

ABSTRACT

The older you get, the more technology is being developed. Currently, there are many conveniences for humans in using technology itself. In the world of technology there is what is called the internet of things, namely the ability possessed by the internet network to control a device. Because the world of the Internet of Things itself is getting more and more developed. Even in the event that it is like turning off the electricity, it is now easier with the presence of this technology.

In this final project, an automatic switch controller assisted by using a smartphone has a basic theory that is formed from the theory of the internet of things, which is a system that is able to store and transfer data over a wireless network without human assistance that can be connected to the internet or local networks, for example, like a bluetooth network. This tool is a development of a smart home that will be able to be controlled remotely using the internet network, even though we are outside the house, it will make it easier for daily use. In addition, this tool has an automatic switch that will be set with one of the components in it, namely the RTC to regulate the disconnection or installation of electric current automatically, which will be regulated via a smartphone to schedule or timer on the device. The components for this tool contain a microcontroller, namely Arduino Uno R3 and Node MCU Esp8266, which are assisted by other components such as relays, RTC, Bluetooth HC-05 and the Step down module. The application was made using the MIT App Inventor website with the application name "Daltz Smarthome". In the application there are two modes, namely Internet Network mode and Bluetooth mode. Both can be used using a Bluetooth connection or an internet network.

After the design, the last stage is carried out, namely data analysis and experiments on the tool based on the sensors that are in the tool. Bluetooth connectivity test was carried out by pairing 50 times and having a success rate of 98%, also the wifi module with 20 trials and having a success rate of up to 100%, then testing Bluetooth pairing with a maximum distance of 7.5 meters, then tested on the RTC sensor with a success rate of 95% on the scheduling test and 90% on the timer test. The last test is a sensitivity test on the application where the internet network page is superior to Bluetooth because it is able to respond with a click delay of up to 0.05 seconds.

Keywords : Bluetooth, IoT, RTC, Smart Electric Socket, Smarthome, Wifi