

ABSTRACT

Lakeside FnB Group, operating within the Telkom University environment, has intensive operational activities across its four main outlets. Manual attendance recording for staff has proven to be inefficient and prone to administrative errors. To address this issue, a geolocation-based mobile attendance application was designed to record and verify staff attendance in real-time based on GPS location. The application was developed using the Extreme Programming (XP) methodology, which emphasizes short iterations, intensive user collaboration, and continuous testing. The development process followed the stages of planning, designing, coding, testing, and iteration based on user feedback. Flutter was used as the main framework due to its support for cross-platform development and efficient integration of geolocation plugins. The development results show that the application can accurately record attendance when staff are within the designated outlet radius, achieving an accuracy rate of 95,24% based on system testing in classifying staff attendance correctly using the confusion matrix method. This value reflects how accurately the system can distinguish between users who are actually at the location (valid) and those who are not. The application also provides supporting features such as task management and attendance summaries. It has been proven to improve operational efficiency, reduce administrative workload, and support transparency in the attendance system within the Lakeside FnB Group work environment.

Keywords: *extreme programming, flutter, geolocation, mobile attendance application,*