

ABSTRACT

Cactus is a plant that has leaves that turn into thorns so that it can reduce evaporation of water through the leaves. The high selling price of cactus makes cactus cultivation an income for cactus farmers. Cactus nurseries are still not optimal because they still use a manual monitoring and control system for temperature and humidity. From these problems, it is necessary to have a tool that can facilitate monitoring and controlling the temperature and humidity of the cactus environment so that cactus cultivation can be maximized. To make it more optimal, the tool is based on the internet of things to make it easier for cactus farmers.

This final project research designs a tool that can monitor and control temperature, air humidity and soil moisture for cactus cultivation based on the internet of things using fuzzy algorithms. The measurement data were also successfully displayed on a 16×2 LCD located on the outside of the mini greenhouse. In addition, the system has also succeeded in sending and displaying data on smartphones via the blynk platform to make it easier for users to monitor the nursery climate remotely. With the results of this study, it is hoped that this tool can help farmers in cultivating cacti so that they do not rot because the temperature and humidity of the nursery environment can be monitored and controlled easily. The system which is an integration of the DHT 22 and YL 69 sensors successfully measures and controls temperature in the range of 27.5°C-32.5°C and air humidity and soil moisture in the range of 45%-60%.

Keywords: *DHT22, fuzzy, internet of things, cactus, nodeMCU ESP8266, YL69.*