PROJECT TITLE : FLOOD MONITORING SYSTEM

TEAM MEMBERS:

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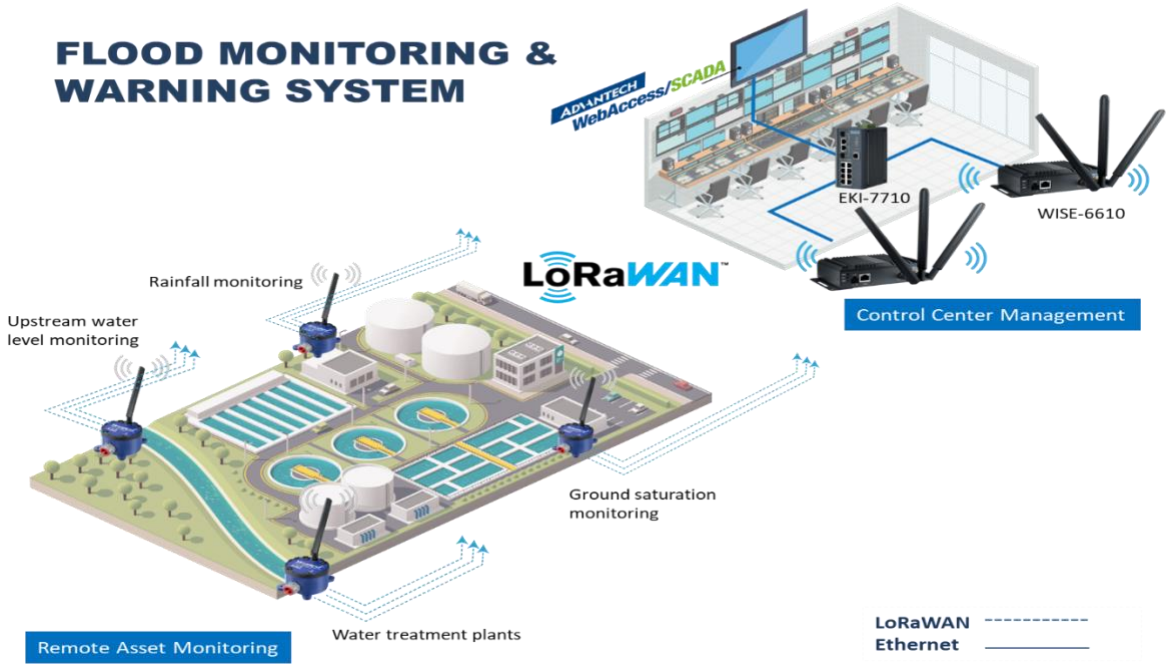
PHASE 1 PROJECT SUBMISSION :

Project Definition :

