



MALINENI LAKSHMAIAH WOMEN'S ENGINEERING COLLEGE (AUTONOMOUS)

Accredited by "NBA" & "NAAC A" Grade | Approved by AICTE, New Delhi & Affiliated to JNTUK, Kakinada
Pulladigunta(V), Vatticherukuru(M), Guntur(Dt), A.P.



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

= BY MAKE SKILLED TEAM

STORM SENTRY

Presented By:

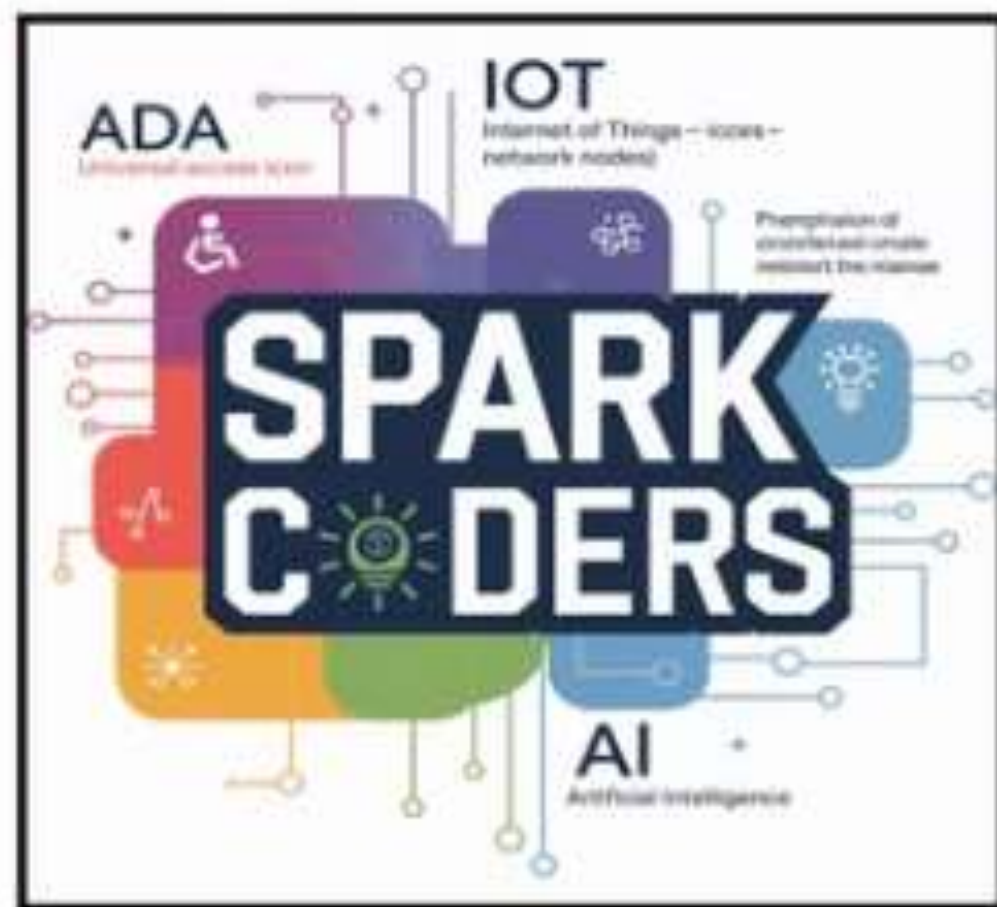
S.Meghana

S.Rohini

V.Soniya

Y.Sirisha

S.Jhansi

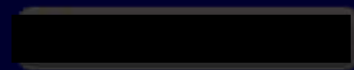




Flood Alert System: Protecting Low- Lying Communities

INTRODUCTION:

"Floods are one of the most destructive natural disasters, affecting millions of people worldwide every year. Rising global temperatures, heavy rainfall, and urbanization have increased the frequency and severity of flooding events. The consequences are devastating: loss of life, property damage, displacement, and long-term economic and environmental impacts."



