

Week 13: Research

1. What are some competitors/alternatives to React? What makes them different? List at least 2.

Some of the most popular alternatives and competitors to React are: Angular and Vue.js

Angular is a framework, while React is a library. This means that Angular provides a complete solution for building complex web applications with data binding, routing, testing, and more, while React only focuses on the view layer and requires additional libraries or tools for other features.

Vue.js is a framework, while React is a library, uses HTML templates, while React uses JSX, supports two-way data binding, while React supports one-way data flow, has a smaller size and faster performance than React, has more built-in tools and features than React.

2. What is React's virtual DOM, why is it important, and how does it work?

React's virtual DOM is a concept that allows React to update the UI efficiently and avoid unnecessary DOM manipulations. It works as a representation of the real DOM, updates the virtual DOM when the state changes, Whenever a user action or a data change triggers a re-render of the UI, React updates the entire virtual DOM with the new state. React compares the new virtual DOM with the previous one, This way, React can identify which virtual DOM objects have changed and need to be updated on the real DOM. React updates only the changed objects on the real DOM, This avoids wasteful and expensive DOM operations and improves performance and efficiency.

3. What is Webpack and what problem does it solve?

Webpack is a tool that helps developers bundle JavaScript files and other assets for the web. It solves the problem of managing dependencies, optimizing performance, and simplifying development workflows. Webpack treats all files and assets as modules it can handle different types of modules, such as JavaScript, CSS, HTML, images, fonts, etc., by using loaders and plugins. Webpack builds a dependency graph of all modules it starts from one or more entry points (the main JavaScript files that run in the browser) and follows the import or require statements to find all the modules that are needed for the application. Webpack bundles all modules into one or more output files can create multiple bundles for different pages or features, and split them into smaller chunks that can be loaded on demand. Webpack also optimizes the bundles by applying various techniques, such as minification, tree shaking, code splitting, etc.

4. What is your favorite thing you learned this week?

This week's standout discovery has been the React framework. It's a powerful tool for organizing components, making it much easier to target and fix any issues. With React, you can isolate individual components and troubleshoot them without having to test the entire system, saving you valuable time and effort.

URLS:

<https://blog.back4app.com/top-10-react-alternatives/>

<https://www.upwork.com/resources/angular-vs-react>

<https://www.sitepoint.com/vue-vs-react/>

<https://blog.logrocket.com/virtual-dom-react/>

<https://www.codecademy.com/article/react-virtual-dom>

<https://webpack.js.org/guides/getting-started/>