

ABSTRACT

Along with the development of existing technology created a conventional electric bell. However, this conventional electric bell does not work effectively because if the owner of the house is not in the house, the owner of the house does not know that a guest is coming to his house. Smart Doorbell is a smart doorbell prototype that can be used in homes in general, especially for homeowners when they are not at home who want to know guests who visit with a more modern and smarter system.

Based on the problems above, in this study using the HC-SR04 Ultrasonic Sensor component connected to the NodeMcu microcontroller and Telegram Bot to provide notification of guest presence. The ultrasonic sensor detects movement, then there is a throughput and delay condition where if the results of the detection match the conditions that have been determined then the nodemcu sends the sensor data results and the buzzer automatically activates and issues a beep sound, but if it does not match the specified conditions then the system will re-detect until it succeeds in passing the specified conditions, then the next telegram gets a notification from nodemcu which sends sensor data results, and the system process is complete. The test method used in this study uses QoS according to the ITU-T G.1010 standard.

The results of the analysis that has been carried out in this study, the QoS test according to the ITU-T G.1010 standard obtained an average morning throughput of 2476 mbps, an average afternoon throughput of 2762 mbps, and an average afternoon throughput of 2544 mbps is classified as a very good category, and in the morning the average delay is 95,755 ms, the afternoon delay is 70,174 ms and the afternoon delay is 86,274 ms, it is classified as a very good category. distance testing in bright conditions the optimal distance throughput is 7.78 Kb/s and delay is 25.57 ms. In testing the distance in dark conditions, the optimal throughput distance is 7.09 Kb/s and the delay is 31.38 ms.

Keywords: Smart Doorbell, Hc-Sr04 Ultrasonic Sensor, Telegram Bot.