PROBLEM STATEMENT:

When floods are occurring it is taking more time to receive the information. So that the people of the particular area which is in lower-level effects more damage is occurring. If the alert message is received then people will reach to the safe places.



EXISTING SOLUTION:

The main tools used to detect heavy rainfall associated with flash floods are

- Satellite
- Lightning observing the systems
- Rain Gauges.





PROPOSED SOLUTION:

Monitoring Rainfall Levels

1

Real-Time Data Collection

Rainfall levels are constantly monitored using a network of weather stations equipped with sensors and data loggers.

2

Data Transmission

The collected rainfall data is transmitted in real time to a central processing unit, ensuring the system's responsiveness.

3

Data Analysis

The central unit analyzes the incoming data, identifying any significant rainfall patterns or trends that may indicate a potential flood risk.

Rainfall Intensity

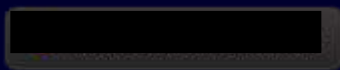
The system analyzes rainfall intensity and duration to assess the likelihood of flooding. Heavy or prolonged rainfall increases flood risk.

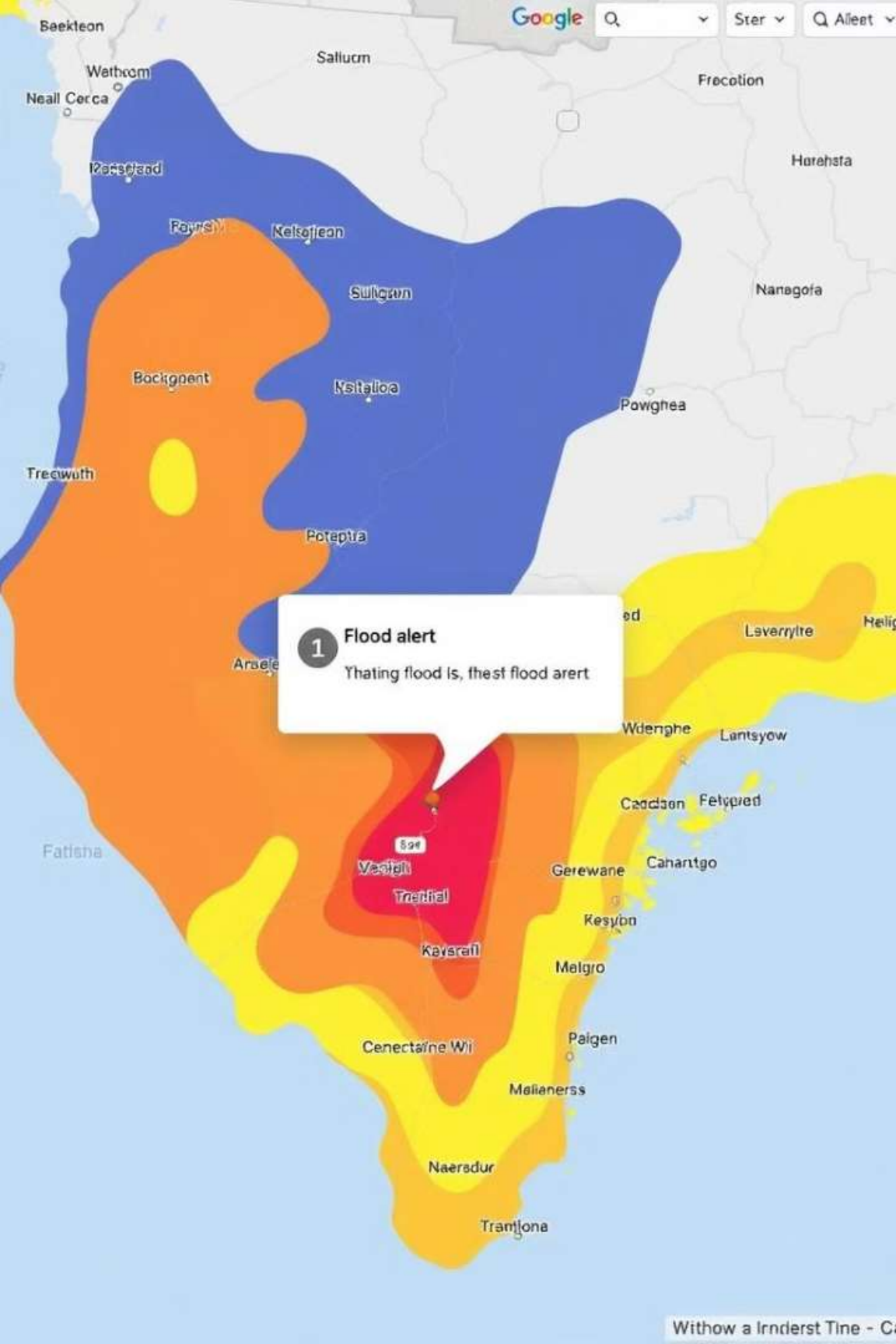
River Levels

River levels are constantly monitored, and historical flood data is used to predict the potential impact of current rainfall conditions.

Terrain and Infrastructure

The system considers the terrain and infrastructure in low-lying areas, including the presence of drainage systems and flood barriers.





Communicating Alert Messages

- 1

Alert Thresholds

The system has pre-defined alert thresholds that trigger notifications based on the severity of the predicted flood risk.
- 2

Multi-Channel Communication

Alert messages are disseminated through a combination of channels, including SMS, mobile apps, website updates, and local broadcasts.
- 3

Targeted Dissemination

Alerts are sent specifically to residents in low-lying areas at risk of flooding, ensuring that information reaches the intended recipients.
