

## **ABSTRACT**

*Indonesia is an archipelago that has very high marine potential, especially in fisheries potential. This relatively abundant potential is usually utilized by the community as a business, for example by doing fish farming, especially freshwater fish farming such as catfish. This is done because of the increasing market demand for the supply of catfish which has high economic value. However, in its implementation there are many things that must be considered so that cultivation continues to run optimally as it should even though it is done automatically. One of them is related to the quality of the pond water for the cultivation itself. If the quality of pond water is not well controlled, it will cause catfish to have difficulty adapting, stress, illness or even death. So that in its implementation, control of pond water quality needs to be considered, one of which is through the parameters of light intensity and pond water temperature. The innovation of an IoT-based light intensity and water temperature monitoring system prototype is made to facilitate catfish farming more effectively. This writing itself uses an automatic monitoring system to control water quality based on NodeMCU ESP32 which has been equipped with LDR sensors and DS18B20 sensors which will then be forwarded via the Internet of Things (IoT) as an embodiment of automatic cultivation. Based on testing the DS18B20 sensor and LDR sensor, each sensor has an accurate value and bias value. The DS18B20 sensor has an accurate value of 89.2% and a bias value of 10.8% while the LDR sensor has an accurate value of 98,66% and a bias value of 1,34% and has a delay of 160.8 ms and can be categorized as a good standard value on a scale of 150 ms to 300 ms.*

**Keywords:** *Water quality monitoring, Internet of Things, NodeMCU ESP32, LDR Sensor, DS18B20 Sensor.*