

## ABSTRACT

Aquaculture is one of the great potentials to be developed in Indonesia. A common problem that is a major obstacle for fish farmers in realizing fisheries activities (*fisheries management*). For fishing technology has not received much attention. Along with the development of technology for fish cultivation so far the fish harvest is still done manually and requires excessive time and human resources and if there is a large order it is difficult to capture and calculate the amount.

Given these problems, we need a prototype of a fishing gear using a microcontroller in *realtime*. Prototype This fishing gear is a tool that uses a *microcontroller* as its control center and utilizes the concept of *IoT (Internet of Things)* that can send data via wifi in *realtime*. This tool uses an *infrared sensor* to detect the amount of fish we need in accordance with the amount input through the tool. Then the data can be displayed through the *website* in *realtime*, then the fishing gear will be connected to *Firebase Realtime* as a fishing *database*. *NodeMCU* is used as a medium for sending data from a device to a database. *Motor Stepper* functions as a net roller in the prototype of a fishing gear, then the *Motor Servo* functions as an opening and closing the gate for the exit of the fish in the prototype of a fishing gear.

Based on the results of tests that have been done, Prototype of Fishing Equipment and *Website* is going well. The functionality of this fishing gear has reached 89% in 10 times the test. Delay Testing Tool to the *Website* in receiving data obtained 4.9sc results to *upload* data to the website after the sensor reads and sends data to the *database*. The accuracy of the tool with the Website has also been 89% of 10 times testing. Testing Data transfer downloads and uploads are 24.3Kb / s for *downloads* and 24.2Kb / s for *uploads*.

**Key Words:** *fisheries management, IoT (Internet of Things), microcontroller, realtime, Sensor Infrared, website, Firebase, NodeMCU, Database, Motor Stepper, Motor Servo, downloads, uploads*