FLOOD MONITORING AND EARLY WARNING SYSTEM

Internet of things

**INTRODUCTION:**

Floods are the natural disasters characterized by the overflow of water onto normal dry land, causing extensive damage to properties, infrastructure and in some cases, loss of human lives. Efforts to mitigate and manage floods include the development of flood monitoring and early warning system.

**PROBLEM DEFINITION:**

The IoT-based flood monitoring and early warning system aims to collect the real time monitoring of the hydrological data, including the water levels, rainfall and the weather condition in the waterbodies. Based on the data, increase in the water level is noticed and early warnings are provided to the public. This project involves the deployment of the sensors, data processing and warning mechanisms.

**PROBLEM OBJECTIVE:**

The objective of this project is to design, develop and monitoring the water level rise and deploying the early warning system using the connected sensors and devices. The development and the implementation of this project is crucial for reducing the devastating the impacts of floods on communities and infrastructure.

**IDEA:**

* **Deployment of sensors**

The deployment of sensors for flood monitoring and early warning systems is crucial for accurately collecting the data on water levels, weather conditions and other relevant parameters to provide timely responses.

SENSORS USED:

* Water level sensors
* ESP 32
* Rainfall sensors
* Weather sensors
* Temperature and humidity sensors.
* **Integrating the data**

The sensors collect the data continuously and transmit into a central server or cloud platform using wireless communication protocols like WIFI, Cellular. The collected hydrological data is processed and analyzed and the warning system is deployed.

* **Monitoring**

The sensors provide the information over the hydrological details. On detections of conditions of the flooding, the system predicts the amount of time that would take to flood in a particular area and thereby alerts the villagers/areas that could be affected by it by using the early warning system**.**