DESIGN OF ARDUINO-BASED AQUASCAPE MONITORING AND CONTROLING SYSTEM USING BLYNK APPLICATION

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ABSTRACT

Technological developments in the current era have led to a lot of new innovations in supporting people's lives. There are lots of technological implementations that we can encounter everyday, as is the case in aquascape technology. The main problem in aquascape maintenance is water quality, including pH, temperature and water turbidity. The pH standard in Aquascape ranges from 6-9, the temperature standard ranges from 24-27 Celsius and for turbidity standards below 500 MTU. If it is below or above this value it will affect the plants and fish in the Aquascape. For plant quality including lighting, and for fish including feed, a control and monitoring system is needed so that the ecosystem in the aquascape runs well. In this study, researchers will build an Aquascape monitoring and control system using Arduino Uno using the ByLink application based on the Internet of Things (IoT). Which this tool can monitor indicators such as water temperature, water pH, and water turbidity which can be monitored in monitors and bylnk applications, then automatically controls it in certain circumstances such as temperature if it exceeds 26 degrees Celsius it will turn on the fan, water turbidity if it exceeds 500 mtu will turn on the filter, the light will turn on at 17:00 and turn off at 7:00, and feed the fish at 8:00 and 16:00. Based on the test results of the control and monitor systems, a success rate of 100% was obtained and the temperature sensor error was 4.83%, the pH sensor was 12.05%, and the turbidity sensor was 3.6%.

***Keywords**: Aquascape, system control, Blynk*