POTATO PLANT MONITORING SYSTEM INDOOR USING WIRELESS SENSOR NETWORK BASED ON INTERNET OF THINGS

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ABSTRACT

Potato plants are annual plants that are generally planted in highland areas. As a source of carbohydrates, potatoes can be used as an alternative to rice. Indoor potato planting requires more care, one of which is checking the plants to suit the needs of the plants in order to get quality plants with high selling prices. This study aims to develop an indoor potato plant monitoring system using an Internet of Things-based Wireless Sensor Network. There are transmitters and receivers that each have a DHT22 temperature sensor input and a Sil Moisture soil moisture sensor. Based on the tests that have been carried out, the monitoring system that has been created shows the results of the DHT22 temperature sensor test obtained a percentage error value of 0.67% and a percentage error value of the Soil Moisture soil moisture sensor of 5.9%. The NRF24L01 test showed that the maximum distance for sending data is 38 meters. In the Internet of Things test with the Thingsboard platform, an average delivery time of 1s was obtained with a download speed of 42.30 Mbps (Megabits per second) and an upload speed of 52.63 Mbps. The Thingsboard dashboard successfully displays data from the DHT22 temperature sensor and the Soil Moisture sensor.

Keywords*: Potato, Wireless Sensor Network, Thingsboard*