Abstract

The Fraud Deterrence Propeller (FDP) V.2 application was developed to support the prevention and detection of fraud in financial reports through the application of modern web technologies. This research focuses on implementing Client-Side Rendering (CSR) using the Next.js framework from the frontend side to enhance user interface performance and user experience. The development process applied Agile methodology, with Tailwind CSS for consistent UI/UX design implementation and TanStack Query to optimize data fetching and client-side caching. Performance was evaluated through load time testing across multiple application pages under data loads of up to 1000 entries. The test results indicate that all pages meet the Non-Functional Requirement (NFR-01) standard, with an average page load time of under 3 seconds on both Google Chrome and Microsoft Edge. These findings confirm that the CSR approach significantly improves page load efficiency, supports real-time data processing, and maintains interface stability under various load conditions. This study demonstrates that FDP V.2 serves as a reliable frontend solution for web-based fraud risk detection.

Keywords: *Client-Side Rendering*, *Next.js*, Fraud Detection, Load Time, *TanStack Query*, *UI/UX*