Intelligent Gas Leakage Detection and Safety System

This document provides a brief overview of an IoT-based gas leakage detection and safety system using Arduino, gas sensor (MQ2), and GSM module. The system automatically detects gas leaks and triggers both a hardware response and a mobile alert.

# System Overview

- Sensor: MQ2 Gas Sensor  
- MCU: Arduino Uno  
- Output Devices: Relay-controlled exhaust fan and buzzer  
- Communication: GSM module for SMS alerts

# Working Principle

When gas concentration exceeds the threshold, the microcontroller activates a fan and buzzer for immediate response. It also sends an SMS to the registered number via GSM module. Once gas levels normalize, the system returns to standby.

# Arduino Code

See the attached `.ino` file for source code.

# Future Improvements

- Add LCD display for real-time gas concentration  
- Upload data to a cloud dashboard for analytics  
- Battery backup support