ABSTRACT

MONITORING SYSTEM TEMPERATURE, HUMIDITY AIR, SOIL MOISTURE, AND AUTOMATIC WATERING ON ORNAMENTAL ADASON'S MONSTERA PLANT BASED IOT

By :

Muqorobin Zaelani

18102134

Adanson's monstera is an ornamental plant that is of interest to many people because of the holes in its leaves. Though Adanson's monstera is loved by many, taking care of it is not easy. Adanson's monstera is prone to temperature, humidity, and soil moisture. In taking care of Adanson's monstera, a special treatment is needed. Adanson's monstera belongs to the Araceae species, also known as *talas-talasan*, that is capable of living optimally in the temperatures of 23 to 30 degrees celsius, above 40% of humidity, and above 40% of soil moisture. On account of the need for special treatment in taking care of Adanson's monstera, a system that monitors temperature, humidity, soil moisture and an automatic watering system that is IoT based were created. In addition, a website that provides access to track the plant wherever and whenever was made. The website can be accessed as long as the device has internet connection making a system using the prototype method and using the black box method for system testing. The system works when the DHT11 sensor detects Adanson's monstera temperature and humidity, then the soil moisture sensor detects the plant's soil moisture. If the soil moisture sensor identifies that the soil is dry (<40%), the water pump is automatically turned on to water the soil. The output that is sent by the sensor can be viewed through oled display and the created website. The system implementation was carried out using the comparative method to understand the obtained information from comparing the result of connecting the monitoring system to Adanson's monstera and not connecting the monitoring system to Adanson's monstera. The comparison resulted in differences between the monitored plant and the unmonitored plant in terms of the leaf and stem growth. The unmonitored leaf had a difference of 1.8 in length and difference of 0.4 in width from the monitored leaf, and the unmonitored stem had a height difference of 4.8 from the monitored one.

Keywords: Adanson's monstera plant, IoT, Monitoring System, Automatic, Microcontroller