**EARLY FLOOD WARNING SYSTEM FOR DISASTER MANAGEMENT**

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| **GUIDE** | **STUDENTS NAME** | |
| Ms.D.PRIYA | Gowtham S | (19DC07) |
|  | Kaliraj M | (19DC09) |
|  | Karan Babu B | (19DC10) |

There are several types of natural disaster and one of the most vulnerable is Flood Disaster, which will have large consequences for individuals & Communities. Whenever, flooding happens, people living near the riverbank and downstream area are affected severely than others. They need to be alerted much earlier to have extra time to evacuate immediately. The main objective of the proposed system is to develop an early warning system to detect flood and send notifications to the authority so that they can evacuate people earlier and avoid loss of life and property.

This project is designed on the IoT based platform, where data from the sensor is collected at the Microcontroller and alert is generated and transmitted as SMS to Smartphone’s. Our proposed system provides such information so that people can avoid false news. Also the proposed system makes use of voice call as it is helpful for people who do not know how to read the text message.

The main sensors used for our project are water level sensor and water flow sensor. Water level sensor is used to check whether the water reaches a certain level, and then it triggers the Arduino board to send the alerting messages. It consists of a circuit board, which can be programmed (referred to as a microcontroller) and a ready-made software called Arduino IDE (Integrated Development Environment), which is used to write and upload the computer code to the physical board. Then it is passed to GSM module for generating SMS aware of the residents, as a warning to take care and take precautions. If the water continues to rise and reaches the edge level, it's considered now as dangerous, an alert SMS once more sent to the resident and authorities. Water flow sensor is used to measure the flow level of the water. And then the details are displayed in LCD display continuously and a copy of the data is sent to server and to the user mobile or laptop as a notification.

LCD Display

Arduino UNO

Microcontroller

Water level sensor

GSM Module

Mobile/ Laptop

Water flow sensor

Server

POWER SUPPLY

Arduino UNO

Microcontroller