ABSTRACT

Everyone wants their home to be safety, because a home is one of the

important place where we keep our valuable thing. Sometimes home that left by its

owner have a high risk to be the target of thieves and often to be undetectable when

the accidents occurs. Based on that, we need a system to guard our home safety in

real time so accidents that we don't want can disturb our family safety. Internet of

Things is one of the solution to monitoring our home in real time and can control

our home from our smartphone wherever we are.

In this final project will be built a smart home system with NodeMCU

microcontroller that connected with PIR sensor, gas and smoke sensor, temperature

and humidity sensor. This system will be added a feature with lamp and door lock

that integrated with Google Assistant so user can control it with their voice through

smartphone. This system can be accessed by user through smartphone as control

and user interface from the data that gathered by sensors.

After the test is done on its network quality against the distance of the

system to access point, the average delay that produced for monitoring system are

0,070 seconds at 5 meters and 0,388 seconds at 60 meters. The average monitoring

throughput acquired at 5 meter is 534,73 bps and at 60 meters is 173,87 bps. For

controlling system, the average delay that acquired is 0,899 seconds at 5 meters and

the average delay at 60 mters is 2,090 seconds. The average controlling system

throughput that acquired at 5 meters s 574,73 bps and at 60 meters acquired is

213,87 bps. The average realibility of this system is 99,757% and the average

availability of this sustem is 99,756%.

Keywords: *Internet of Things, Google Assistant, smarthome.*

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