- 4

Timely and Accurate Information

Alert messages provide timely and accurate information about the potential flood threat, allowing communities to prepare accordingly.

PROPOSED SOLUTIONS: Coordination and Collaboration

- ### Local Authorities

The flood alert system works closely with local authorities to ensure that emergency response plans are in place and coordinated.

Emergency Services

The system provides real-time information to emergency services, allowing them to mobilize resources and respond effectively to potential flooding.
- ### Community Leaders

Community leaders play a crucial role in disseminating information and assisting residents in preparing for potential floods.



VALUE PROPOSITION:

Determining Gate Opening

1

Flood Risk Assessment

Based on the calculated flood risk, the system determines the number of dam gates that need to be opened to manage water flow.

2

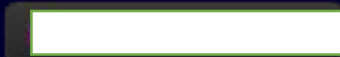
Gate Control

Automated or manual controls are used to open or close the dam gates based on the system's recommendations, ensuring efficient water management.

3

Water Flow Regulation

By adjusting the gate openings, the system regulates water flow to mitigate flooding, minimizing the impact on downstream communities.



FLOOD LE!RR[®]



Conclusion:

Effective Dissemination of Information



Public Awareness

Raising public awareness about flood risks and the importance of heeding alerts is crucial for community safety.



Accessibility

The system ensures that information is accessible to all residents, regardless of their technological capabilities.



Clear and Concise Messages

Alert messages are written in clear and concise language, using simple terms and avoiding technical jargon.



Regular Updates

The system provides regular updates on the flood situation, keeping residents informed about any changes or developments.



