

## **ABSTRACT**

The problems that occur around the river include the occurrence of water overflows that can cause flooding and the quality of water that is polluted by both industrial and household waste. The causes of this problem are very complex, ranging from silting rivers, indiscipline in the community in disposing of waste into rivers, and industries that secretly dispose of waste directly into the river. Although the government has made fairly strict rules and imposed sanctions on violators, this problem still continues.

This is due to the large number of rivers and the uncertain time of waste disposal. Therefore, it is necessary to check water quality and river water discharge periodically and continuously. This study aims to mitigate floods by utilizing Internet of Things (IoT) technology by monitoring the height and speed of river water so that it can provide early detection of the arrival of floods and also measure water quality parameters in the form of pH and turbidity periodically to monitor water quality. To send measurement data, LoRa is used and data processing uses an Arduino Uno microcontroller which is combined in a Printed Circuit Board (PCB).

All measurement data will be sent to Antares as a cloud service to store data then displayed on an Android-based smartphone. The research method used in this research is to use literature study, which then goes through the design and manufacturing stages of the tool, then testing and finally through an analysis of the work of the system. From the results of the study, it was found that the tool designed to have a large enough accuracy rate for each sensor, namely the pH sensor of 99.73% and the turbidity sensor of 92.98%.

**Keywords: Monitoring System, River Water Quality and Discharge and Internet Of Things (IOT)**