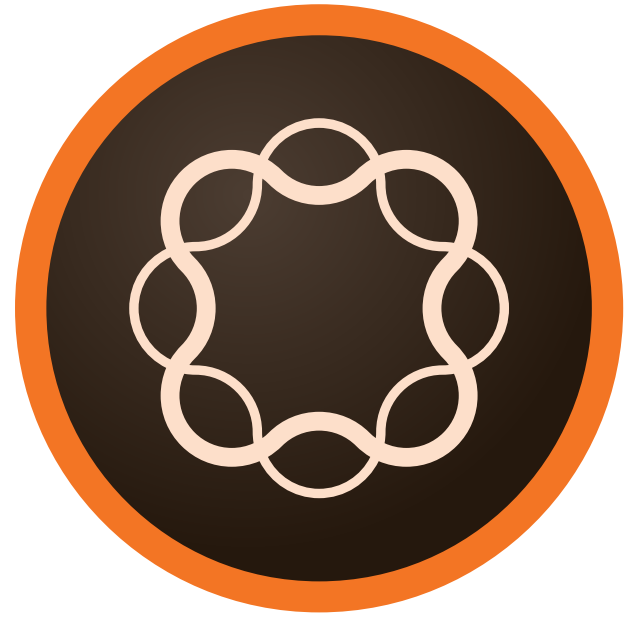
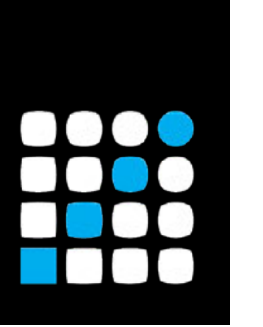
Go from concept to prototype with Adobe XD, the all-in-one UX/UI solution for designing websites, mobile apps, and more. With the new Starter plan for XD, it's fast, easy — and free.

Get XD for free

CEBIVA
PLAN YOUR NEXT ESCAPE
NEWSPAPER
NEWSPAPER

Experience design. Redefined.

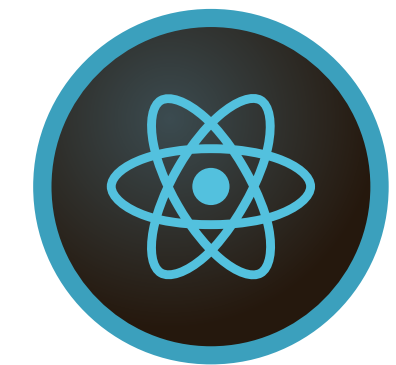
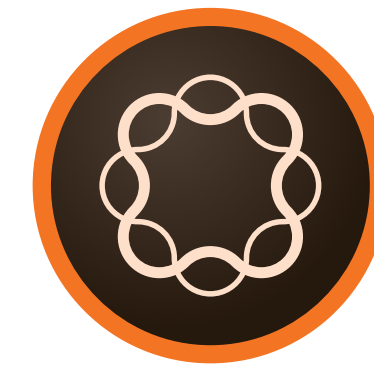
Adobe XD is built for today's UX/UI designers, with intuitive tools that eliminate speed bumps and make everyday tasks feel effortless. Get started with free UI kits, icon sets, and everything you need to create amazing user experiences.

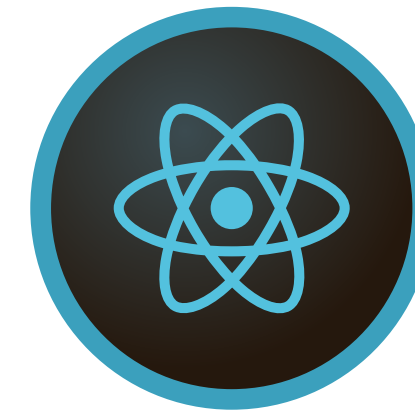
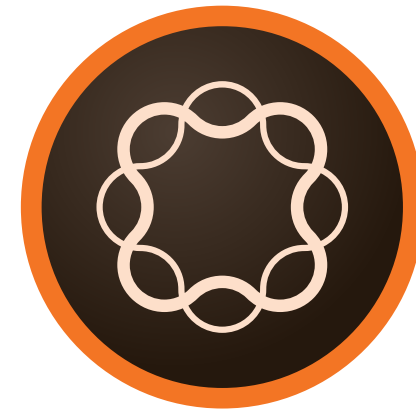


