WeCasa

Frontend Framework DAR Report

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Github Repository:

https://github.com/githelsui/WeCasa

Frontend Framework DAR Version Table

Version	Description	Date
1.0	Initial DAR - Use Cases - Technologies, Metrics, Evaluation	12/05/2022
1.1	Content Improvements - Reduced weights - Added more quantifiable metrics based on business needs	12/07/2022
1.2	Content Improvements - Adjusted intervals for more precise scores -	12/11/2022

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Business Needs & Metrics

Cost: WeCasa wants to reduce our technology costs to $0. So any frontend framework that requires an upfront cost is not ideal, and will be scored as a 0.
Browser Compatibility: It is important that the technology is compatible with Chrome, which is the primary browser that WeCasa will be run on.
Storing State Across Views: The ability to efficiently store states across views is important to our single-page application as WeCasa will implement multiple views and sections. This efficiency is measured based on the number of available built-in resources the framework provides.
Security: Security is a primary concern for the frontend layer of our application. Security concerns in this layer include SQL injection, DoS attacks, cross-site scripting (XSS) attacks, and session hijacking. The score in this category will be based on whether the frontend framework provides protection against all of these concerns.
Scalability: Since we anticipate WeCasa to expand to other markets and audiences, we want every low-level component of our application to be scalable. The score for this category will be based on whether the frontend framework is reusable, simple, and follows the MVC architecture.
DOM: The score for this category will be based on whether the frontend framework uses a virtual DOM, which allows for improved performance at a large scale, as opposed to a real DOM, which increases performance time as the application scales.
Single-Page Application Support: The score for this category reflects the framework's extensibility of libraries and tools in order to support the development of a single-page application. A high score for this category is necessary for WeCasa as it will be a single-page web application.

Technology Comparison

Scale: 1-1.75 with intervals of 0.25, based on how influential that metric is in our decision making. Higher numbers indicate more importance.
Scores: 0-1 with intervals of 0.2, based on how well they match our desired use case.
Total: Scores for each technology will be summed and multiplied by the metric scale.

Metrics	ReactJS	VueJS	AngularJS
Cost - **1**	Free - **1**	Free - **1**	Free - **1**

Security - **1.5**	Auto-detection of injection attacks, auto-escaping features, for high client-side security - **1**	Vulnerability reports in XSS in Vue templates (*Security*, n.d.) - **0.4**	Uses web services or RESTful APIs to interact with servers, optimizing security by guarding against unauthorized access (Das, 2021) - **1**
Chrome Compatibility - **1**	React Cross Browser compatibility ensures components can be used across different platforms (*Browser compatibility*, 2022). - **1**	Offers cross-browser compatibility, supports all versions of FireFox, Chrome, Safari, etc. (*Browser compatibility*, 2022). - **1**	Browser compatibility issues when using certain Angular components (*Angularjs overcoming*, 2022). - **0.4**
Storing State Across Views - **1.5**	Provides a library, Redux Persist, to automate the persisting and hydrating of a state (Prasanjith, 2021). - **1**	Provides a library, Vuex, for state management - **1**	Difficulty maintaining states without some form of hacks with the ui-router (Scholz, 2014). - **0.4**
Scalability - **1**	Reusable, splittable components allowing for modularity and scalability - **1**	Allows faster improvement due to framework's lightweight and simple structure - **1**	Uses MVC structure, allowing for efficient maintenance - **1**
DOM - **1**	Uses virtual DOM - **1**	Uses virtual DOM - **1**	Uses real DOM - **0.2**
Single-Page Application Support - **1**	Framework provides extensive libraries to support SPA development such as React Routers (Chinnathambi, n.d.). - **1**	Vue supports SPA development, however as features and pages increase, the framework's SPA grows bulkier and complex (*Vue.js spa*, 2022). - **0.5**	Angular supports SPA development with extensive features, templates, modularization, etc. (*What makes angularjs*, n.d.). - **1**
Total	**8.0**	**6.6**	**5.2**

Recommendation

ReactJS

Glossary

Term	Definition
DoS	Denial of Service
FCP	First Contentful Paint
FID	First Input Delay
DOM	Document Object Model
LCP	Largest Contentful Paint
MVC	Model View Controller
OS	Operating System

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