FLOOD MONITORING AND EARLY WARNING

Improving Public Safety and Emergency Response

TEAM MEMBERS:
1.912221104037-Rajesh S
2.912221104310-Siva surya V
3.912221104028-Loganathan M
4.912221104035-Pratheesh kumar G
5.912221104023-Kasinath K J

PROJECT OBJECTIVES

Real-time flood monitoring, early warning issuance, public safety, and emergency response coordination

Real-time Flood Monitoring

Continuous monitoring of water levels in flood-prone areas

Early Warning Issuance

Timely issuance of flood warnings to at-risk communities

Public Safety

Ensuring the safety of the public during flood events

Emergency Response Coordination

Facilitating effective coordination among emergency response teams

DEPLOYMENT OF IOT SENSORS TO MONITOR WATER LEVELS IN FLOOD-PRONE AREAS

1. Identify Flood-Prone Areas

2. Sensor Selection

3. Sensor Placement

4. Power Supply

5. Data Transmission

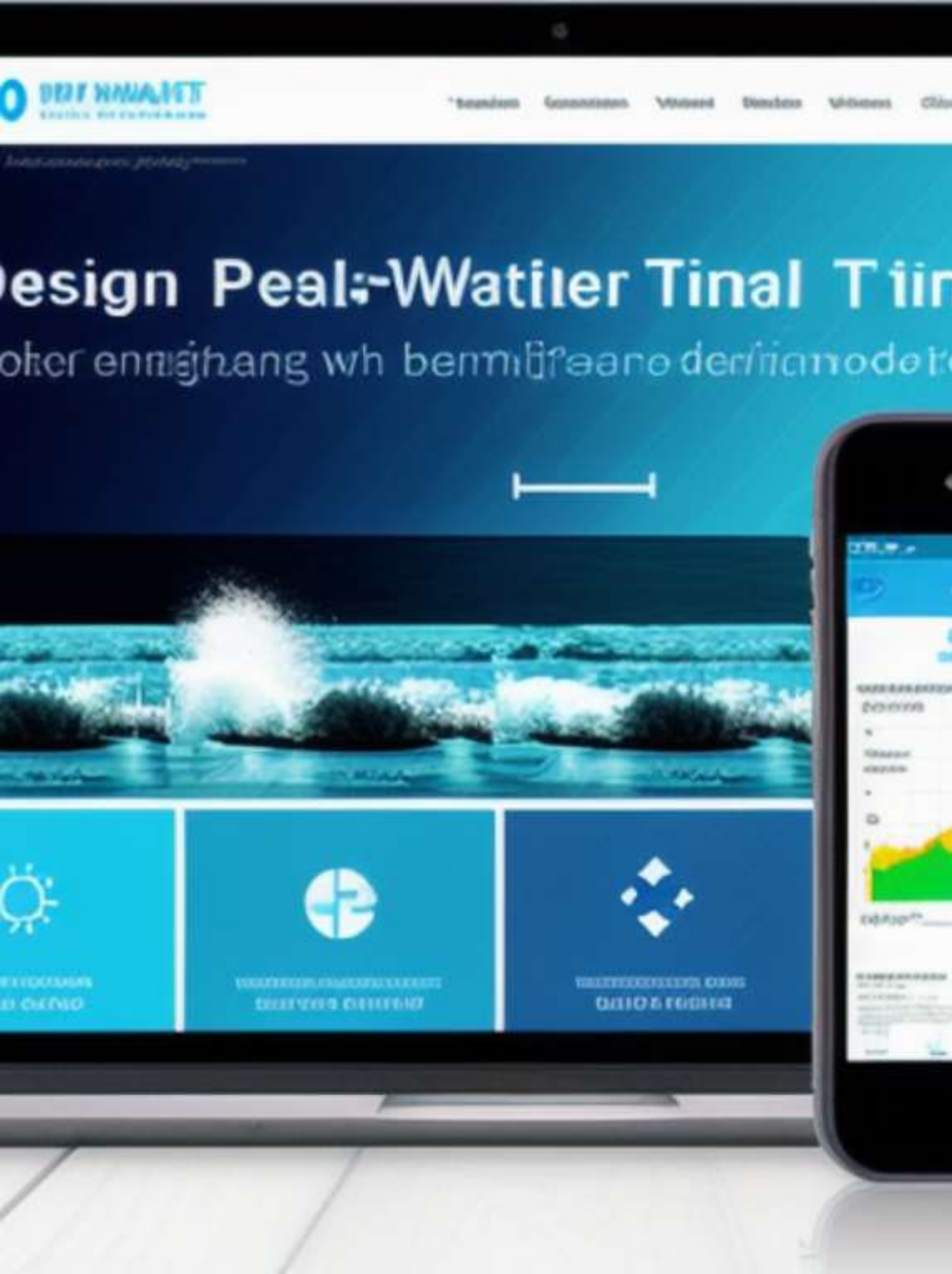6. Data Collection and Storage

7. Early Warning System

8. Data Accessibility

9. Maintenance and Calibration
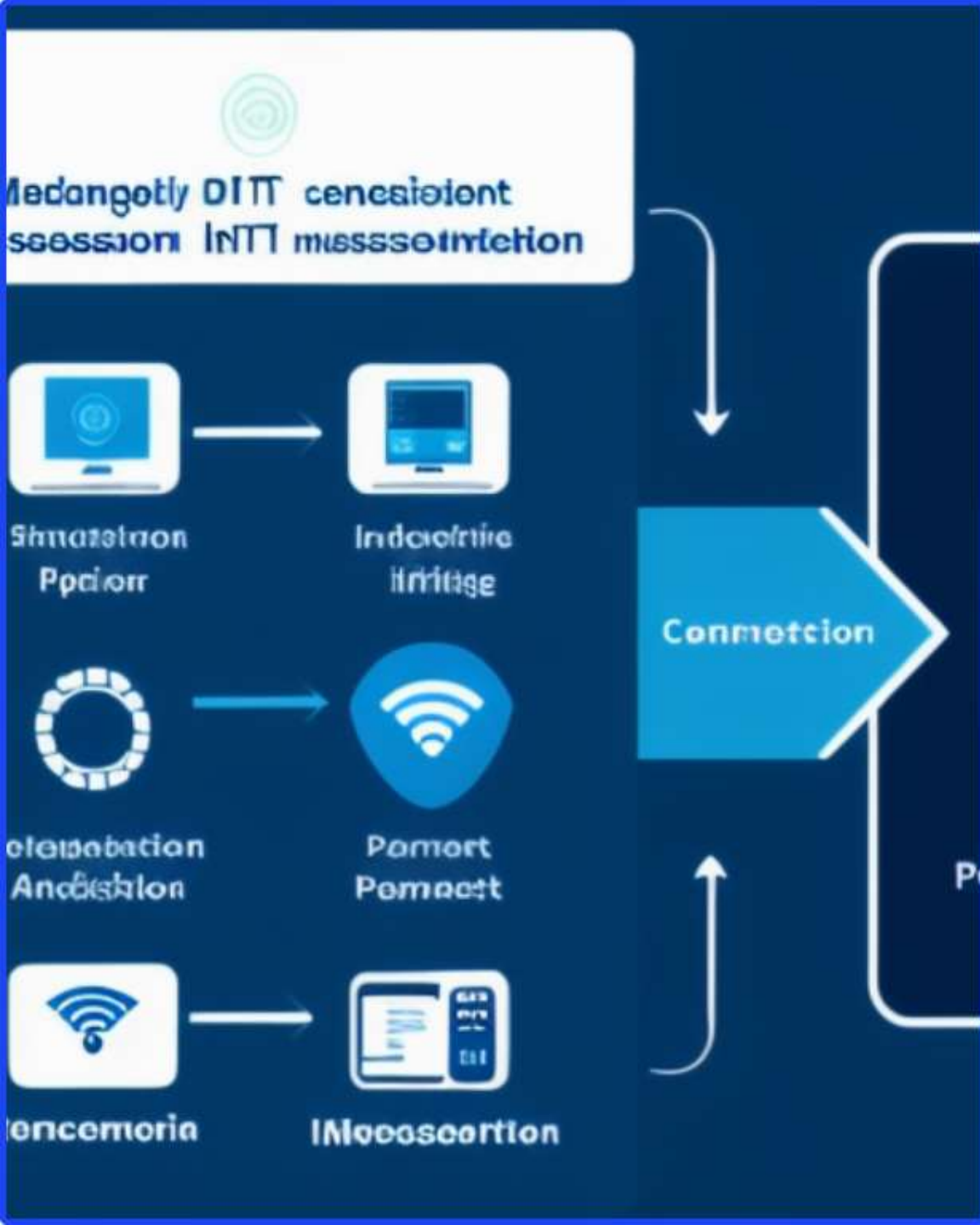
10. Evaluation and Reporting

WEB-BASED PLATFORM TO DISPLAY REAL-TIME WATER LEVEL DATA AND ISSUE FLOOD WARNINGS

1. User Interface (UI)

2. Backend Functionality

3. Security and Data Privacy

4. Accessibility

5. Mobile Responsiveness

6. Scalability

7. Backup and Redundancy

DETERMINE HOW IOT SENSORS WILL SEND DATA TO THE EARLY WARNING PLATFORM

common methods for IoT sensors to send data to the early warning platform:

CELLULAR NETWORKS

LOW-POWER WIDE-AREA NETWORKS (LPWAN)

SATELLITE COMMUNICATION

WI-FI AND ETHERNET

BLUETOOTH AND ZIGBEE

MESH NETWORKS

NARROWBAND IOT (NB-IOT)

POWER LINE COMMUNICATION (PLC)

HYBRID APPROACHES

EDGE COMPUTING AND FOG COMPUTING

Conclusion

Flood monitoring and early warning systems are crucial for reducing the impact of floods on communities and infrastructure. They enable timely evacuation and emergency response, and allow for effective planning and mitigation measures to be put in place. Flood risk assessment plays a key role in identifying vulnerable areas and populations, while flood insurance and financial protection help to mitigate the economic impact of floods.

However, there are still many challenges to be addressed in flood monitoring and early warning, emergency response, mitigation measures, and financial protection. These include issues related to data collection and analysis, communication and dissemination of warnings, coordination among stakeholders, and funding and resource allocation.

In conclusion, flood monitoring and early warning systems are essential for protecting lives and property from the devastating effects of floods. While there are many challenges to be overcome, ongoing research and development efforts offer hope for more effective and sustainable flood management in the future.