

ABSTRACT

Agriculture is a crucial sector in meeting food needs and increasing population growth. However, in practice, the agricultural sector is often faced with various challenges that impact the availability, quality and sustainability of food production. Therefore, technological solutions are needed that can integrate environmental quality measurements and provide real-time data that is easily accessible to farmers.

This final project aims to design an IoT dashboard for measuring air, water, soil and weather quality in the context of smart agriculture based on LoRa communications. The design process includes installation and configuration carried out on the main server, namely the Raspberry Pi. The process of integrating sensor data received on Node-RED will be stored in influxDB and visualized by grafana.

The results of this final project show that the sensor data for each node sent by the gateway via the MQTT broker can be received properly and stored in the influxDB database. Sensor data stored in influxDB is then displayed in the form of a dashboard visualization using Grafana. The results of the IoT dashboard design are able to display parameter values for air, water, soil and weather quality.

Keywords: *Smart farming, Internet of things, InfluxDB, Grafana.*