

# ***APPLICATION OF IOT TECHNOLOGY IN MAINTENANCE AND CARE OF KOI FISH WITH FUZZY LOGIC ALGORITHM***

**RAEHAN WIDI SUGIARTO**

*Informatics Study Program, Faculty of Science & Technology  
University of Technology Yogyakarta  
Jl. Ringroad Utara Jombor Sleman Yogyakarta  
E-mail : raehanwidisugiarto2002@gmail.com*

## ***ABSTRACT***

*Caring for or cultivating koi fish by hobbyists and beginners is often considered difficult because there are several factors that cause the fish to get sick or even die. One of the problems that often occurs lies in poor pool conditions. This research aims to control the condition of koi fish ponds remotely using IoT technology, as well as utilizing the fuzzy logic rule-base algorithm to regulate the condition of koi ponds. Apart from that, we will also discuss how to manage and monitor the condition of koi ponds in real-time using IoT technology and fuzzy logic rule-base algorithms. The scope of this research is the application of IoT technology and fuzzy logic rule-base algorithms to maintaining koi fish in freshwater ponds, as well as controlling and managing pond environmental conditions which are measured through sensors installed in the pond. The method used in this research is to implement IoT technology and the fuzzy logic Rule-Based System algorithm in the koi fish rearing system, and measure the results by analyzing data obtained from sensors installed in the pond. The results of this research are a koi pond condition monitoring application which is processed with a fuzzy rule-base from three inputs, namely water turbidity, water temperature and water pH, originating from sensors installed in the pond. Apart from that, users can also drain the pool water remotely via the application. Testing is carried out by entering variable values in Firebase then the application as a client processes each input. One example of a test is that when you enter the value of water temperature = 25, water turbidity = 25, and water pH = 4, the application reads it as water temperature = medium, water turbidity = clear, and water pH = acidic so that the output is the condition of the pool. Just fine.*

*Keywords: Internet of Things, Fuzzy Logic Rule-Base, koi fish farming, Mobile, Firebase.*

