

## **Abstract**

**This research compares the web application development process with manual and AI-generated approaches, focusing on speed, ease of maintenance, and code duplication. The main objective of the study was to evaluate the time efficiency, maintainability, and code duplication rate of both approaches. The methodology used included manual and AI-assisted web application creation, followed by time testing and code analysis using SonarQube. The application creation process consisted of registration, login, dashboard, and data selection. The results showed that the AI-generated approach was significantly faster in code generation compared to the manual approach. However, although AI-generated speeds up the process, the generated code tends to have a higher duplication rate and more issues to fix. In contrast, the manual approach, while taking longer, generates code with lower duplication and is easier to maintain. The conclusions of this study emphasize the importance of considering the balance between time efficiency and code quality when choosing a software development method. This research provides insight into the impact of using AI in software development and how the transition between AI-generated and manual approaches can affect the development process.**

**Keywords: Web Application Development, AI-generated Code, Manual vs AI-generated Method, Time Efficiency, Maintainability, Code Duplication, SonarQube, Static Code Analysis, Software Development Comparison.**