ABSTRACT

STUDI KOMPARATIF FRAMEWORK REACT DAN SVELTE: PARAMETER PERFORMANSI PADA SINGLE PAGE APPLICATION

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One popular approach in web development is the Single Page Application (SPA), which allows web page views to be dynamically updated without the need to refresh the entire page. In developing SPAs, the selection of the appropriate framework plays a crucial role in ensuring the performance and effectiveness of the web application. However, developers often face challenges in choosing the right framework due to the multitude of available options and limited information regarding the performance of these frameworks. This research aims to compare the performance of two popular frameworks, namely Svelte and React, in developing SPA-based web applications. The performance of both frameworks is evaluated based on various performance variables, including First Contentful Paint (FCP), Largest Contentful Paint (LCP), Cumulative Layout Shift (CLS), Speed Index (SI), Total Blocking Time (TBT), and Page Weight. Testing is conducted by creating web applications built with React and Svelte and utilizing Webpagetest as a performance monitoring tool. In the performance testing of the React and Svelte frameworks, it was found that React demonstrates superior performance in several aspects. React exhibits a lower Large Contentful Paint (LCP), indicating a better ability to render significant elements swiftly. The interactive responsiveness of React's web pages also surpasses that of Svelte, with a lower Total Blocking Time (TBT), implying quicker responsiveness to user interactions. Furthermore, React boasts a lower Speed Index (SI), signifying its capability to visualize page content more rapidly. Both React and Svelte display low Cumulative Layout Shift (CLS) values, indicating minimal disruptive layout changes affecting user experience. Additionally, Svelte achieves smaller page sizes, showcasing efficiency in producing lighter file sizes. In conclusion, React outperforms Svelte in terms of responsiveness, display speed, and page size within the scope of this testing. The findings contribute to a deeper understanding of the performance characteristics of these frameworks, aiding developers in making informed decisions when selecting a framework for SPA development

.**Keyword: *Javascript, React, Svelte,SPA (Single Page Application), Web***