# ABSTRACT

Now the technological advances that are currently widely used, namely the Internet of Things (IoT), have been utilized in various fields, as well as in agriculture such as hydroponics. Hydroponics is a technique of growing plants without using a means of growing from the soil but using water as a means of growth for plant growth. In this final project, the author uses cayenne pepper plants. Cayenne pepper is one of the vegetables that is quite important because it can add a spicy taste and red natural dye to food and can be used as a medicinal plant because it can overcome various diseases. One of the hydroponic methods used is the dutch bucket hydroponic method because cayenne pepper plants have a taproot type so they use the dutch bucket hydroponic method.

In this final project research aims to monitor and be able to view data storage based on *a web server* that is connected to the internet and accesses it through *the website.* And can be accessed anywhere and anytime.data *Sensor* contained in hydroponic media will be sent using the connectivity contained in the ESP32 module and parsed to the API (*Application programming interface*), the *parsed* will be *obtained* to the *web server*, *the database* used is Mysql *database*. Next, the data contained in the database is displayed on *the website* using the HTTP and HTTPS protocols. So *website* that the designed http://hydroponicmonitoring.my.id/, the author rents a domain and prepares hosting.

Based on the results of the device system testing, it is known that the device runs well for a period of 24 hours and is able to send data to the MySql database per minute. Processing of sending data from nodeMCU to MySql database proves that the QoS system has a very good average value with each parameter, namely throughput of 10.172 bps and delay of 63.0 ms.

**Keywords:** *Database, Website, Web server*