ABSTRACT

The rapidly growing population density makes the use of land and water for fish and plant cultivation increasingly limited. Therefore we need a type of cultivation system that can be applied to limited land and water. In an aquaponic system there are important factors that must be considered, namely Dissolved Solids (TDS), Temperature, pH, and Turbidity, therefore special attention is needed on these factors. This tool also aims to reduce the adverse effects resulting from the pollution of aquaculture waste.

In this study, the authors design a water quality monitoring tool that is able to provide water quality data in ponds with predetermined parameters, then this data can be processed using a fuzzy algorithm to determine the quality of the water, including superior, good, poor or bad, in addition the authors also make a pH control system and a scheduled feed system. In this system the author uses an arduino mega which is connected by a WIFI module and several sensors. Arduino Mega is in charge of sending data to the Application Programming Interface (API) to be forwarded to the database.

From the results of the tests that have been carried out, it is known that the system can work well. In addition, Quality of Service testing is also carried out, on sending data from the tool to the API, the average delay is 102,0881 ms

Keywords : Aquaponics, Internet of Things (IoT), Water Quality, Arduino Mega