&

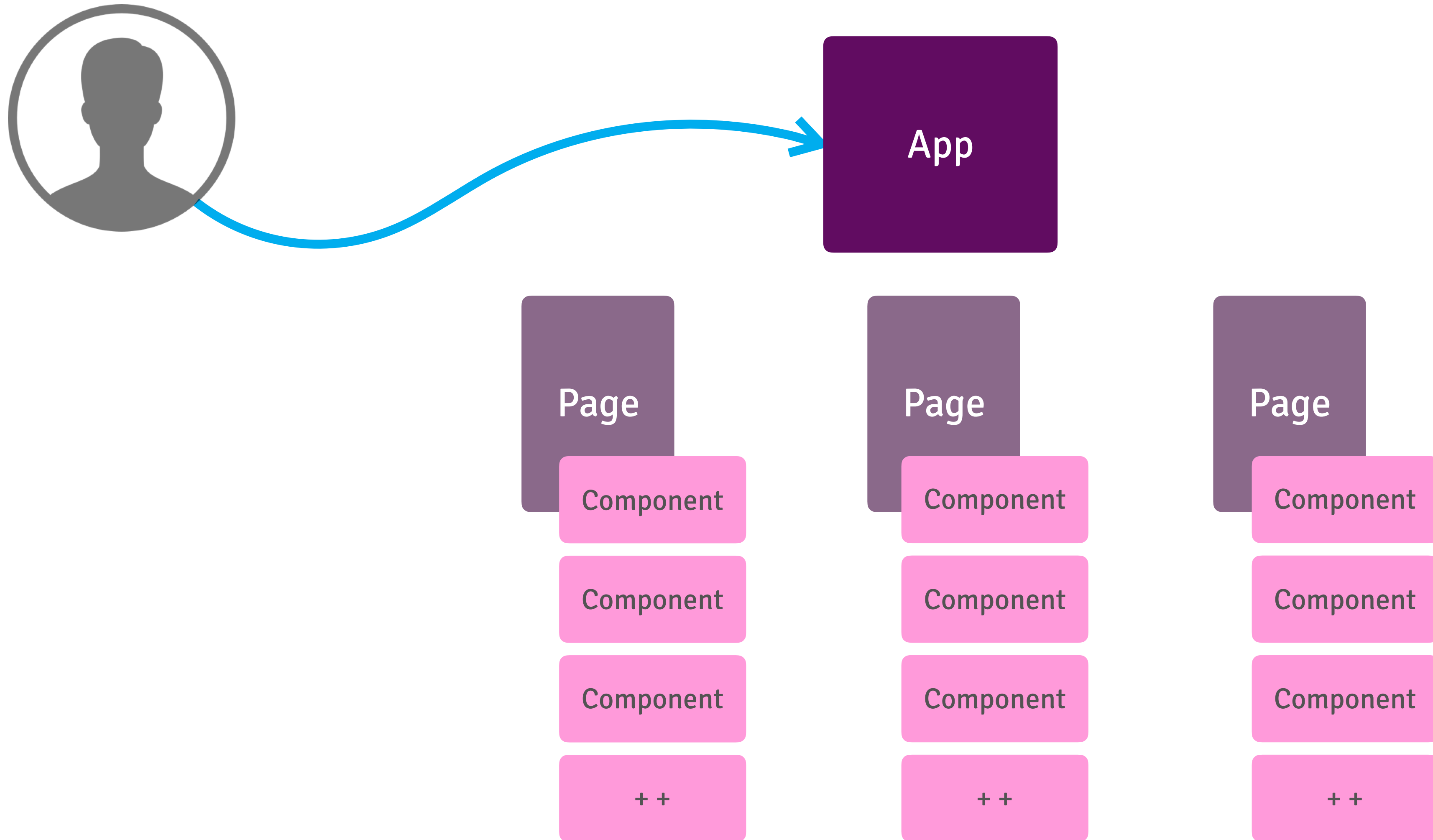


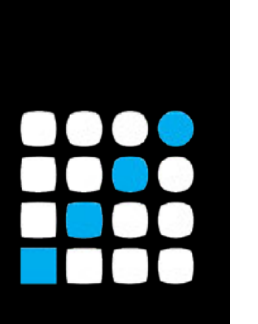
Combine AEM's rich content editing with all the benefits of SPAs.





Content-Type: ~~text/html~~; charset=utf-8
application/json;





AdaptTo()

AEM SPA Editor | Requirements*

- 6.4
- 6.4 SP1
- SPA Feature Pack (1.0RC+)

- We.Retail Journal

*at the time of this presentation



- AEM Bits
- Front-End Bits



- 1 Build Sling Models
- 2 Build Dialog
- 3 Write HTL (optional)

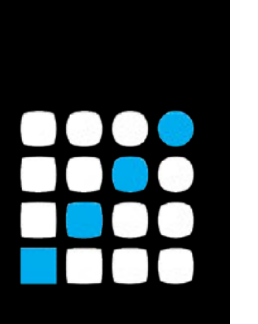
Built on the back of Sling Model Exporters...

`com.adobe.cq.export.json.ContainerExporter`

`com.adobe.cq.export.json.ComponentExporter`

`com.adobe.cq.export.json.ContainerExporter`

Get child elements. Used for **Page** and **LayoutContainer** components.



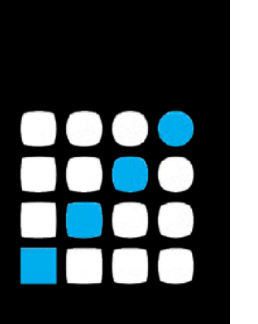
```
@Model(  
    adaptables = SlingHttpServletRequest.class,  
    adapters = {Page.class, ContainerExporter.class},  
    resourceType = PageImpl.RESOURCE_TYPE  
)  
@Exporter(  
    name = ExporterConstants.SLING_MODEL_EXPORTER_NAME,  
    extensions = ExporterConstants.SLING_MODEL_EXTENSION  
)  
public class PageImpl implements Page {  
    // Implement Stuff  
}
```

[VIEW SOURCE](#)



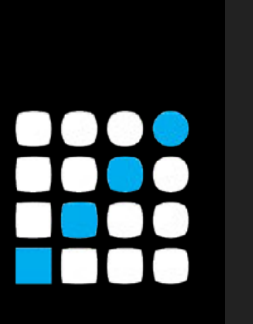
`com.adobe.cq.export.json.ComponentExporter`

Used for all other components.



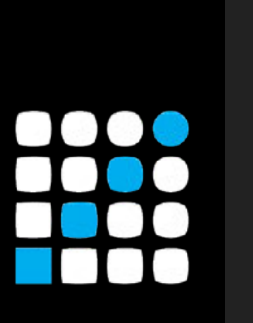
```
@Model(  
    adaptables = SlingHttpServletRequest.class,  
    adapters = {ComponentExporter.class},  
    resourceType = HelloWorld.RESOURCE_TYPE  
)  
@Exporter(  
    name = ExporterConstants.SLING_MODEL_EXPORTER_NAME,  
    extensions = ExporterConstants.SLING_MODEL_EXTENSION  
)  
public class HelloWorld implements ComponentExporter {  
    // Implement Stuff  
}
```

[VIEW SOURCE](#)



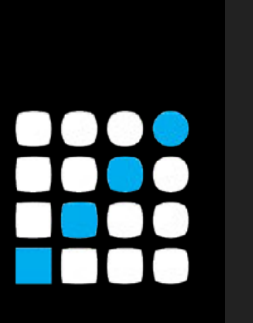
@adobe/cq-react-editable-components





App

```
import { Page, withModel, EditorContext, Utils } from  
@adobe/cq-react-editable-components
```

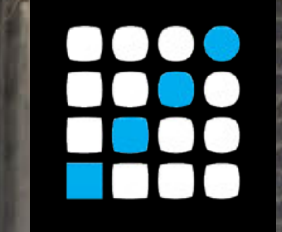
Page

```
import { Page, MapTo, withComponentMappingContext } from  
@adobe/cq-react-editable-components
```



Component

```
import { MapTo } from  
@adobe/cq-react-editable-components
```



Let's dig in.

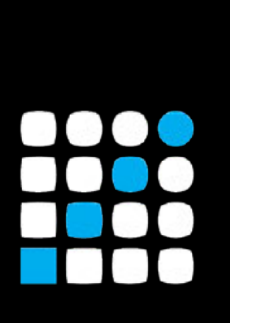


When does the AEM SPA Editor ship?

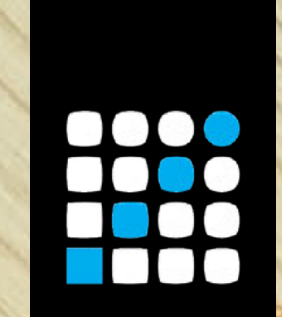
Very soon!

Does it have feature parity with HTL today?

