ABSTRACT

The advancement of technology has now entered almost all fields. Because the users prioritize efficiency and ease in carrying out activities or work of course in the plantation sector. This is being considered to create tools that prioritize efficiency and effectiveness, one of which is in the plantation sector. Many producers have created tools to facilitate the process of watering plants in the plantation sector. One of them is automatic plant sprinklers, but the tools that were created before, do not have developed so that until now it is still limited in its use. To overcome this problem, we need a tool that can control watering automatically based on water discharge so that users can do it without having to set it manually.

The purpose of this Final Project is to make a tool with the help of a microcontroller and several sensors to read the water discharge needed during the process of watering plants automatically and use a *NodeMCU* platform as a control, *Water Flow Sensor* as a water discharge reader, *Solenoid Valve* as a discharge valve. This tool can be applied remotely through *real-time* wireless communication using the internet.

3-pronged pipe-shaped prototype with a tip mounted water flow sensor. From the results of the testing on the device that was received that on a test testing 1 liters it is found that on tap 1 has an average error percentage of 16.5%, on faucet 2 at 15% and on faucet 3 at 14%. And then, the results of the testing on the device that was received that on a test testing 3 liters it is found that on tap 1 has an average error percentage of 5.5%, on faucet 2 at 14% and on faucet 3 at 6.5%. the results of the testing on the device that was received that on a test testing 5 liters it is found that on tap 1 has an average error percentage of 11.5%, on faucet 2 at 6.5% and on faucet 3 at 10.5%.

Keywords: *Water Flow Sensor*, *NodeMCU, Solenoid Valve*, *Real-time* Database