Abstract

Clean water can be said to be feasible for consumption, if it meets water quality standards that include physical, chemical and microbiological standards, in accordance with the Minister of Health of Republic of Indonesia Regulation No. 492/2010 on Water Quality Requirements. Clean water is a primary needs to support human life. Availability of clean water in large cities is approximately 60% supported by the Regional Water Company (PDAM). Currently many PDAMs are still using manual methods to control the quality of raw water, so the quality of the output is less awake. Raw water is the source of water that will be processed by PDAM, which then the results of processed in the form of clean water will be distributed to drinking water consumers recorded in PDAM.

In this Final Project built protoype system that can control intake canal and measure raw water quality automatically by using Atlas Scientific sensor with type of ENV-SDS utilizing communication of Internet of Things (IoT). The sensor can measure several parameters such as Dissolved Oxygen (DO) to determine the dissolved oxygen content in water, Temperature to know the water temperature, Conductivity to know mineral content in water, pH to determine the water pH level, Total Dissolved Solid (TDS) to know the content of solids dissolves in water. System processing is done by Arduino. The fuzzy methods used to determine whether feasible or not the water is to be processed, which will be consumed or used by humans.

This system automatically controls intake canal with 3 (three) main parameters such as TDS, DO and pH, in addition it can display water quality monitoring data from all sensor parameters and the status of the solenoid valve control system with IoT communication. By using this system the quality of raw water that goes into the processing through intake is maintained, so that drinking water quality provided by PDAM for use or consumed by society in daily life is also be maintained. This will minimize the possibility of people suffering from desease caused by water.

Keywords**:** *Raw Water Quality, Arduino, Dissolved Oxygen, Temperature, Conductivity, pH, TDS, Fuzzy Logic, Solenoid Valve, WSN.*