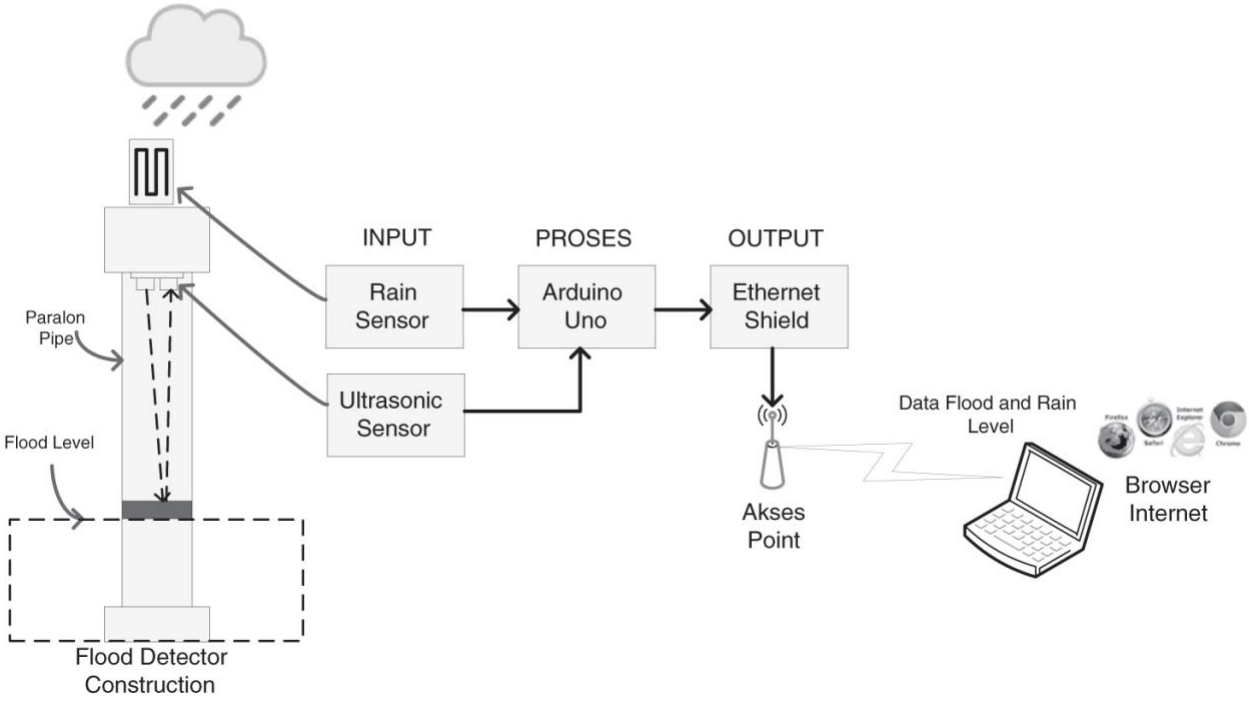
This real time monitoring system is developed to monitor the changes of water level and send an alert to user via a Global System for Mobile Communication (GSM) cellular network immediately whenever a system defined alert condition occurs.



OBJECTIVE :

Flood monitoring serves a crucial purpose: to track and assess the water levels in rivers, lakes, and other bodies of water to predict and manage potential flooding. The primary objective is to provide early warning systems, allowing people in at-risk areas to evacuate and authorities to implement preventive measures. It helps minimize the impact of floods on communities, infrastructure, and the environment. Additionally, flood monitoring supports research and data collection for better understanding and planning in flood-prone regions.

The objective of flood monitoring is to track and assess the conditions related to flooding in a particular area. This includes monitoring river levels, rainfall, soil moisture, and other relevant factors to provide early warnings and aid in disaster preparedness. By keeping a close eye on these variables, authorities can anticipate potential flood events, mitigate their impact, and facilitate timely evacuation or emergency response efforts. Essentially, flood monitoring aims to enhance public safety and minimize the damage caused by floods.



IoT SENSOR DESIGN :

Water level sensors: These sensors measure the depth of water at a given location. There are several different types of water level sensors available, including ultrasonic sensors, float switches, and pressure sensors.

Rainfall sensors: These sensors measure the amount of rainfall in a given area. There are two main types of rainfall sensors: tipping bucket rain gauges and weighing rain gauges.

Environmental sensors: Other environmental sensors that may be used in IoT-based flood monitoring systems include temperature sensors, humidity sensors, and wind speed sensors.

REAL TIME TRANSIT INFORMATION PLATFORM :

By tracking the location of buses, trains, and other public transportation vehicles, a real-time transit information platform can identify areas where floodwaters are causing disruptions to service. This information can then be used to warn residents and businesses in these areas and to help them plan alternative transportation arrangement. In the event of a major flood, a real-time transit information platform can be used to provide information on emergency transportation options, such as bus shelters, designated evacuation routes, and emergency pick-up and drop-off locations.

This information can be disseminated to the public through a variety of channels, such as the platform's website, social media, and mobile apps. A real-time transit information platform can be used to help coordinate the evacuation of residents and businesses from flood-prone areas. By tracking the location of public transportation vehicles and the number of people on board, the platform can help to identify areas where additional vehicles are needed and to ensure that evacuation routes are not overloaded.