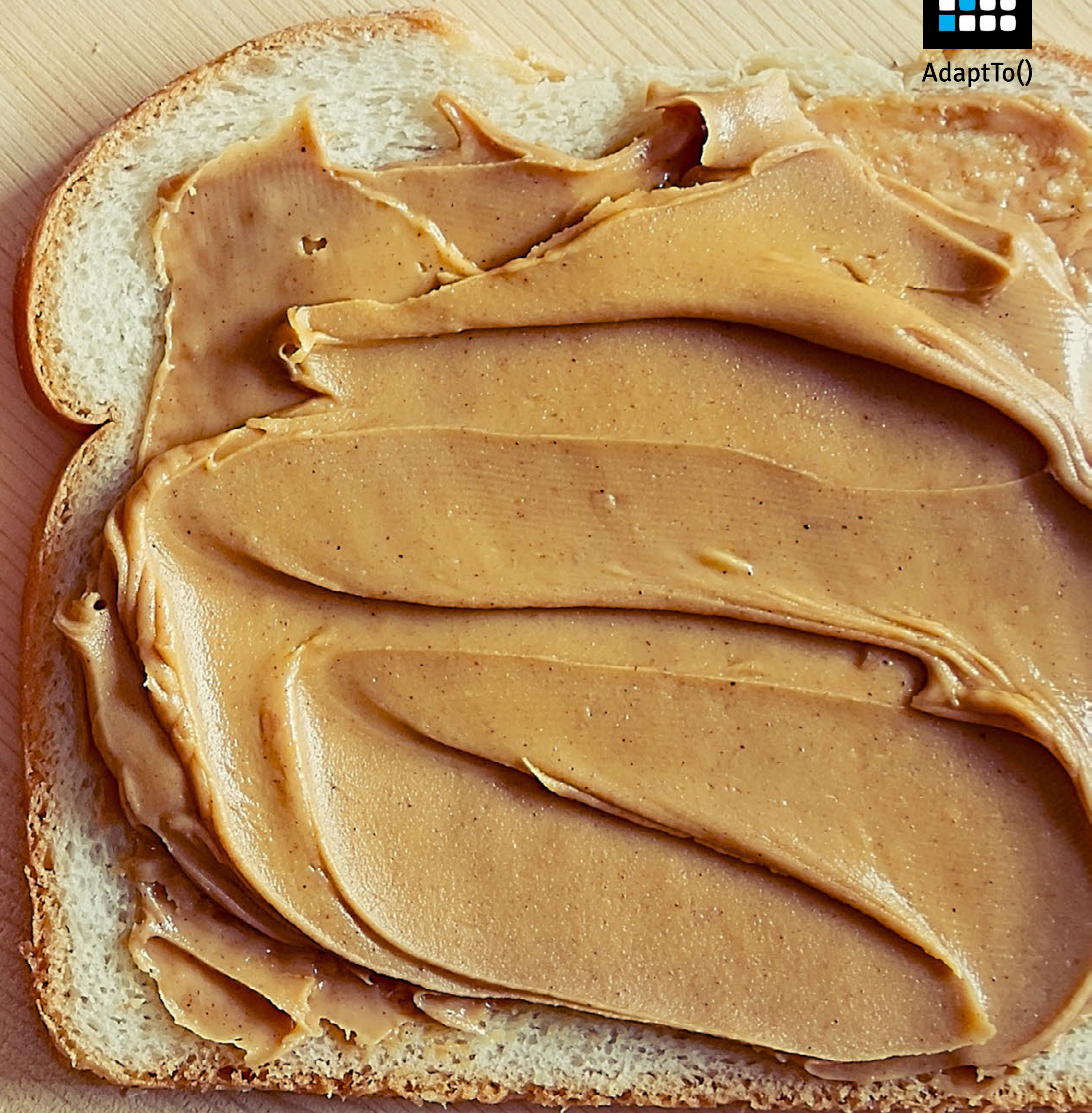
...

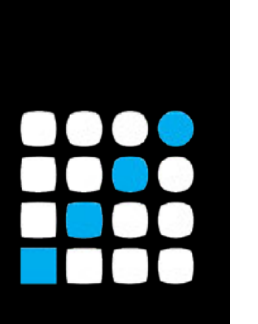


- Server-Side Rendering (coming soon!)
- Template Editor UI
- Targeting mode
- Context Hub integration
- Integrated Experience Fragments
- Multi-Site Management locking and unlocking
- Inline image editing
- Apply styles from the Style System
- Editors to undo-redo changes
- Time Warp
- Page aliases

