

ABSTRACT

Indonesia is one of the countries where natural disasters such as floods are still a frequent problem, including in Citeureup Village, Dayeuhkolot District, Bandung City. The people of Citeureup Village still have limited access to information related to flood disasters. This lack of access results in inadequate preparation and delays in addressing flood disasters. This study aims to design and develop backend system for a mobile application capable of quickly and reliably providing verified information to the *community*, as well as facilitating direct reporting of incidents by residents. The developed system provides API services for various features such as flood information, weather forecasts, flood and infrastructure reports, evacuation site information, and mitigation tips. The system development process adopts the Iterative Incremental method, which allows for the gradual and adaptive development of features based on feedback. The backend architecture is built using Node.js with the Express.js framework, along with a PostgreSQL database for data persistence. The effectiveness of this iterative approach was proven during UAT *testing*, where critical findings regarding the reporting flow without authentication in the first iteration were successfully identified and corrected in the subsequent development iteration. System *testing* was conducted comprehensively, including *unit testing*, API functional *testing*, *User Acceptance Testing* (UAT), and *load testing*. The test results showed that all main functionalities were running as designed and successfully passed UAT after going through the improvement iteration. In *load testing* with 400 concurrent *users*, the system proved to be stable with an error rate of 0%. This research successfully produced a functional application backend that has been successfully deployed. This system is ready to be developed to strengthen the preparedness of the Citeureup Village *community* in facing flood disasters.

Keywords: Flood Disaster, Backend, Iterative Incremental, Citeureup Village