

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.*