ABSTRACT

The aquascape industry is an industry engaged in art by combining plants, wood, fish, stone and other components. Aquariums need care to maintain the survival of fish and plants that live and grow in the air simultaneously. Treatments such as maintenance of environmental parameters (temperature and pH) are things that must be maintained and cared for regularly in aquariums, especially aquascape type aquariums. This treatment will be more efficient and optimal if it is carried out with the help of technology, such as an automatic monitoring and control system in real time and remotely. Based on the above problems, a system is built that can monitor air temperature and pH in real time and remotely for Aquascape and design algorithms for adjusting the temperature of the aquarium using Fuzzy Logic. Fuzzy Logic is used to maintain air stability so that it is always within the expected temperature range. The sensors used in this study were the DS18B20 temperature sensor and the 4502-C pH sensor with a pH range of 6.5-8.5 and a temperature range of 24 ℃ – 25℃ *which were then processed using Arduino and NodeMCU ESP8266 and continued with Fuzzy Logic programming. The process of monitoring the condition of the water environment is carried out using the Blynk application installed on a smartphone. It is hoped that with this smart aquascape, the maintenance of environmental parameters in the aquarium can be more efficient and optimal and can make it easier for aquarium owners in the process of monitoring and controlling. The test results of this final project can stabilize the aquascape temperature in the range of* 24 ℃ – 25℃. *Retrieval of test data was carried out for 1 hour with a period of 5 minutes. The accuracy of the temperature sensor is 99,72%, the pH sensor is 98,94% and the fuzzy program is 99,99%.*

Keywords: *Aquascape, Water Temperature, pH, Fuzzy Logic*