ABSTRACT

Temperature, pH content, ammonia content are parameters of water quality in fish ponds that need to be considered, especially in ornamental fish ponds such as koi fish. Koi fish is one of the ornamental fish that are in great demand and have a fairly high price, in maintaining koi fish pond water quality plays an important role in the success of maintaining koi fish. If the pond water is of good quality, fish can grow healthy and develop optimally. Therefore, some parameters of pond water quality such as temperature, pH content, and ammonia levels need to be considered.

The purpose and benefits expected in this final task is to design and create an android-based koi pond water quality monitoring and controlling system that can be controlled in realtime in order to facilitate the maintenance of koi fish. By designing a monitoring and controlling system of a koi pond capable of monitoring and controlling water quality parameters using nodeMCU microcontrollers, then the data obtained will be published to the mqtt server that will be subscribed by the user so that it can be displayed and controlled with the application in real time on smart phones that use the Android operating system.

After testing the sensor and actuator obtained results in the form of an automated system can meet the logic encoded in the microprocessor node mcu and also the controling part can control the temperature, pH value, and ammonia levels well in accordance with the limits of the specified parameters. In addition, in qos test that is delay between the tool and the broker server mqtt of 370.06 ms, in the test the throughput value between the tool and the server obtained a throughput value of 1525 bps.

Keywords : water quality, Internet Of Things, MQTT