ABSTRACT

The interest in farming in urban communities is increasing. This is also driven by the decreasing area of agricultural land which is decreasing every year in urban areas. Therefore, technology is needed for planting but not using land and is suitable for urban communities who often use technology. Aquaponics is one of the solutions to solve the problem of planting plants without using soil. By utilizing the technology that can be used by urban communities, and meeting the needs of urban communities, an IoT-based aquaponics system is created. To find out whether the aquaponics system is running well, testing is done on aquaponic systems, monitoring systems and controlling system. In the aquaponics system testing is carried out by planting vegetables, in monitoring do the testing of incoming data, in controlling do the testing of sent data. The results of system testing are that the system has been able to run properly because all the results of the testing state that it is successful. After the system can run properly, we search for a method that can measure the difference in quality results in water before the automatic system is implemented between water quality after the automatic system is implemented, which uses the fuzzy logic method. The results of processing fuzzy logic by taking as many as 20 samples of water conditions before the automatic system is applied are all samples state bad conditions, then taken 20 samples of water conditions after the automatic system is applied, all the results from the sample state good conditions.

Keywords: deep flow technique (DFT) *Aquaponic, IoT, Fuzzy Logic,* Raspberry Pi