Continuous Monitoring and Updates

Data Collection

Continuous

Analysis

Real-time

Alert Updates

Regular

System Maintenance

Ongoing



There we use two type of sensor one is rainfall sensor and another one is ultra sonic sensor :

Rainfall sensor:

It is used to measure the presence intensity of rainfall

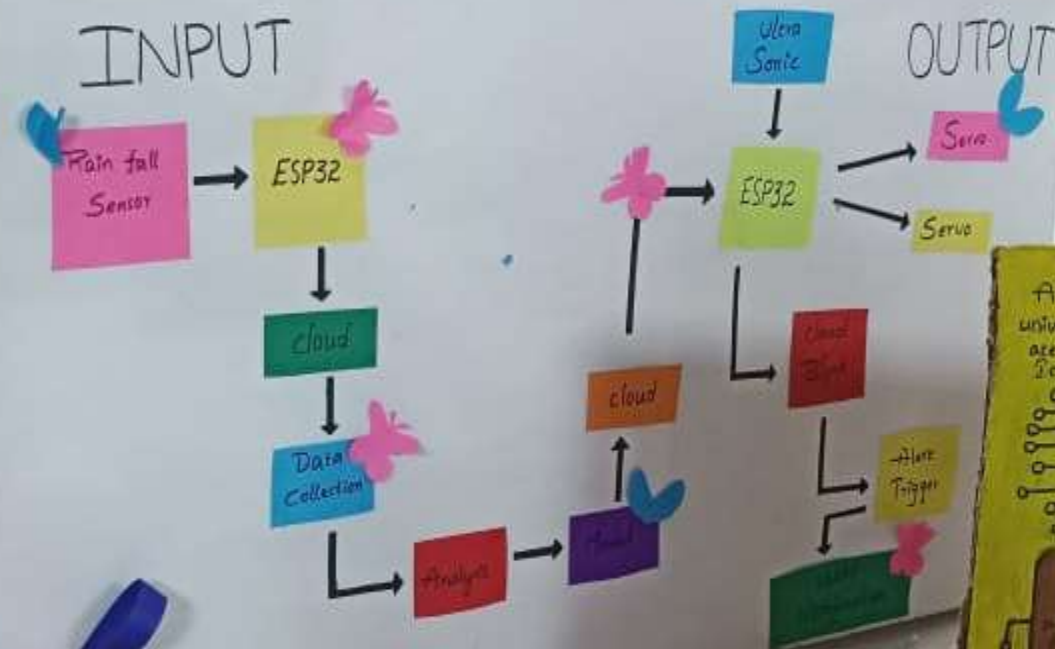
Ultra sonic sensor:

It is used to measure the distance between sensor and object.

