Abstract

One of the obstacles in overcoming Citarum river water pollution is determining the location that has the highest pollution level. So far away the tools and research related to the detection of pollution locations are very minimal and still use manual measurement methods. In this study a system was built to determine the location of accurate pollution and based on the Internet of Things (IoT) which is able to carry out data retrieval continuously and realtime. Data obtained from IoT readings are then classified using fuzzy inference system method type Mamdani with basic rules that can be interpreted, intuitively and widely used specifically to support decision making with a high degree of accuracy. Validation of the system built with a comparison device (conventional device) obtained the tolerance of accuracy of data reading by the system hardware that was built showed pH 3.94%, TDS 4.92% and temperature 1.84%. The results obtained from testing based on the test scenario, the classification accuracy level shows an average accuracy of 92% with a tolerance value of the system error of 4% at each location point. The area at the coordinates (107.632836 -6.974593) was detected as the most polluted area with moderate polluted river pollutants.

Keywords: location detection of pollution, river water quality, internet of things, fuzzy inference system.