ABSTRACT

Flood disasters in Indonesia often occur due to the negligence of local residents to monitor the water level. Floods often hit housing in Indonesia. With the rapid development of technology that occurs, there are ways to cope flood disasters and minimize losses due to floods. Because the systematics of dams and ordinary water channels is less effective for the flood handling process in housing, then IoT based water pump and the tube reservoir can be used as alternatives in flood handling process that occurs in homeland.

The systematics used in this final project for handling floods in housing is to use a device that is connected to an ultrasonic sensor which also connected to the NodeMCU ESP8266 and a water suction machine that is installed in the lowest land in a housing and connected to a reservoir tube and water channel with water suction pump. When the flood happening, the buzzer that attached to the flood detection device will sound according to the flood height status level. To maintain the lack of water level, residents can measure trough an mobie application which is also equipped with an water level high monitoring feature. If the resident want to see flood records that occurred in the previous time, resident can see it in the house manager database that has been provided.

The result of this final task is a tool that can read water levels that can be accessed through an android-based mobile app called Reservoir. This tool works by sending data to the firebase over a Wi-Fi access network. Reservoir application can be accessed by all residential residents through the account registration system first and then can use the available features. The network quality value in this final task gets an average delay value in the morning, afternoon, afternoon, and night of < 0.2 seconds, a throughput value above 21,000 bits / second, and gets a packetloss value of 0% where all three parameters meet the standardization of itu-T G.1010.

Keywords: Reservoir Tube, IoT, Cellular Application, Firebase Database, Water suction pump, ultrasonic sensor.