Abstract
A greenhouse is a building structure that's particularly outlined to make an ideal environment for plant development. In a greenhouse environment, assembly fitting water needs is especially vital to extend agricultural efficiency and optimize the utilization of water assets. Be that as it may, numerous greenhouses still utilize manual watering strategies which are less effective. Therefore, researchers propose the development of a decision support system based on fuzzy logic. With this system, it is hoped that it can optimize the use of water resources in the greenhouse and help workers in the greenhouse in watering, especially in the grape greenhouse at Telkom University Surabaya which can monitor humidity in the soil and temperature around the plants and has watering scheduling, automatic fuzzy, and manual which can be controlled via smartphone. By using the fuzzy mamdani method, this research obtained quite accurate results, namely error of 0,01167, and can produce more economical watering compared to manual watering with a result of 9844.33 mL, while manual watering with a result of 28000 mL in 7 days test.

Keywords: Greenhouse, IoT, Fuzzy Logic, Decision Support System, Grape.