

ABSTRACT

The Community Service Program (KKN) at Universitas Diponegoro still encounters challenges in managing student attendance. The use of manual attendance methods, such as signature-based attendance lists or written reports submitted to field supervisors, is prone to reporting delays, data manipulation, and difficulties in real-time monitoring. These issues indicate the need for a digital attendance system that supports more structured and reliable attendance management. This study aims to develop a *mobile* based KKN student attendance system integrated with a web application using the ICONIX *Process* method, which consists of requirements analysis, analysis/preliminary design, detailed design, and implementation. The system incorporates face recognition technology for attendance authentication and the Global Positioning System (GPS) for attendance location verification. The *mobile* application is developed using Flutter, while the web application is built using the Laravel framework and a MySQL database, with data communication implemented through REST API and authentication using JSON Web Token (JWT). The system also provides a web *dashboard* to facilitate administrators and field supervisors in monitoring student attendance. System testing is conducted using black-box testing and functional testing of the face recognition feature and GPS validation to ensure conformity with the defined system requirements. The results indicate that the developed system meets all functional requirements, with all core features operating in accordance with the system design. The application of the ICONIX *Process* demonstrates alignment between system requirements, design, and implementation, as evidenced by the successful execution of functional testing.

Keywords: Student Attendance, KKN, ICONIX *Process*, Flutter, Laravel