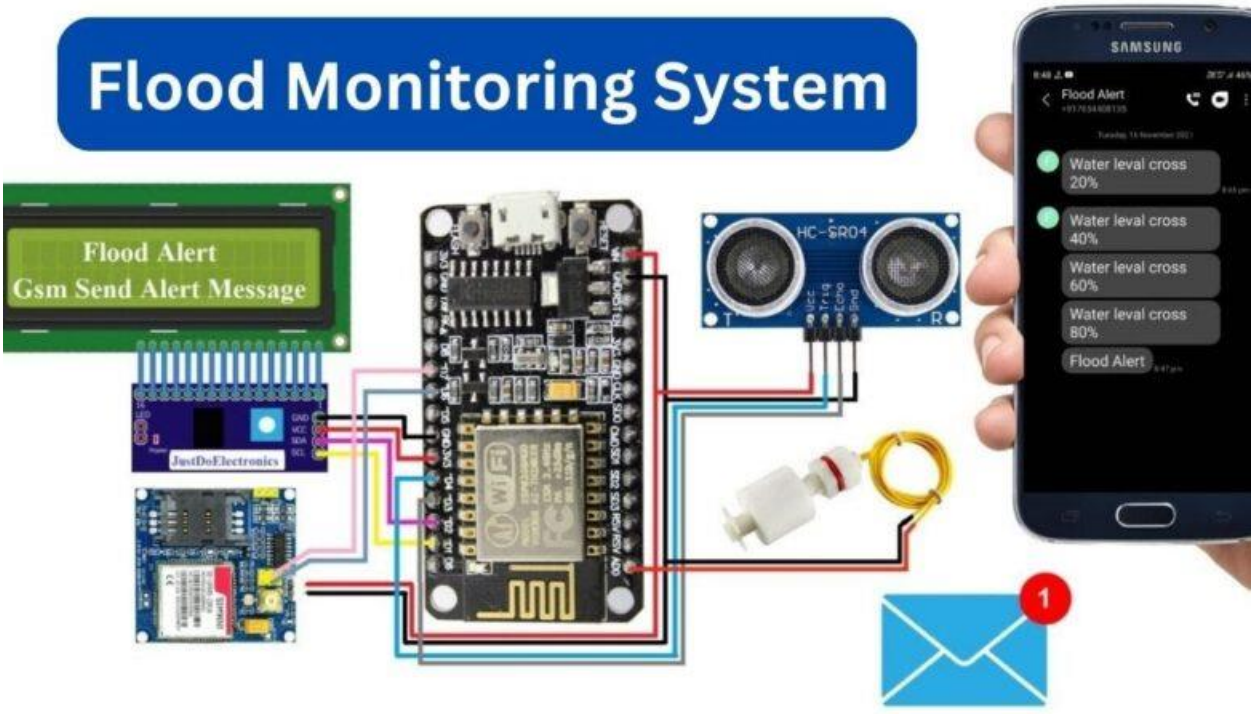
INTEGRATION APPROACH :

An integration approach in flood monitoring is a holistic approach that combines different data sources, technologies, and disciplines to provide a more comprehensive and accurate picture of flood risk. This approach can help to improve early warning systems, flood forecasting, and flood response. By integrating data from multiple sources, such as ground-based sensors, satellite imagery, and weather

forecasts, integrated flood monitoring systems can provide more accurate and reliable information about flood risk.

Integrated flood monitoring systems can cover a wider area than traditional flood monitoring systems, which are often limited to specific locations. This is because integrated systems can leverage data from a variety of sources, including remote sensing data. Integrated flood monitoring systems can provide earlier warning of potential floods, which gives people more time to evacuate and prepare. Integrated flood monitoring systems can help to improve flood response by providing real-time information about the location and extent of flooding. This information can be used to direct resources to where they are most needed.

There are a number of different ways to implement an integrated approach to flood monitoring. One common approach is to use a geographic information system (GIS) to integrate data from multiple sources and create flood hazard maps and inundation models. These maps and models can then be used to identify areas at risk of flooding and to develop flood mitigation and response plans.



CONCLUSION:

IoT-based flood monitoring systems are a valuable tool for flood risk management. By providing real-time data on water levels, rainfall, and other environmental conditions, IoT-based systems can help to reduce the damage and loss of life caused by floods.

Thank You!