

User Interaction Analysis of the QR Code-Based Mobile Attendance System at Pelem Village Using the Extreme Programming Method

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ABSTRACT

This study aims to develop a QR Code-based mobile attendance application at Pelem Village Office using the Agile method with the Extreme Programming (XP) approach to replace the manual attendance system, which is considered inefficient, vulnerable to proxy attendance, and time-consuming in the attendance recapitulation process. The XP approach is applied through an iterative development process consisting of planning, design, coding, testing, and software increment, allowing user requirements to be accommodated gradually through features such as authentication, QR Code scanning, leave request submission, attendance history, and one-account-one-device restriction. System requirements were obtained through observation and interviews with village officers, while the application evaluation was conducted using usability testing with task success and time on task metrics. The testing results show that all features function according to user needs, with a task success rate of 100%, an average completion time of 90.5 seconds, and the ability to reduce the attendance recapitulation process from 30–60 minutes to 2–3 minutes, making the application feasible for improving efficiency, accuracy, and discipline in managing the attendance of Pelem Village officers.

Keywords: *usability testing, user interaction, QR Code, mobile attendance system, work efficiency*