

ABSTRACT

House energy through the application is a monitoring of data processing information that is applied to the smart house by reviewing the efficiency of electricity usage of the house. The need for monitoring aims to minimize negligence on the user when forgetting when outside the home, this user can monitor and control directly all connected devices.

In this final project is a design that has been realized, namely monitoring the use of electrical power of a house and controlling several devices by using android studio software that can be used on android-based smartphone applications. By using Firebase as an application database, in ID storage and data processing that is connected directly to the internet network that occurs in realtime. In this study an application testing was conducted using the Black Box Testing method to test the appearance and functionality of each layout in the application, White Box Testing to test the programming code knowing whether or not the application, calculating the time of sending data from an android-based smartphone application to the database, and from the database to the Android-based smartphone application.

Based on the results of testing and analysis obtained by the Black Box Testing method, that the application successfully runs with the planning scenario and provides the output as expected. White Box Testing testing in successfully testing the code pieces of the register menu, is said to be successful because there are no errors in the program code so it is feasible to use. Quality of Service testing reviews the data in the form of delays with an average value of 11.6ms first sample, 8ms second sample, 9.2 ms third sample. Packet loss with an average value of 0.2%, first sample, 0.28% sample second, 0% third sample. 1576.6bps first sample throughput, 1960.6bps second sample, 1792.9bps third sample. Overall in the experiment get good results because the overall experimental data obtained can be well received by users and can run applications in sending data well.

Keyword: Smart house, User, Firebase, Black Box Testing, Smartphone