College name: JP college of engineering

College code: 9512

Project code: proj_211936_team_1

NOISE POLLUTION MONITORING

Team: 14

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System uses air sensors to sense presence of harmful gases/compounds in the air and constantly transmit this data to microcontroller. Also system keeps measuring sound level and reports it to the online server over IOT. The sensors interact with microcontroller which processes this data and transmits it over internet.

STEPS FOR FLOWCHART:

STEP 1: Start the program.

STEP 2: Turn on the Gas, Temperature and Humidity sensors.

STEP 3: Collect the data:

i. Read gas concentration.
ii. Measure temperature and humidity level.

STEP 4: Analyze Data:

i. Check if gas concentration is within safe limits.
ii. Check if temperature and humidity is within comfort range.

STEP 4: Display results:

i. Show gas concentration on display.
ii. Show temperature value on display.
iii. Show humidity percentage.

STEP 5: Take action (if necessary):

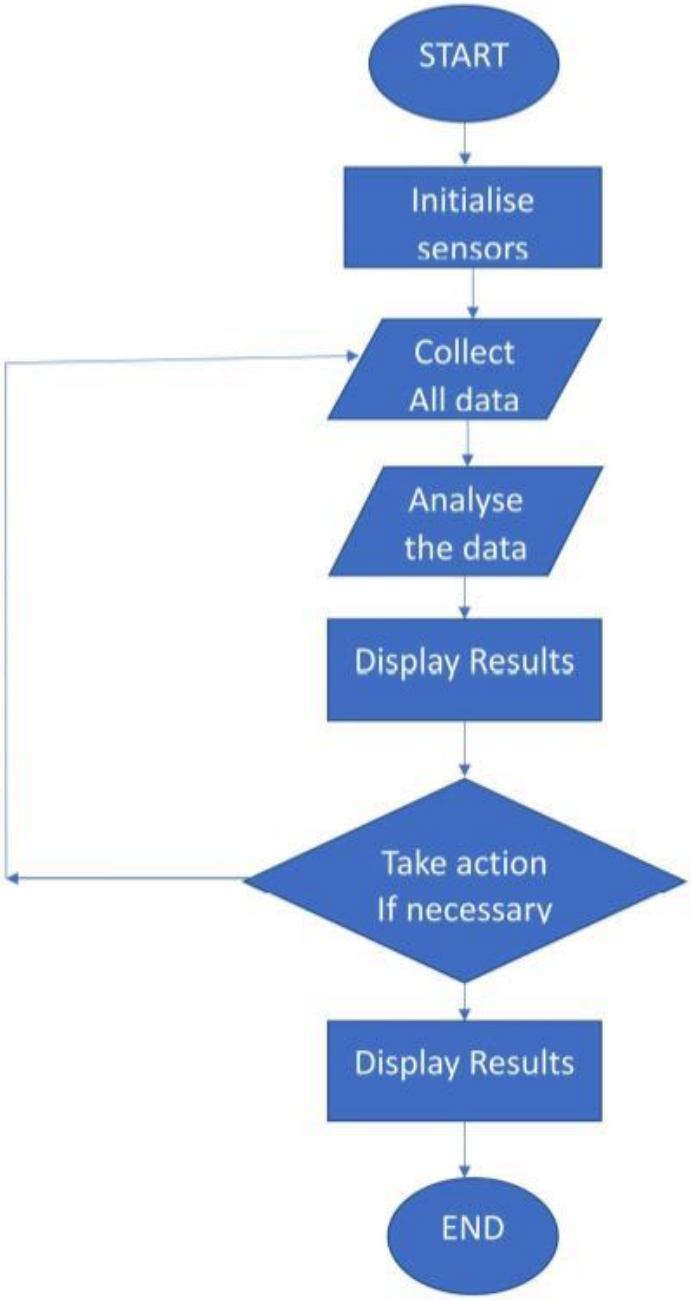
i. If gas concentration is high, activate alarm or ventilation.
ii. If temperature is too high or low, adjust heating or cooling system.
iii. If humidity is too high or low, activate dehumidifier or humidifier.

STEP 6: Wait for a set time.

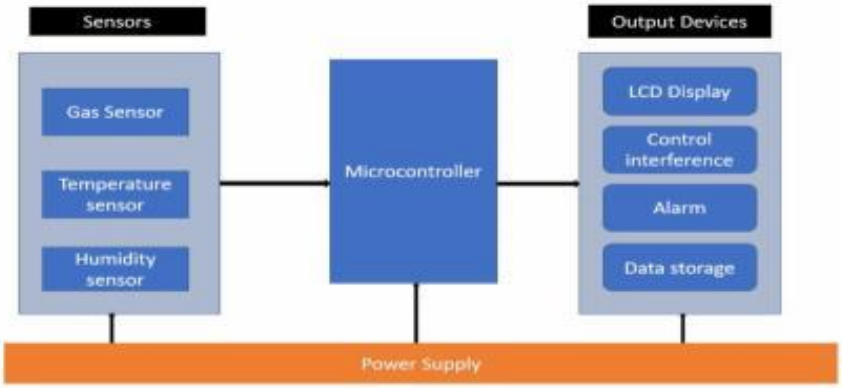
STEP 7: Repeat 3-7 continuously.

STEP 8: End the program.

FLOW CHART:


START
Initialise sensors
Collect All data
Analyse the data
Display Results
Take action If necessary
Display Results
END

BLOCK DIAGRAM:



Block Diagram Description:

1. **Microcontroller/Main Processing Unit**:
   This is the brain of the system, collecting data from sensors and process it and managing output actions and displays.

2. **Sensors:**
   - Gas Sensor: Connects to the microcontroller and detects specific gases.
   - Temperature Sensor: Connects to the microcontroller to measure temperature.
   - Humidity Sensor: Connects to the microcontroller to measure humidity.

3. **Communication Interface:**
   Enables the microcontroller to communicate with external devices or a computer. This can be Wi-Fi, Bluetooth, or wired connections like USB or Ethernet.

4. **Display:**
   Shows real-time data readings, alerts, or system status.

5. **Alarm/Notification System:**

This can be an audible alarm, LED indicator, or any other signaling device that alerts the user when air quality goes outside the desired range.

6. **Power Supply:**

Provides power to the entire system. This could be batteries, solar panels, or a direct power source.

7. **Data Storage:**

Where the data can be logged for historical analysis. This could be an SD card, onboard memory, or cloud storage.

8. **Control Buttons/Interface:**

Allows the user to interact with the system, set thresholds, or view historical data.