

## **ABSTRACT**

*Aquascape is the art of arranging aquatic plants, ornamental fish and rocks in an aquarium. Unlike the aquarium in general, aquascape is a place to live and develop fish as well as aquatic plants. The photosynthesis process of aquatic plants requires lighting instead of sunlight. So that a monitoring system is made for the media for sending temperature and pH quality data on the aquascape. The ideal water temperature in the aquascape is from 25-32 degrees Celsius and a good PH value is 6.0 – 8.0. This system is based on the NodeMCU ESP8266 microcontroller which is connected to the DS18B20 temperature sensor, 2 Channel 5V Relay and PH Sensor. this system is able to monitor temperature and pH quality using the mqtt protocol through the mobile application, the mobile application used is MQTT Dash as a place for monitoring water temperature and pH quality, data will be sent in real time with the requirement that it must be connected to a wifi or internet connection. with the creation of this system using the mqtt protocol consisting of a series of tools above, it is expected to be able to monitor water temperature and pH quality in real time on the aquascape even though the owner is outside the house or a location far from the aquascape so that the owner can monitor the health of the aquascape ecosystem. from this study, the bottom results for monitoring temperature and pH during the day get an average of 32.33 Celsius for Temperature and 8.32 for pH, at night get an average of 31.35 Celsius and 8.67 for pH. Then for the Quality of Service (QoS) analysis, the delay results are not good, but in the Packet loss section, the results are very good or do not exceed 2%*

**Keywords :** *Internet of Things, Aquascape, Sensor Suhu DS18b20, Relay 2 Channel 5V, NodeMcu Esp8266, sensor PH, mosquito mqtt broker, smart lamp.*