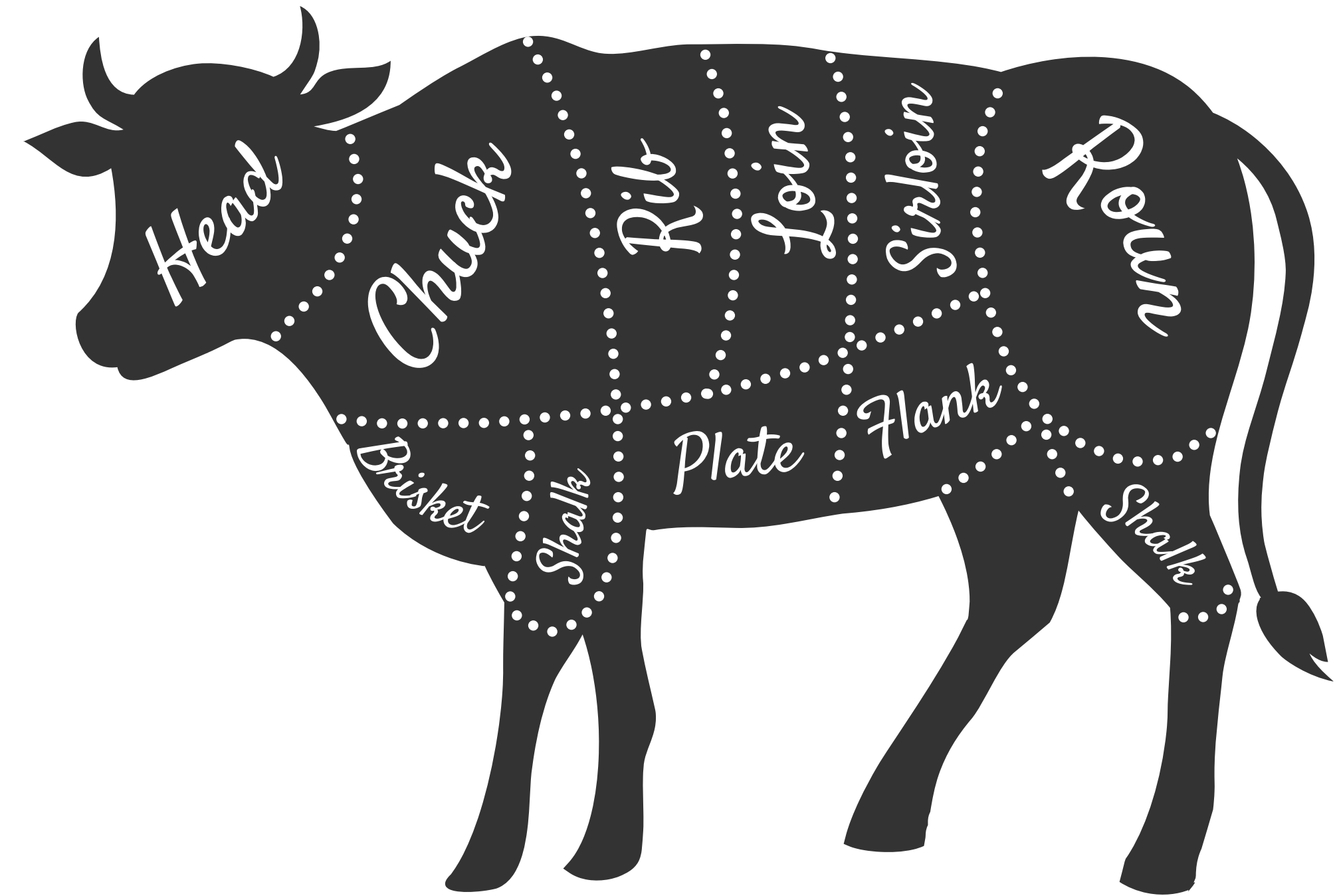


**Can I mix and match
HTL and SPA Components?
Not yet.**



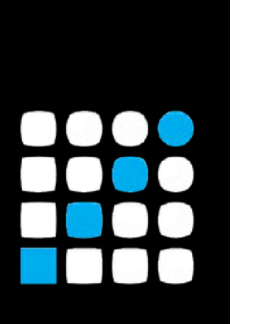


You have options.

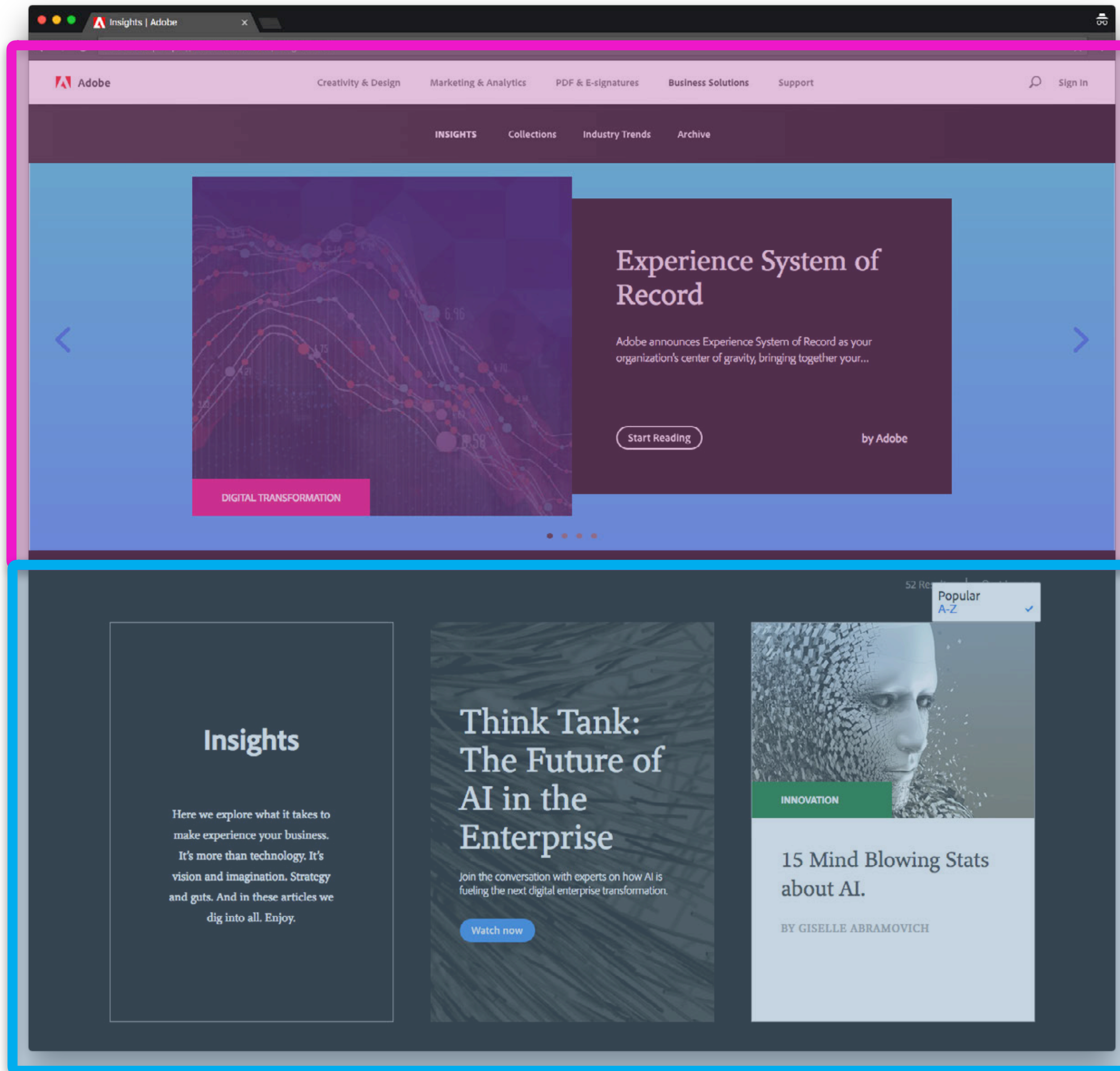


(I'm vegetarian)

