Design of IOT-Based Flood Early Warning System and Automatic Dam Gate Control

UNDERGRADUATE THESIS

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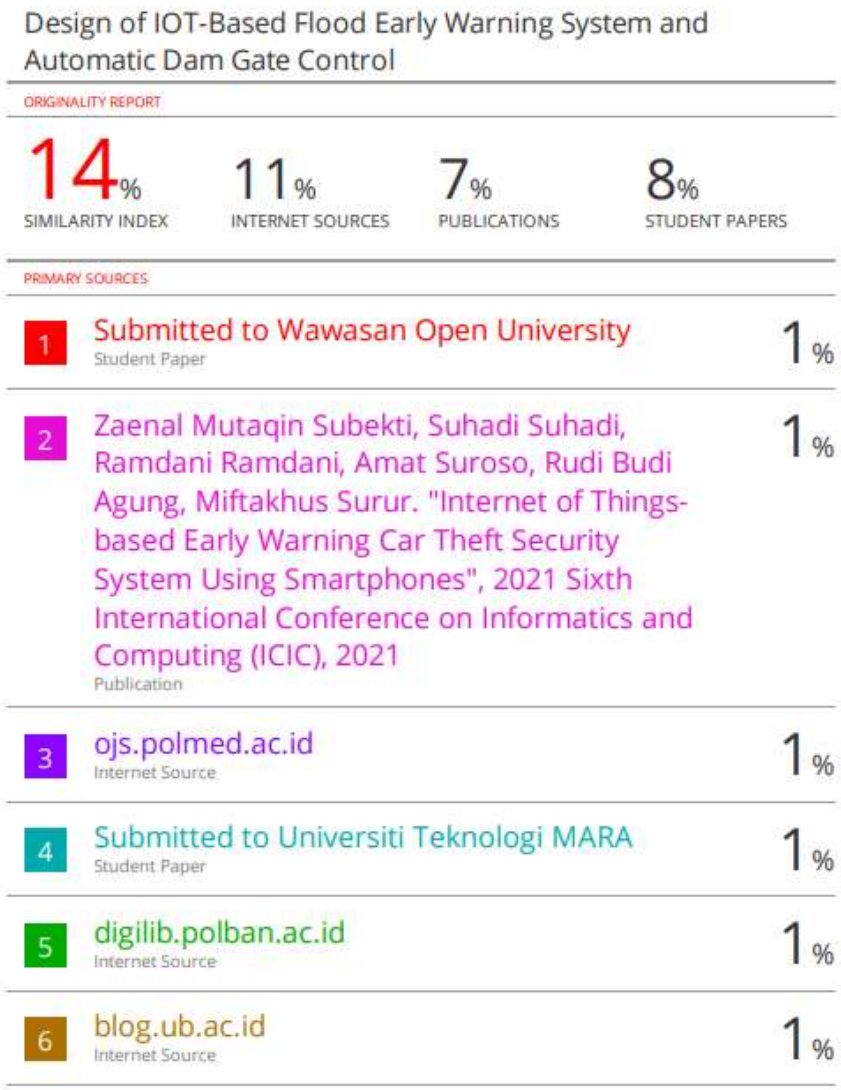
TURNITIN TEST RESULT



Design of IOT-Based Flood Early Warning System and Automatic Dam Gate Control

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ABSTRACT

Flooding is still a problem in big cities in Indonesia, one way that can be done to minimize the occurrence of floods that will come unexpectedly is to provide information earlier before a flood occurs. The research being conducted this time, “IoT Design of Website-Based Flood Early Warning Devices and Automatic Dam Gate Controllers. The design of this Flood Detection System is an IoT project based on the esp8266 microcontroller which is integrated with a web application and mySQL database. The working principle of this system is that a sensor that is installed perpendicularly at a certain height above the water level will emit ultrasonic waves with a speed of 340 m/s in the air. The waves will then hit the surface of the water and bounce back towards the sensor. In addition, the sluice at the dam will also process an ultrasonic sensor which functions as a distance meter when the water level reaches its highest point, and the servo motor as the sluice will carry out the command to raise the sluice automatically and simultaneously with the sound of a siren marking the water point. the characteristics of the HCSR-04 can detect flood water levels with an accuracy rate of 99.4% and servo motor 0. when the position of the dam is in a state of danger. Tests in the lab show that the system built can record water levels in real-time which can be monitored from the monitoring website, , the error rate that occurs on the sensor is at least 0.5% so that the performance of the equipment and system goes well.

Keywords: Internet of Things, Nodemcu Amica Esp 8266, HCSR-04, Dam Control, Flood Early Warning

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