Introduction

- **Title:** Developer Services Consultant
  - **Email:** mark.steadman@deque.com
  - **Bio:** 6 years of web development experience, before Deque he was at a large insurance company as an accessibility software developer. Mark is an expert in JavaScript Frameworks and accessibility automation testing for developers.

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Agenda

- Quick React Accessibility Overview
- Myth of React and Accessibility
- General Accessibility Issues
  - Go through each of the main issues
  - Give solutions and guidance on how to remediate them
- Framework support for accessibility
  - Helpers
  - Testing helpers

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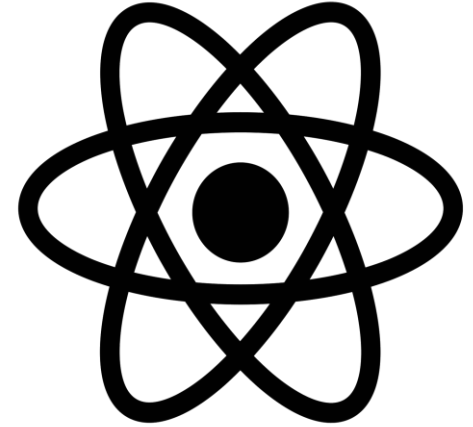
React and Accessibility Overview

- React has always been very conscious of accessibility, but unfortunately gets a bad reputation in the accessibility community because it falls under a JavaScript Framework (Single Page App.)

- JavaScript Frameworks typically loaded in a single page frame (body)

- Any changes within the page or between pages are 'injected' onto the page.
  - 'Pages' do not change (no refresh behind the scenes)
  - Not all content is loaded into the DOM on load of the page

- The idea is to speed up sites by putting more power on the client side.

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The Myth of Accessibility and React

- React has developed a stigma within the accessibility community that web applications created in React are not accessible.

- Lots of accessibility advocates, and even developers who develop in the framework, think that accessibility is a very big challenge that can be almost impossible to achieve.

- The reality is, React can be accessible as any other framework out there, it just takes a knowledge and the willingness to do so.

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General Accessibility Issues

- Page/View Titles
- Focus Management
- Keyboard Navigation and Events
  - Extra added markup
- Dynamically Added Content
  - The use of ARIA Live and role="alert"
- Component Libraries (packages)
  - Document & Heading Structure
  - Buttons, Tables, Links marked up without native html tags

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Component Library/Packages (npm)

- Document Structure
  - Many packages are not accessibility tested
  - Causing major issues in semantics of the page itself
- Often, heading structure and landmarks
- Many components only truly think about that components markup and not the effect it has on the others

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Component Library/Packages (npm)

- Buttons, Tables, Links, even Input boxes marked up not using native tags
  - Most packages try to make the most out of using CSS to design "the next best looking item" or the "slick design"
  - Choosing ease of use for user (developer)

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Component Library/Packages (npm)

- Tables made with <div>

```
<h2>Phone Numbers</h2>
<div class="rTable">
  <div class="rTableRow">
      <div class="rTableHead"><strong>name</strong></div>
      <div class="rTableHead"><span style="font-weight:bold;">Telephone</span></div>
      <div class="rTableHead">Birthdate</div>
</div>
```

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Accessibility within Framework

Accessibility support cont.

- **React-axe**
  - https://github.com/dequelabs/react-axe
  - Deques wrapper for accessibility testing within your react project
 - Simple as this:

```
var React = require('react');
var ReactDOM = require('react-dom');

if (process.env.NODE_ENV !== 'production') {
  var axe = require('react-axe');
  axe(React, ReactDOM, 1000);
}
```

  - Then once this runs in dev environment, the errors that axe finds will be logged in your Chrome Devtools console everytime.

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Accessibility support cont.