www.adobe.com problems



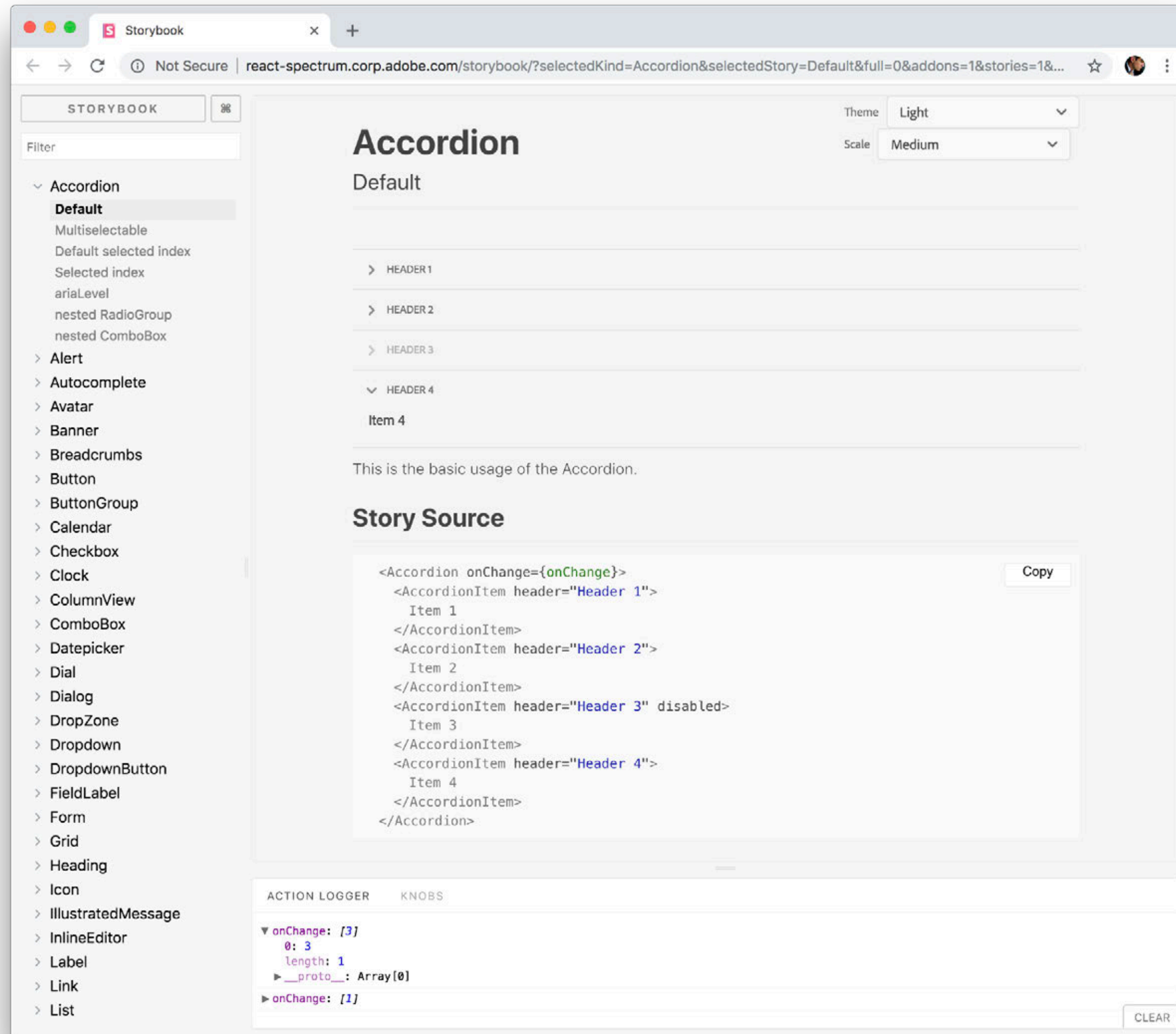
AdaptTo()



HTL

REACT

Pre-Built React Components



The screenshot shows the Storybook interface for an accordion component. The main area displays a visual representation of the accordion with four headers: 'HEADER 1', 'HEADER 2', 'HEADER 3', and 'HEADER 4'. The fourth header is expanded, showing 'Item 4'. Below the visual is the 'Story Source' code block, which contains the following JSX code:

```
<Accordion onChange={onChange}>
  <AccordionItem header="Header 1">
    Item 1
  </AccordionItem>
  <AccordionItem header="Header 2">
    Item 2
  </AccordionItem>
  <AccordionItem header="Header 3" disabled>
    Item 3
  </AccordionItem>
  <AccordionItem header="Header 4">
    Item 4
  </AccordionItem>
</Accordion>
```

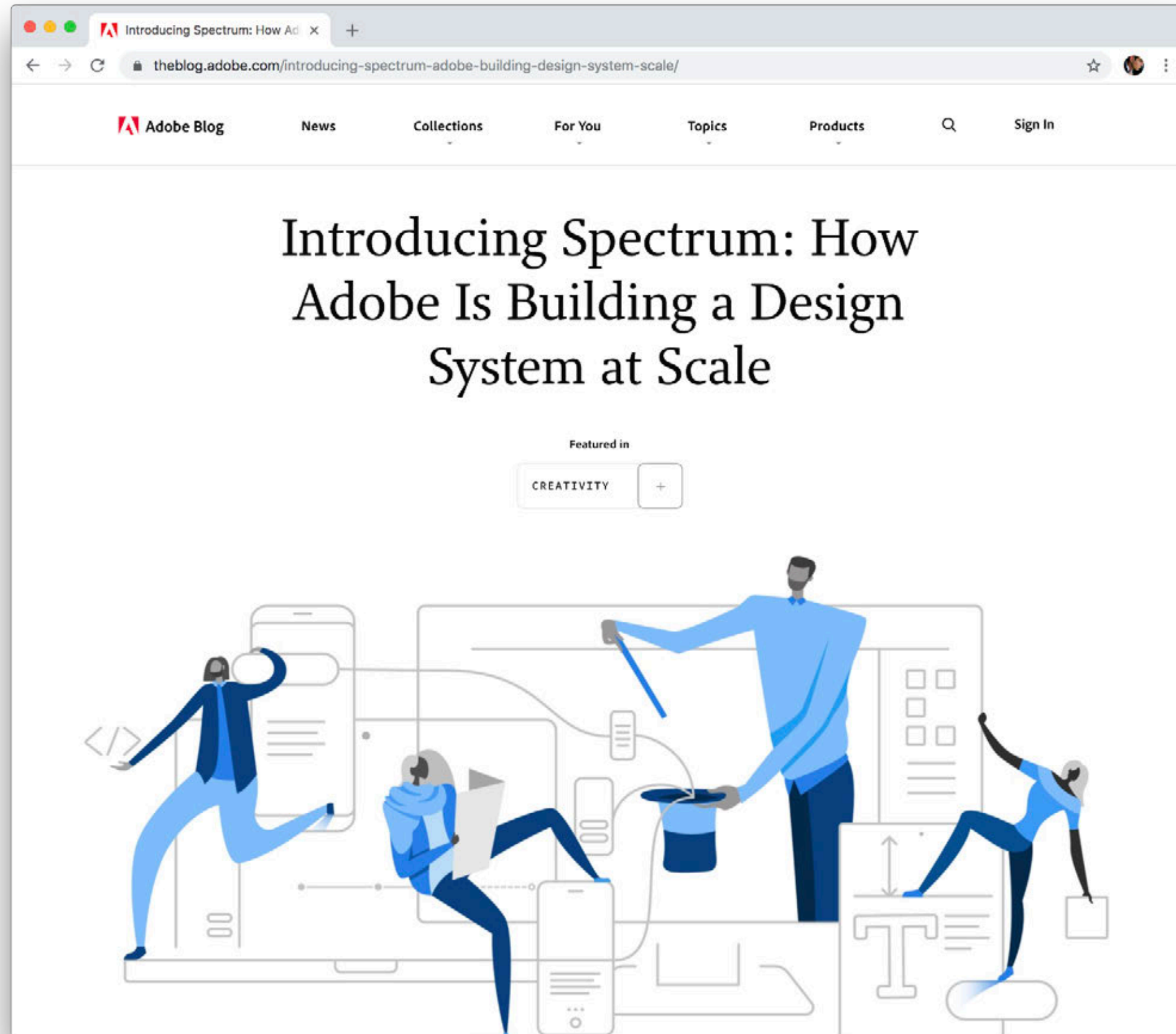
The 'ACTION LOGGER' at the bottom shows the state of the 'onChange' prop, indicating it is an array of length 1.

Can we use this code in AEM?

