BATCH-16

PROJECT NAME : AIR AND NOISE POLLUTION MONITORING SYSTEM

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AIM:

To create an IOT Air and noise pollution monitoring system using raspberry pi pico for real-time data collection and remote accessibility.

PROBLEM DESCRIPTION: Devolep an IOT air and noise pollution monitoring systemusing raspberry pi pico for real-time data collection and remote accessibility.emphasize accuracy,cost-effectiveness,and ease of development.

PROBLEM STATEMENT:

Design an IoT-based air and noise pollution monitoring system that:

Measures air quality (pollutants like CO_2, VOCs) using sensors.

Detects ambient noise levels.

Transmits data to a central server for analysis.

Provides real-time alerts and suggestions for maintaining a healthy environment.

SCOPE OF THE SOLUTION:

- Monitor air quality (CO_2, VOCs, etc.) and noise levels.
- Transmit data to a cloud-based server.
- Generate alerts for abnormal pollution levels.
- Provide a user-friendly interface for visualization.
- Deploy the system in indoor or outdoor environments.

REQUIRED COMPONENTS:

- Air Quality Sensor (e.g., MQ-135): Measures pollutants in the air.
- Sound Sensor (e.g., LM-393): Detects ambient noise levels.
- Temperature and Humidity Sensor (e.g., DHT11): Monitors environmental conditions.
- Microcontroller (e.g., Arduino Uno): Processes sensor data.
- Wi-Fi Module (e.g., ESP8266): Enables remote data transmission.
- Power Supply (5V): Provides power to the system.

PROCEDURE IN TINKERCAD:

1. Open Tinkercad and create a new project.
2. Add components to the workspace: microcontroller, sensors, and Wi-Fi module.
3. Wire the components according to your circuit design.
4. Write code (if applicable) to read sensor data and transmit it.
5. Simulate the circuit to observe sensor readings and communication.
6. Validate the system's functionality.

SIMULATED CIRCUIT:
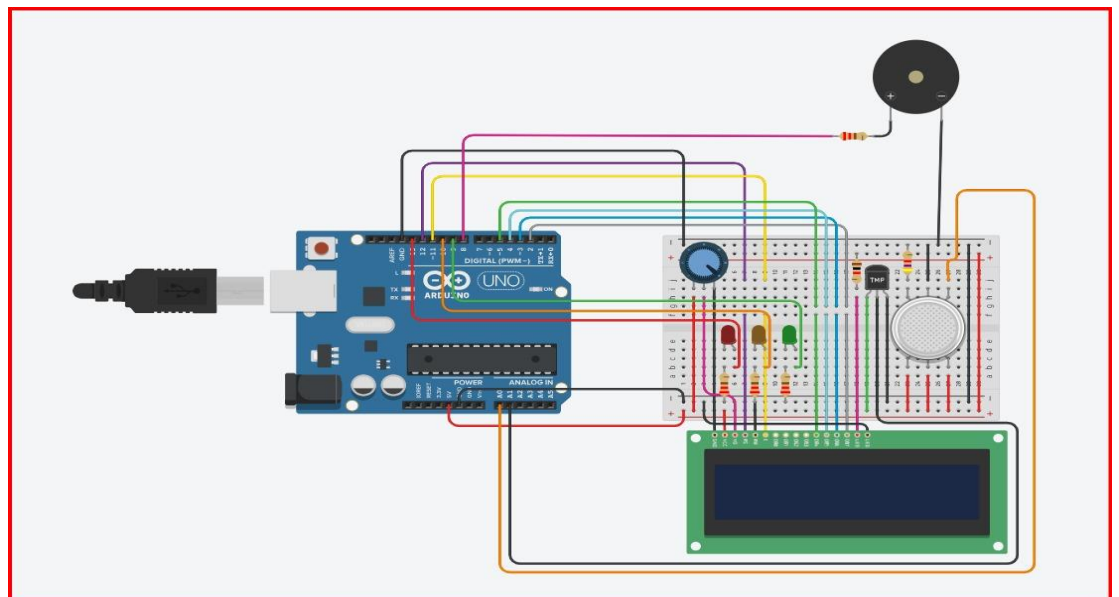
CONCLUSION:

- ➢ Smart monitoring of environmental parameters using IoT modules improves air quality and noise level monitoring.
- ➢ The proposed approach contributes to increasing life expectancy for individuals living or working in such vulnerable conditions.