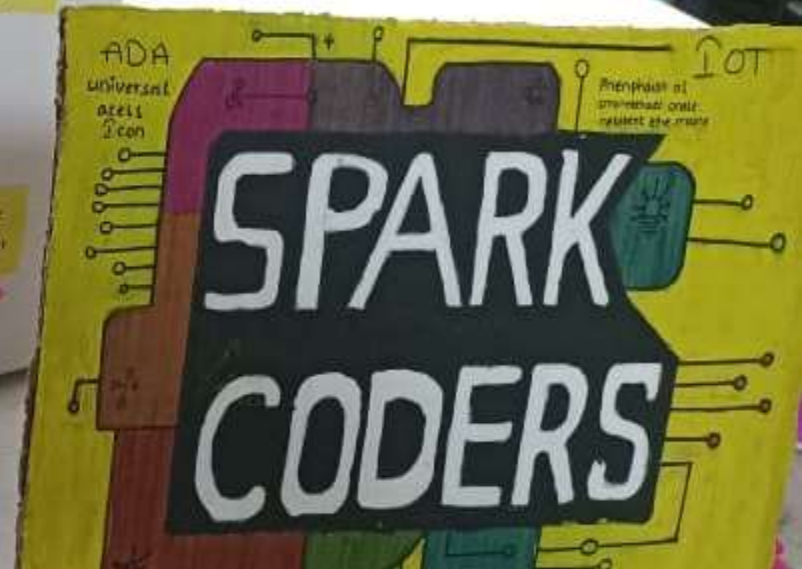


ARCHITECTURE

INPUT



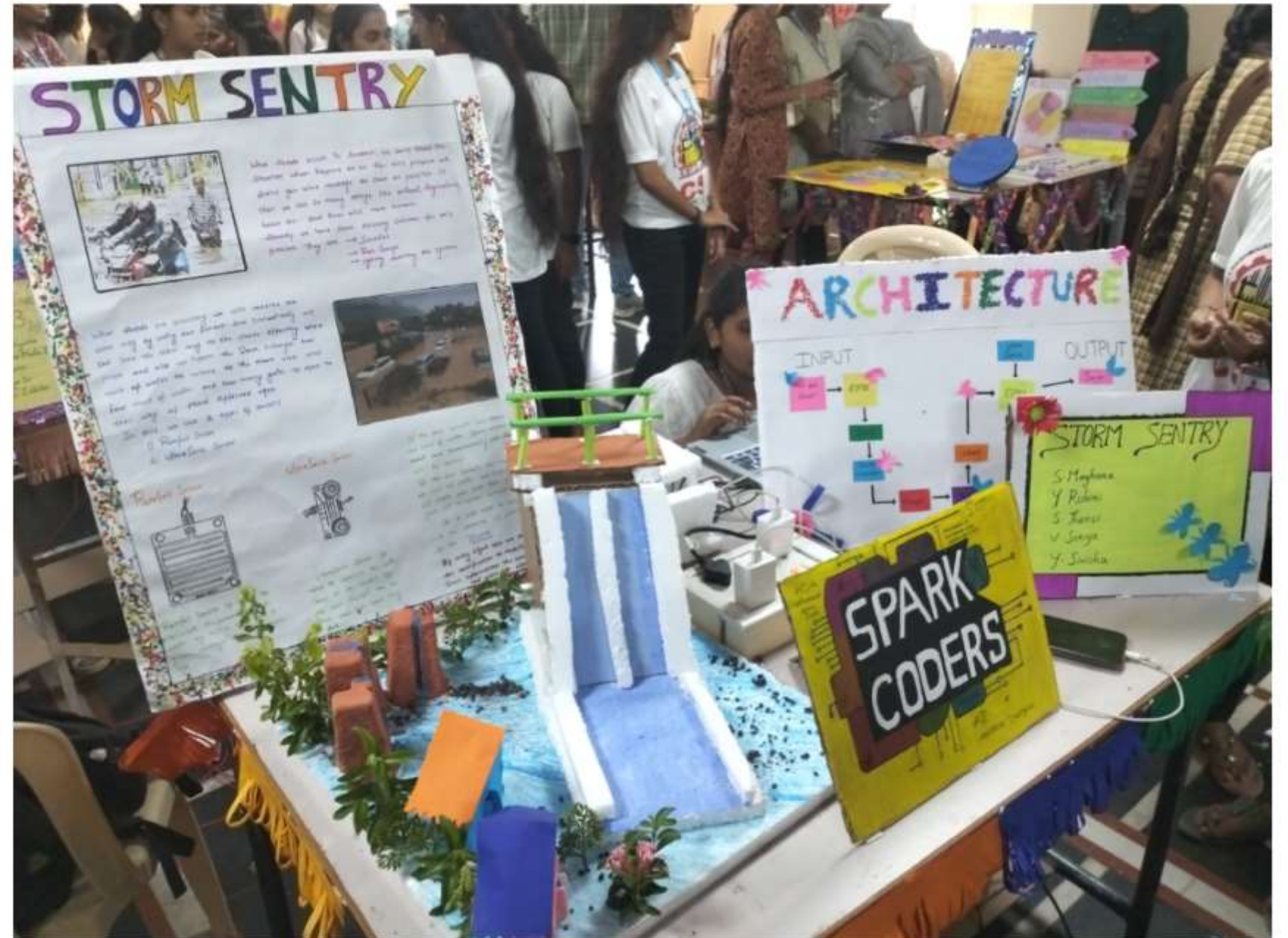
OUTPUT



PROTOTYPE:



TABLE PRESENTATION:



Thank you

