REMOTE GAS PIPELINE TUNNEL TEMPERATURE MONITORING SYSTEM

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Problem Statement

To develop a Remote Gas Pipeline Tunnel Temperature Monitoring which detect and monitor anomalies of leaks, and temperatures in gas Pipelines. This IoT Based System Assists in Monitoring Temperature Levels in the Confined Space of Tunnels to Avoid the Human and Property Loss.

Abstract

- This project aims to implement a remote gas pipeline tunnel temperature monitoring system using IoT technology.
- IoT sensors deployed in the tunnel capture temperature data and transmit it instantly to a central control system, facilitating prompt detection of anomalies.
- Remote access allows stakeholders to monitor temperature conditions, receive alerts, and make informed decisions from anywhere which improves safety, compliance with regulations, and cost optimization through efficient resource allocation and reduced maintenance costs.

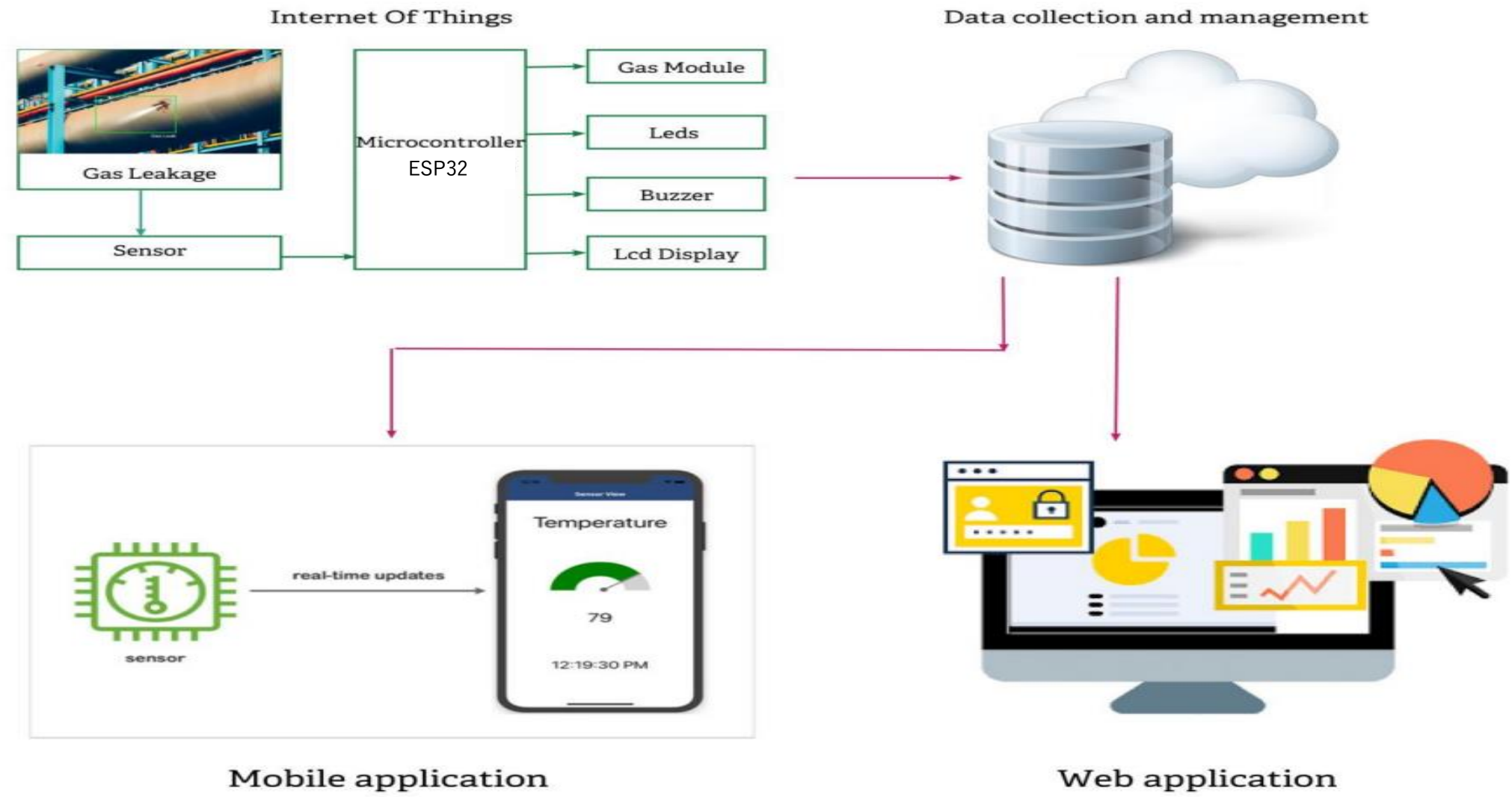
Objectives

- The objectives of our project are to achieve real-time monitoring of temperature conditions, enable remote access to monitoring systems, enhance safety and compliance, and optimize costs.
- Enhance safety and compliance by promptly detecting temperature fluctuations and hazardous conditions that may compromise pipeline integrity.

Proposed System

This system is completely automated which make alerts through application if specified operating limits of the system exceeds .The slide potentiometer measures the position of physical barriers, the servo motor controls the movement of mechanisms like air vents, and the biaxial stepper motor enables precise positioning of sensors for temperature monitoring

Architecture Diagram



Advantages

- It reduces overall maintenance costs.
- It helps to prevent accidents.
- Remote monitoring systems can collect data on pipeline temperatures over time, allowing for better analysis and decision-making.

Dis-advantages

- This system may be vulnerable to cyber attacks such as hacking.
- Transmitting data over long distances, which can be challenging in areas with poor connectivity.
- Temperature sensors and data acquisition devices require regular maintenance to ensure accurate readings.

Conclusion

Implementing remote temperature monitoring systems is essential to safeguard gas pipeline infrastructure and maintain a reliable supply of gas.Thus, the focus of our system is to prevent accident in industries and it also avoids the wastage of gas.

THANKYOU !!