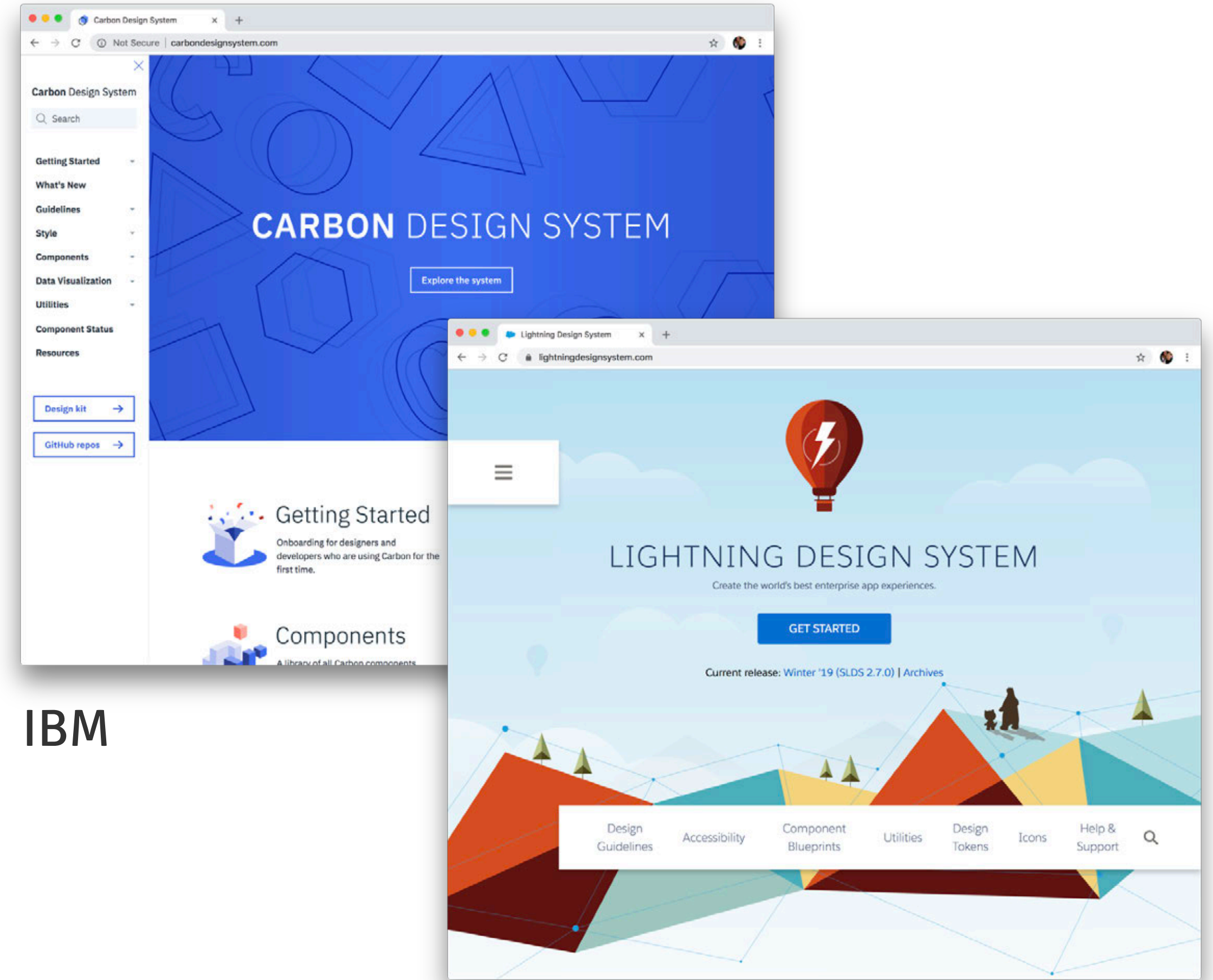
Design Systems



AdaptTo()



