

## ABSTRACT

*Currently the use of water by the community still uses manual calculations, it makes people feel lazy in calculating the cost of using water that they have used. As for the problem of water turbidity that occurs in several regions, often this is considered insignificant, but without realizing it using water in a dirty state will invite several diseases.*

*Therefore, this final project will try to make a microcontroller device, which uses several sensors such as the Sensor flowmeter and turbidity sensor as input for Arduino which functions as a water discharge counter and reads water turbidity. Then the microcontroller will read the process of the two sensors that have been programmed and the results of the process will be approved in two ways that is wirelessly from Arduino to LCD that uses an wireless serial port HC 12 and that information is also displayed on the application. In sending data to the application, the Wifi ESP8266 module is used which will use the Wifi network as a medium for sending data taken from the microcontroller process. The display on the LCD and the Application will display the cost of use and water quality.*

*Based on the results of tests that have been carried out, water usage and quality monitoring tools displayed on the LCD and application are running well. The monitoring function of water usage and quality has reached 96% in 10 times the testing of the truth of the control data by having an average accuracy of 2.31%. Testing delay tool to the application in receiving data obtained 6.9sc results to upload data to firebase after the sensor reads and sends data to the database. The accuracy of the tool with the application has also been 96% of the 10 tests using mineral water, the average Ntu value is 6.09 and has a delay from the tool to the application of 6.9s, while testing using water that has been mixed with flour 50gr has an average value of 40.61 and has a delay from the tool to the application 8.9s.*

***Keywords: Water, Cost, Arduino, ESP8266, Sensor flowmeter, LCD, Turbidity Sensor, wireless serial port HC 12, Application.***