- **Eslint-plugin-jsx-a11y**

- ESLint plugin that identifies and enforces a number of accessibility rules directly in your JSX.
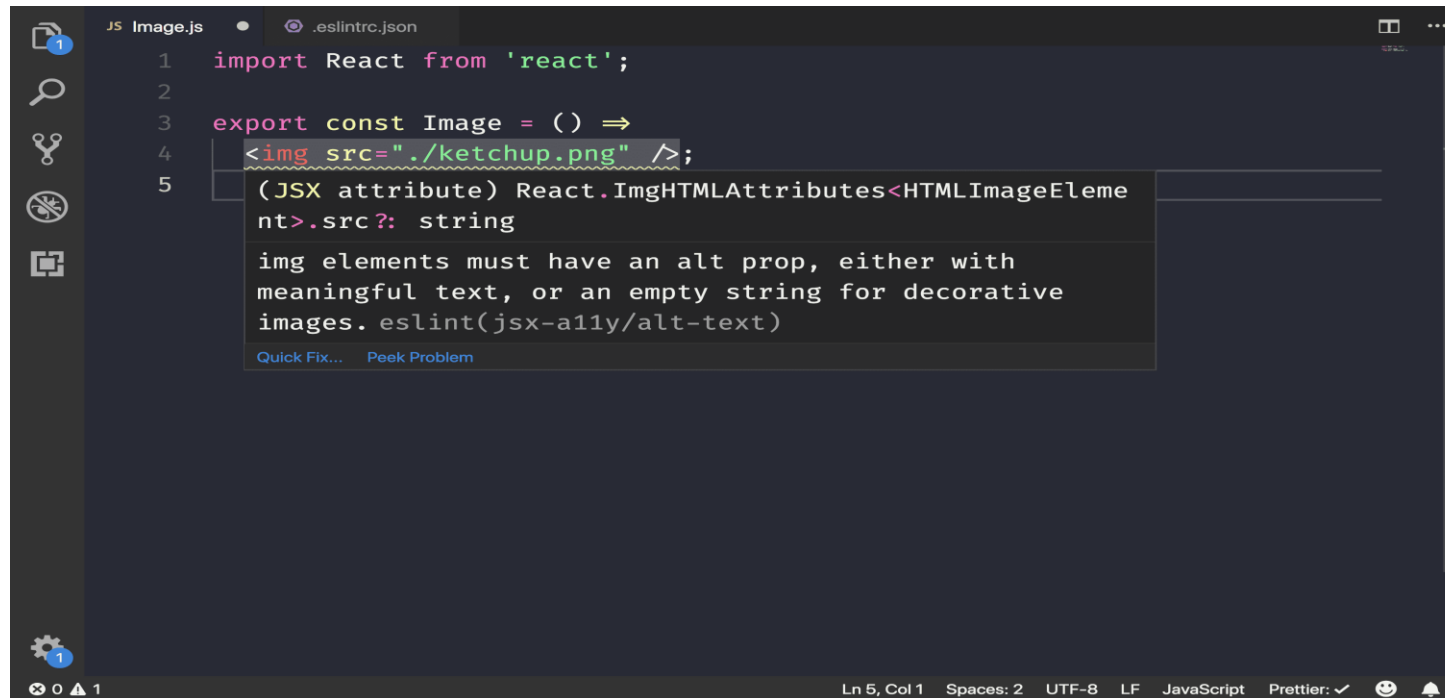
Accessibility Packages

- Reach UI → https://reacttraining.com/reach-ui/
  - Accessible widgets that are simply plug and play are completely accessible!
  - Widgets include
    - Accordion
    - Dialogs
    - Tabs
    - Tooltips

- Semantic UI – React → https://react.semantic-ui.com/
  - Allows for easy creation and integration of inputs and widgets which is translated into semantic HTML

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In Summary

Summary

- React can be an accessible application framework with the right knowledge and the right know-how.

- If we continue to spread knowledge and awareness of the issues that come with JavaScript frameworks like React, and also teach and guide others on how to remediate these issues, there is no limit as to how accessible this framework can be!

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