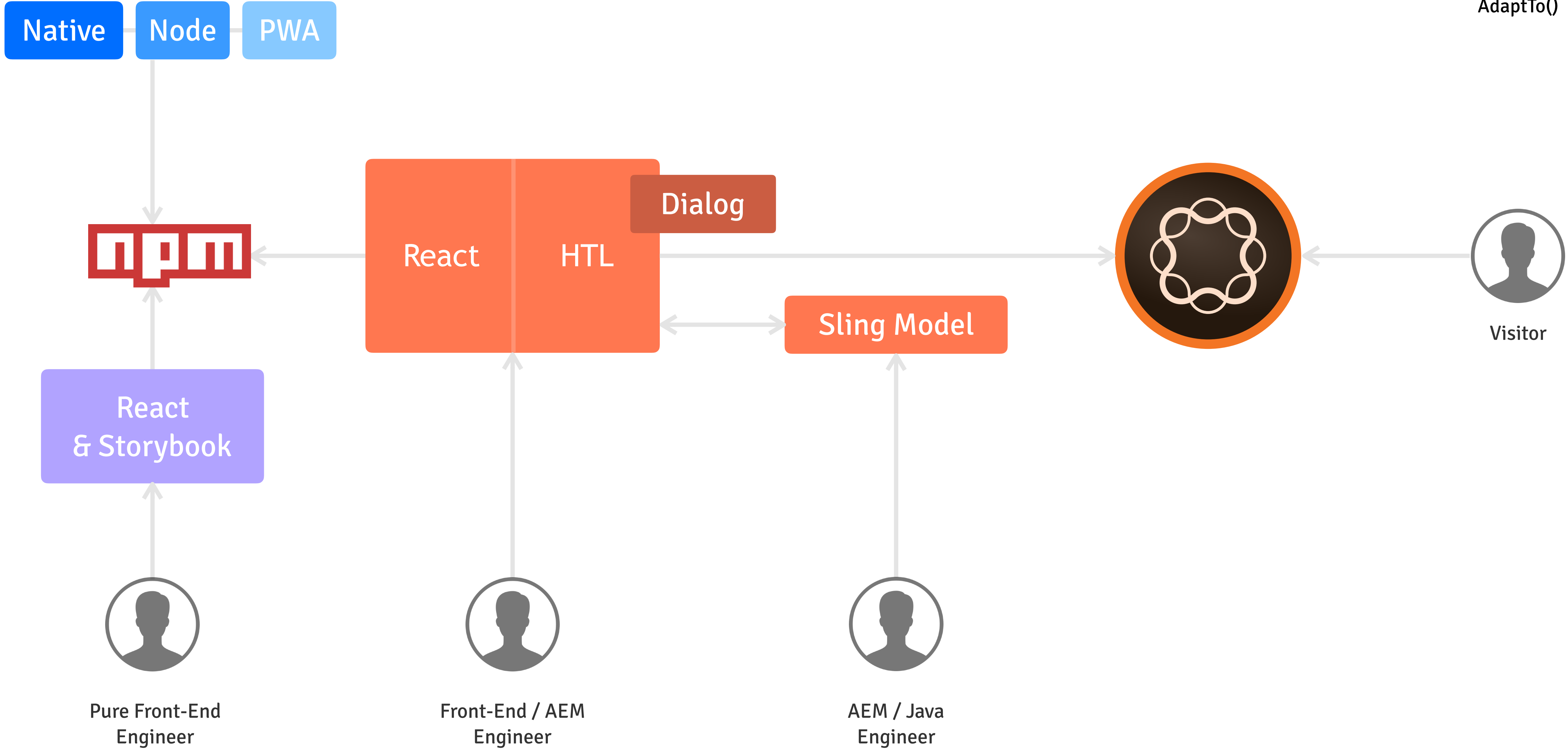
Adobe



IBM

Salesforce

Holistic Development Cycle



Separation of Concerns

UX / Design

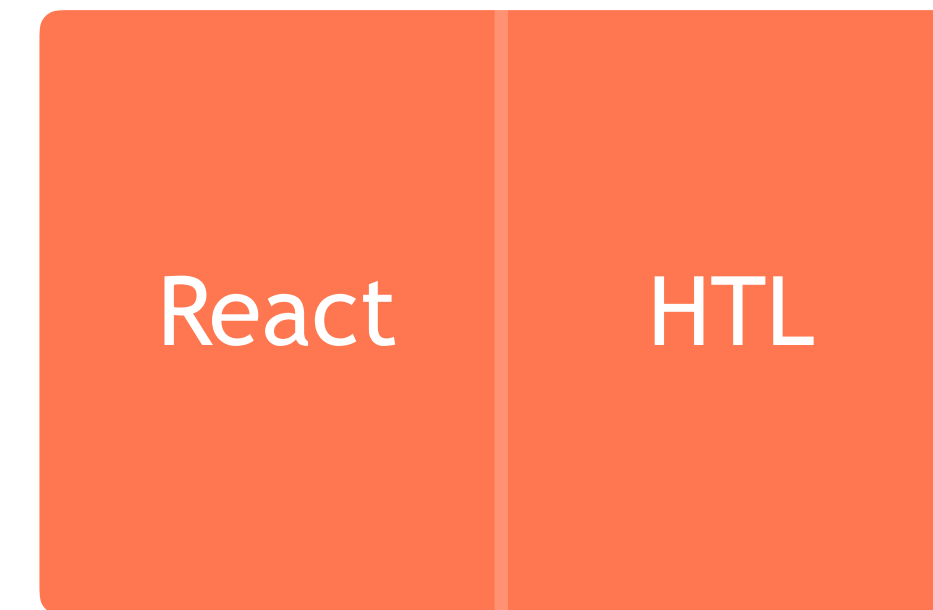
“Must animate like so.”



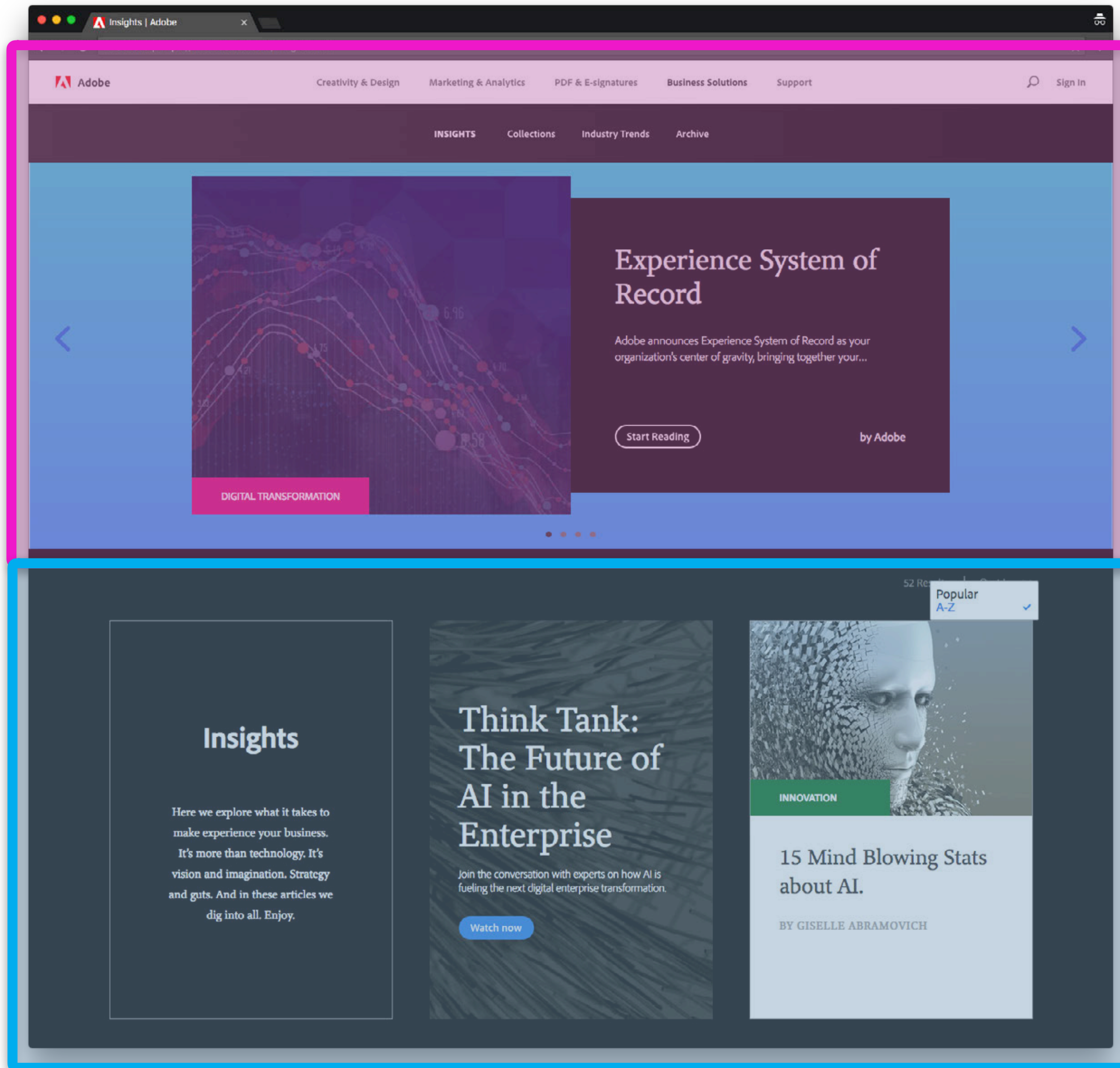
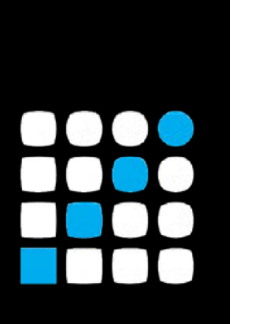
Pure Front-End
Engineer

Business Logic

“Must support deep linking.”



