ABSTRACT

Hydroponics is one of a farming method that developed to solve limited farming land problem which soil is not necessary as planting media and used water with nutrition. This made hydroponic method can be used by many society circles that want to do farming even just for private consumption including peoples that lives in a densely populated area with small planting land. One of important factors in the plant's caring using this method is effected by how the planter watch the water and nutrition flush or circulation needed. As a farming method that dont need soil as the planting media, do not need big planting area, and take importance on water and nutrition supply on the farming process, made hydroponics on great demands public mass including that have less knowledge about hydroponics method.

Monitoring of Water Circulation for Hydroponics Based on IoT designed using microcontroller equipped with soil moisture sensor to watch plant's moisture status as hydroponic's water circulation monitor, and a camera to capture image of plant's growth that integrated on mobile application made using Blynk service to show water circulation status, plant's image, and doing sprinkling when the planter's feel the need or as the water circulation status stated.

The test result shows fungtionality testing and functions of the command is already running as it should. With the final results shows that the application can shows moisture value as water circulation status, plant's image captured by camera with average delay on 1.48 seconds, and watering that done by 2 ways, automatically when the moisture status stated it dry and also manually by command from Blynk application with average delay on watering button on hold until the watering started is 0.7 seconds and average delay on watering stopped since the watering button released is 1.22seconds.

Keywords: *Hydroponics, Water Circulation, Application, Blynk*