

ABSTRACT

High rainfall is accompanied by several factors such as littering that is disposed of carelessly, and the lack of catchment areas which are the main causes of flood disasters. Coupled with the increasingly frequent intensity of floods, this flood issue is an emergency that needs to be resolved immediately. This is done to minimize losses caused by floods. One effort that can be done is to design a device that can measure the water level to detect an anomalous rise in water early. This tool function as a warning to the user regarding the impending flood disaster. The design of the tool then becomes the focus of this research. The designed tool is expected to be able to send measurement data in real-time and can send early warnings to communities around flood-prone areas to minimize the risks that occur due to flood disasters. The location in this study was carried out in the Citeureup River, Bandung Regency. The measurement results were obtained from the use of ultrasonic sensors, the average water level in the Citeureup River was 7 cm. Data transmission in this tool uses the SIM800L module with normal delivery every 10 minutes to websites and applications that have been made. Delivery accuracy by this tool is 77%. There are two categories of early warning generated by this tool, namely the normal and alert categories. When the warning shows the Alert category, where the water level exceeds 100 cm, SIM800L sends an emergency message via Whatsapp and SMS to the designated number and displays a danger notification on the application.

Keywords: Early Warning, River, Ultrasonic Sensor, Water Level Sensor