ABSTRACT

Vertical gaeden is a concept of urban agriculture (urban ogriculture) with terraced plant techniques that are suitable for application in narrow areas. Now, vertical gardening is not only a popular hobby, but if applied on a large scale, it can become a profitable business area. Therefore we need a system that can help humans maintain and monitor vertical gardens. This system will control and monitor online the vertical garden watering process automatically and channel it right to the planting media that needs it based on the output value and the YL-69 soil moisture sensor which is planted in each pot of planting media. The system works by means of relays that are connected to various octuators such as water pumps and solenoid valves. This system will carry out the watering process when the soil moisture is low by repeating until the soil is completely wet. With the test results, it is found that the ON/OFF control system is able to work 100% according to the design where the value and condition of soil moisture, total vertical garden watering and counters for the watering process at each level of the planting media pot and the water tank level can be monitored through the application. Bylnk on smartphones online with real time upload times. The results of the QoS (Quality of Services) test show that the throughput value with the Tiphon 0 index is 85.57 Kbps, the packet loss with the Tiphon 4 index is 0% and the delay with the Tiphon 4 index is 88.15 ms.

Keywords: Vertical garden, Watering System, Arduino Mega2560, monitoring, Blynk IoT, *QoS.*