ABSTRACT

In this digital era, device that use Internet of Things as its system has become popular, this technology sustains its user to either control or monitor the device through smartphone or even web browser remotely with internet as its intermediary.

This final project will explain a design about a Smart Home system or Home Automation with Internet of Things (IoT) concept, where in this system cloud computing will be used as database center and as links that connect user interface that is Android based application, with electronic devices or even sensors that located inside home environment through Internet network. This system allowed the user to access and control the electronic devices (on/off) remotely with any smartphone that is based on Android operation system. On the other hand, this system also sustain user to switch the light to on/off by clapping their hands inside the house. Indirectly, this system will also help to save the electricity usage, by providing an automatic feature so that user has an ability to switch on/off the electronic devices due to the condition that has already specified.

. Based on the result of the system implementation on home environment prototype, this system has an ability to monitor the temperature and humidity of the room, measuring light intensity, detecting the presence of human using infrared sensors, and knowing the condition of the door of the house being closed or open using a proximity sensor, as well as controlling electronic devices that is connected to the system. By testing the accuracy of temperature sensors and humidity, obtained a value accuracy of 96.36% and a distance sensor with an accuracy of 73.34%. The testing is done to calculate the average delay required by the system to execute commands given by the user. The average value of delay obtained is 2.704 seconds.

Keywords: Internet of Things, Cloud Computing, Sensing and Actuating, HTTP Protocol, Android based.