

ABSTRACT

This tomato plant is one type of fruit and vegetable, which is widely consumed by some consumers for their needs. Tomato planting requires special attention, because tomato plants are usually found in the highlands and in cold temperatures with moist soil conditions. In order for tomato plants to produce tomatoes with good colors, a monitoring system is designed so that it can be used for remote monitoring using a smartphone. This system uses the Internet of Things (IoT) with a design using the NodeMCU ESP8266 microcontroller, the Dallas DS18B20 sensor, and the YL-69 soil moisture sensor. The temperature sensor and soil moisture sensor YL-69 reads the air temperature and soil moisture of tomato plants. The data communication used for sending is Wi-Fi. Then the results of the sensor readings will be displayed on the BOT telegram. The results of system testing on both sensors managed to read well, the average obtained on the DS18B20 sensor was 98.91%, for the humidity sensor it was read with an average accuracy value of 96.82%. The results of the QoS throughput test are 15.74 KB/s, with a packet delay of 0.13 ms, and a packet loss percentage of 0%.

Keywords :tomato, monitoring, nodemcu, telegram