Decision Analysis Report - Front End

Project Name: Tresearch
Application Type: Web Application

Trial By Fire
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Purpose

The purpose of this document is to recommend a framework or library that will provide a front end framework/library for our application.

Technology Comparisons

- Angular version 13.1.1
    - Open Source framework used to build mobile and desktop web applications. Angular uses html and typescript.
- React version 17.0.2
    - Open source front end Javascript framework used to build user interfaces for large web applications.
- Vue version 3.2.20
    - Open source front end Javascript framework used to build interfaces and single-page applications.

Metrics

- Ability to show hide views
    - Necessary to hide or show content based on the user's needs
- Ability to invoke Code When Mouse is Dragged
    - Necessary for dragging through the tree portal UI
- Ability to share data across views
    - Necessary for sharing data between views or components

Analysis Between Angular, React and Vue

	Angular Framework	React Library	Vue Framework
Show/Hide Views (0.25)	Yes, but must nglf (0.25)	Yes, using setVisible and style properties (0.75)	Yes, using v-if or v-show. Allows for different amount of work (1)
Invoke code when mouse is dragged (1)	Yes* (0.25)	Yes, using ondrag, onDragStart, onDragEnd (1)	Yes, using mousemove and mousedown. (0.5)
Shares data across views (0.75)	Yes, parent to child via input, child to parent using view child or output, without direct connection can use BehaviorSubject component (1)	Yes, can pass data from parent to child using prop, child to parent using callback and states, between siblings using the above features. (0.75)	Yes, can pass data from parent to child, child to parent using custom events, and application shared state using Vuex. (0.50)
Frequency of updates	6 updates within 3	17 updates within 3	2 updates within

(0.5)	years (0.5)	years (1)	3 years (0.25)
Total:	2	2.25	2.125

*Through the use of an external component

Recommendation

Based on the analysis between Angular.JS, React and Vue.js, React is the clear choice based on its performance in our metrics. Since we care most about invoking custom code when dragging, we emphasized the score more than the others. While Vue performs similar to React, the frequency of updates means that React should be future proof.

Angular
https://www.positronx.io/angular-8-drag-and-drop-tutorial-with-example/

React
https://www.npmjs.com/package/react-d3-tree
https://codesandbox.io/examples/package/react-d3-tree
https://reactjsexample.com/an-elegant-search-field-component-for-react/
https://www.algolia.com/doc/guides/building-search-ui/what-is-instantsearch/react/
https://reactjsexample.com/a-react-ui-components-library-for-building-search-experiences/
https://mavtipi.medium.com/react-mouse-events-clicking-dragging-and-dropping-with-examples-b34513bc9a75

Vue
https://vuejsexamples.com/a-flexible-vue-tree-chart-using-canvas-and-svg/
https://5balloons.info/show-hide-elements-using-conditional-in-vuejs/
https://javascript.plainenglish.io/create-a-drag-and-drop-app-with-vue-3-and-javascript-1b96a6a28f38