

ABSTRACT

Nowadays the rapid evolving of technology has provided a lot of convenience and efficiency in our daily activity. Near Field Communication (NFC) is one of the latest short range communication technology there on smartphone to perform data transfer without pairing. On smartphones enable NFC with Android OS 4.4 (KitKat), introduced the communication mode of Host-based card emulation that can make a smartphone has NFC function as a smart card.

In this system, implemented on smartphone enable NFC with the kind of mobile host-based card emulation be a device for accessing the room. When implementation smartphone in brought to NFC readers on which it is mounted on the door. After data unique (AID) smartphone successfully reads, data to be in authentication by a web server in check for the right of its accesses. The results of authentication at the request by microcontroller Arduino Uno as command execution next. All that activity the access who succeeded and failed, stored in databases. Sms notification to be sent to the user who successfully accessed the room and admin sent to the room if anyone tries to 3 times access space without the right of access.

The results of testing on the application host-based card emulation showed all feature can run both in android smartphone os 4.4 (upwards). The average response time it takes the reader NFC reads data from smartphone namely 0,248 by the second. Nfc readers can read data from a smartphone to within centimeters sides 4.5 and data that reads 100 % fixed. To the average time, a delay delivery SMS notification is 15,06 by the second.

Keywords: *near field communication, smartphone, mobile application, smartcard,*

host-based card emulation mode, server