ABSTRACT

In a focus group discussion conducted to PDAM Tirtawening and a survey to PDAM water customers, it was found that there are similar problems in the PDAM billing system, namely payments and bills. As a solution to these problems, a prepaid water meter (PWM) device is currently being developed. The prepaid water meter system is expected to be able to overcome the problems surrounding payments and bills. This then becomes the basis of research to create a mobile application that is used to interact with the PWM device that is being used. This application is able to connect to the PWM device via bluetooth to send water token data and view information such as remaining tokens from the PWM device. In addition, this application can also be used by users to purchase water tokens that are integrated with the payment gateway.

In the development process, React Native is a programming framework used as a tool for implementing mobile applications on the front-end (FE) side and is supported by the iterative incremental method with two iterations used to evaluate the FE appearance of the application in terms of functionality and ease of use. Usability testing is used as a testing method for the developed mobile application where the test results get a SEQ score of 6.68 supported by a SUS value of 85.92 which falls into the "acceptable" category with a representative grade of "B". Based on this score, the developed mobile application has succeeded in providing good user interface performance and user experience such as aesthetic aspects, information presented by the application, and application features that are easy to use and understand for PDAM users who will later use this application.

Keywords — *bluetooth low energy, mobile application, prepaid water meter*, token,