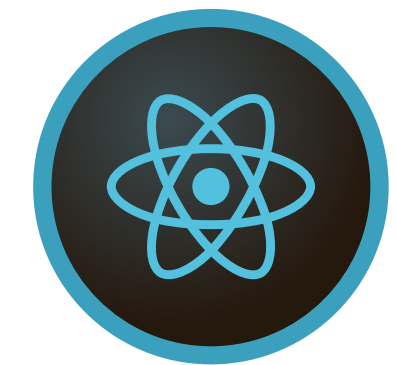
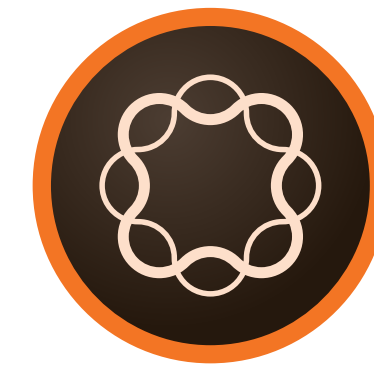
Front-End / AEM
Engineer



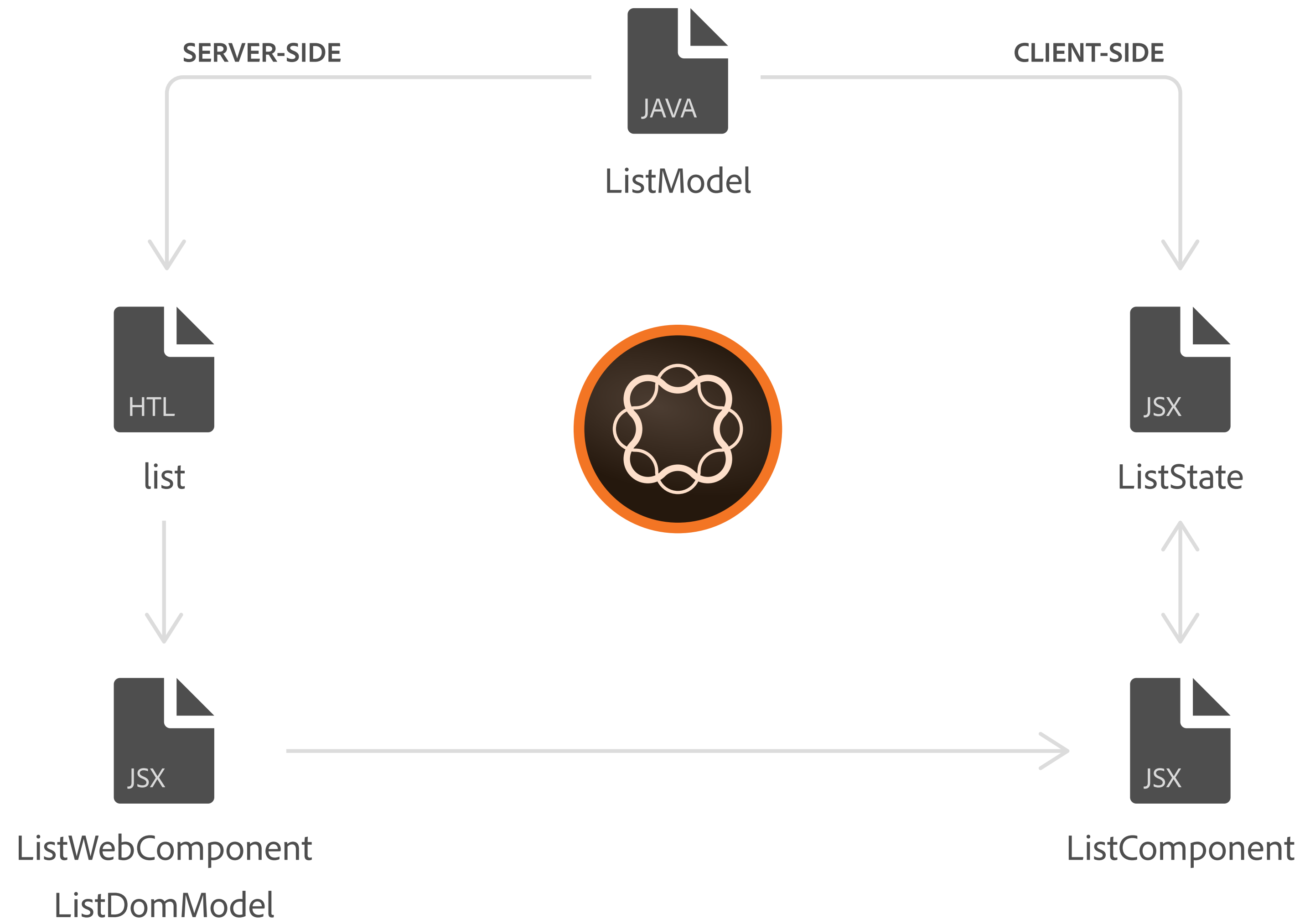
HTL

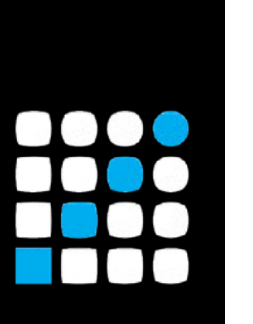
REACT

Build data-models for React Components
using HTL-rendered DOM.



So that's what we did...



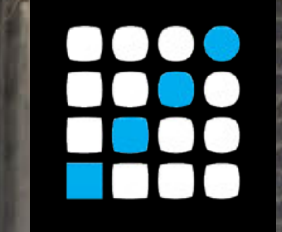


```
export default class HelloWorldDOMComponent extends DOMComponent {  
  this.nodeName = 'hello-world';  
  this.model = HelloWorldModel;  
  this.component = HelloWorld;  
}
```




```
class HelloWorldModel extends DOMModel {  
  constructor(element) {  
    super(element);  
    this.getDataAttribute('name');  
    this.getTextContent();  
    this.getChildDOMModel('foo', FooModel);  
  }  
}
```

```
export default class HelloWorld extends React.Component {  
  render () {  
    return (<React.Fragment>  
      <p>{this.props.text} {this.props.name}</p>  
      <p>{this.props.title}</p>  
      <Foo text={this.props.fooText} />  
    </React.Fragment>);  
  }  
}
```



Let's dig in.



Pros

Mix and match HTL and React.

100% SEO Coverage.

Write vanilla React components.

Cons

Two Data Models (Sling and DOM)

Not a full-blown SPA solution.



Every project is different.

You have many options
to solve your SPA needs.

SPA Editor Sign Up

[SPA Editor Walkthrough](#)

[Getting Started for Developers](#)

[Implementing a React Component](#)

[SPA Editor Architecture](#)

[SPA Editor Overview](#)

[SPA Blueprint](#)

[SPA Model Routing](#)

[SPA Page Component](#)

[Dynamic Model to Component Mapping for SPAs](#)

[React DOM Components](#)

Q & A