

ABSTRACT

Water is one of several natural resources that are very important for living things to survive. The quality of water, especially river water, needs to be maintained to reduce the risk of pollution that will have an impact on living things and the environment. Therefore, a river water quality monitoring system is needed to check in real time the quality of river water. In this study, a river water quality monitoring system based on the Internet of Things (IoT) will be created. Parameters used to determine the quality of river water are pH, temperature (oC), and turbidity (NTU). This monitoring system is made using Arduino Nano as a microcontroller, NodeMCU ESP8266 to send data to the firebase, pH-4502C sensor to measure pH levels, temperature sensor DS18B20 to measure water temperature and turbidity sensor SEN0189 to measure water turbidity. The data communication used for data transmission uses WiFi, while the monitoring process used uses the Android application. The results of the system test are good, where all sensors can function with an accuracy value above 90%. In QoS (Quality of Service) testing using WiFi with a distance of 1-10 meters, the average Throughput is 6301.1 bit/s, Delay is 0.32 s, Packet loss is 0% which indicates that no Packet s are lost.

Keywords: Water Quality, Internet of things (IoT), WiFi, Android Application