

## **ABSTRACT**

In this modern era, many people are fond of maintaining ornamental fish because of their beauty and high prices. However, nowadays people are preoccupied with matters that require them to leave the house for a long time. Therefore, fish keepers do not have time to take care of their domestic fish, such as draining the aquarium, feeding fish regularly and knowing the status of fish feed availability. This is a problem for fish keepers.

This research was made smart aquarium that can control water drainage and automatic fish feed. Automatic fish feed functions to feed fish using RTC, servo motor and can choose the amount of feed that is released through a smartphone. If the fish feed runs out, a notification will appear on the cellphone. Drain control functions to control the cleanliness, acidity and temperature of the water in the aquarium. The acidity level for freshwater ornamental fish is between 6-7.5. Turbidity level <25 NTU and aquarium temperature 20o C to 28o C. This drainage system uses turbidity sensors, pH sensors, temperature sensors, water pumps, heaters and relays. When the water pump is running, a drainage process will occur and a notification will appear on the cellphone. This research uses Context Aware as a programming algorithm. The controller used is Arduino Mega, while for data communication (internet of things) using NodeMCU. This study uses the Blynk application for the notification viewer process and the feed selection controller via a smartphone.

Aquarium drainage goes according to a predetermined context. The accuracy of testing the weight of feed dropped from 5 grams - 35 grams between 94.15% to 97.85%. Testing notification of feed out or drainage runs smoothly and the accuracy value is 100% with the distance of the wifi and the system as far as 25 meters. With a smart aquarium, the feeding process is more scheduled and aquarium cleanliness is maintained.

**Keywords:** Smart aquarium, context aware, Internet of Thing