

ABSTRACT

Near Field Communication (NFC) is one of the newest communication technology utilizing radio waves. NFC technology has been growing until now with the technology that is owned to be able to replace some of the systems that have been running.

In this Final Project, a room security system that consists of NFC on smartphone and NFC reader is designed and implemented, NFC shield which is integrated with Arduino. NFC reader reads NFC tags from smartphones that are required to enter a user ID (UID), then access rights are authenticated NFC reader, then the authentication results trigger the servo function to unlock the room door, then the data transferred to Nodemcu using i2c serial then sent to Antares which is the cloud database.

Based on the reseach, the prototype system can carry out a validation process between NFC shield integrated with Arduino Uno and NFC on smartphone with maximum distance is 4cm without obstacle, whereas if there is an obstacle the validation process maximum distance is 3cm and the result QoS from the prototype system, MQTT protocol has better performance compared to HTTP protocol. In the parameter delay MQTT protocol has a lower value than HTTP protocol and in the parameter throughput MQTT protocol has a higher value than HTTP protocol.

Keywords: *NFC, Smartphone, Arduino Uno, Node Mcu, Antares, HTTP, MQTT.*