ABSTRACT

Natural disasters are natural events that have a large impact on the human population. One of the many natural disasters in Indonesia, especially West Java, is flooding. Flooding is caused by rain that occurs continuously and the ability of the soil that is not optimal in absorbing water. Not a few areas affected by flooding suffered many losses, including road access was cut off, houses were submerged, and economy became paralyzed.

By using technology processes, technology can be one solution in resolving and reducing the impact of flood problems. In this dissertation, we will discuss one solution to reduce the impact of flooding by utilizing technology, which will be used as a tool to provide early warning of flood hazards using Internet of Things (IoT) technology.

Sensor of Early information about flood hazard will be presented using an water height sensor, microcontroller. Sensor to detect water altitude by using theree sensors namely transistors, reed switches and ultrasonic. Data obtained from sensors will be managed by a microcontroller. The microcontroller will read the sensor data that will be stored in the database and send messages to the user's smartphone via the IoT platform, ThingSpeak. A reliable message by the ThingView application on smartphones and the ThingSpeak website. With the provisions of an information system that allows people to adjust themselves to the maximum possible responsibility. And includes information on conditions in the area.

From our research about the early warning tool for floods, reed switches is better than transistors and ultrasonic. In addition, by using ThingView, the people will be easy to view the water level charts. Then, when the sensor receives data, the data will be stored on Arduino and sent to ThingSpeak by ESP8266-01 with a Wi-Fi network. Then the data can be viewed from a smartphone with the ThingView application and open the ThingSpeak website on your 's laptop / computer.

Keywords: Flood, flood hazard detection, Transistor, Ultrasonic, Reed switch, Microcontroller, Internet of Things.