

ABSTRACT

In catfish farming there are several factors that must be considered such as water temperature and pH levels. Water condition checking is usually done traditionally on a regular basis by paying attention to water color and odor, but in this method there are still shortcomings for accuracy and time efficiency. The development of technology is now also increasing, one of which is Internet of Things (IoT) technology which has been widely implemented in everyday life. Therefore, in this study, we will design a tool that functions to monitor and control the quality of the temperature and pH of catfish pond water. This system uses a monitoring tool, android application and database using Google Firebase. Some of the features that can be used in this research are temperature detection sensors, pH detection sensors, heater control and water pumps. The accuracy of the DS18B20 sensor on ice water is 99.36%, on tap water is 97.29% and in hot water is 97.29%. Then the accuracy of the pH sensor of the 4.00 buffer solution is 95.50% and the 6.86 buffer solution is 96.50%. In addition to the temperature sensor and pH sensor features, there is a water pump and heater. The success rate obtained in this overall test is getting a good enough time to return to normal with catfish conditions that are quite good, because in a pond that has a size of 60cm x 42cm x 34cm it takes no more than 1 hour to return to normal.

Keywords: *Microcontroller, ESP8266, DS18B20, pH sensor, heater, water pump.*