ABSTRACT

In 2023, channa fish will start to make a name for themselves on the Indonesian ornamental fish market. Channa is a fish that is easy to cultivate, so many people have succeeded in breeding it for their daily livelihood. People compete to improve the quality of fish by holding contests every month. To achieve good quality, special handling is required, such as providing special feed, drying in the sun, scheduling lights, and controlling water quality. The problem arises because everyone wants to have good fish that are competent in contests, and have high economic value, many people start doing unreasonable things under the guise of treating ornamental fish, such as leaving the water un-drained for a long time, drying the fish for too long. , as well as satisfying fish for a long time. These things cause fish to experience health problems that can lead to death. To solve this problem, a tool was created that can control water quality automatically, control lighting, and provide feed automatically. This research aims to explain the development of a Smart Aquarium system design for IoT-based channa fish rearing using the ICONIX Process method which utilizes the web as monitoring and manual control. This web application is connected to the embedded system via a network, so that users can set thresholds via the web as limit values on the sensors when automatic operations are executed. There are 3 sensors used, namely a turbidity sensor, a water level sensor, and a light sensor. This web application was created using the CodeIgniter3 framework and has been tested using black box testing with a total of 20 tests that have received conclusions.

Keywords: *Channa Fish, Treatment, Water Quality, Embedded System, Internet of Things.*