ABSTRACT

Population growth in Indonesia has increased every year resulting in an increased need for clean water. The main problem of water resources is the quantity of water that is unable to meet the increasing demand. One source of clean and proper water is through the Regional Drinking Water Company (PDAM). The most common way of testing water quality is to take a water sample and send it to a laboratory for detection and analysis. This method is based on parameter values to classify the proper quality of drinking water which takes a long time to calculate.

Based on these problems, a device is needed that can process the measured physical, chemical, and microbiological contents with the ability to classify accurately and display the results of the classification of the water being tested. So that the time needed in the process of analyzing and classifying the feasibility of drinking water can be shortened.

From the results of testing the system, it was found that this system could classify the drinking water tested into 2 categories, namely Eligible and Ineligible. In testing the parameters, we use machine learning and get an accuracy value above 90%. To input parameters that cannot be measured with a sensor, an LCD screen is used and after testing the data can be input safely without missing values. For the power supply, after testing it was found that the device was able to turn on for 9 hours 30 minutes continuously with a voltage of 5.9V

Keywords: Drinking Water, Extreme Learning Machine, Machine Learning, PDAM