

## ABSTRACT

In the conditions of the Covid pandemic, many people have started trying new things, one of which is keeping ornamental fish to relieve their boredom, but on the other hand they are also busy with their work activities and other things that cause their focus to be divided. Therefore they need a system for monitoring the ornamental fish they have so that the potential for death in ornamental fish can be minimized.

In this final project the author will monitor and control the water temperature, acidity level and dissolved solids in water. The sensors used are the dfRobot pH sensor as a water pH detector, the DS18B20 temperature sensor as a water temperature detector, and the TDS sensor as a detector of dissolved solids in the water, and the microcontroller is connected to a WiFi network. The ESP-32 microcontroller serves to transmit sensor data to the Telegram Bot.

From the results of the tests that have been done, it is known that the system can work well. In addition, *Quality Of Service* testing is also carried out, for sending data from the device to Telegram, the average *delay* was 102,854ms. The average *Throughput* of sending data from the device to Telegram is 18837 *bps*.

Keywords: Telegram, *Controlling*, *Monitoring*, IoT Concepts.