**ABSTRACT**

Shrimp is a favorite animal by the people of Indonesia because Indonesia itself has 75% of the sea that stores a lot of marine biota and one of them shrimp. as a high source of protein need to be considered the freshness of shrimp in order to maintain its protein content. As consumers of course we expect good quality shrimp and fresh, but shrimp farmers have problems every year is crop failure caused by a decrease in pH levels and salintas that make many shrimp in shrimp ponds die and also their skin peeling due to differences in pH levels and salinity of water that is far from the condition that should be pH levels in the number 6-7 and salinity in the number 200-300 ppm. Therefore, the needs of shrimp farm farmers that can know and regulate the pH and salinity levels quickly so that the condition of shrimp in the pond is not too long in the condition of pH levels and salinity of water is less.

In this final task research has been designed prototype tools to monitor and control the pH level and salinity of water in the pond prototype shrimp pond, serves as maintaining the quality of water in the pond is always maintained so that the quality of shrimp produced is good and fresh, the working principle of the prototype that will be formed itself is to use two sensors that serve to read the pH level and salinity of water , then it will be processed in the microcontroller and then from the data is sent to the database and the value of the sensor reading is also a set point for the water pump to work in maintaining pH and salinity levels with the method of replacing water in a pond or container.

Based on the results of the implementation of monitoring and water control system in the prototype pond shrimp pond, in order to maintain the pH and salinity levels in ideal conditions using pid parameters at pH namely $Kp = 1$, $Ki = 0.061$, and $Kd = 1$. For PID parameters in the salinity level control system it self $Kp = 0.27$, $Ki = 0.020$, and $Kd = 0.3$, with the parameter the control system at the pH and salinity levels went well.

**Keywords**: *Shrimp pond , pH, Salinity, real-time, identification system, IoT, Monitoring, Controlling, IoT.*