

# Gas Level and Leakage Detection with Automatic Booking

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**Abstract:** *Gas level and leakage detection is crucial for ensuring safety in various environments such as homes, industries, and laboratories. In this paper, we present a novel approach utilizing embedded C language, MQ2 sensor, ESP32 microcontroller, buzzer, and alert messaging system for efficient gas monitoring and detection. The proposed system employs the MQ2 sensor, capable of detecting various gases including LPG, methane, and carbon monoxide, interfaced with an ESP32 microcontroller for real-time data processing and analysis. Embedded C programming language is utilized for firmware development to facilitate efficient resource management and enhance system performance. Upon detecting abnormal gas levels or leakage, the system triggers an audible alarm through the buzzer and simultaneously sends alert messages to designated recipients via messaging protocols such as SMS. This enables timely response and preventive measures to mitigate potential hazards associated with gas leakage incidents. Additionally, an automatic gas booking feature is integrated, where upon gas depletion, the system automatically sends an SMS to the designated gas provider, facilitating seamless replenishment of gas supply.. Experimental results demonstrate the effectiveness and reliability of the proposed system in accurately detecting gas levels and identifying leakages in different environments. The system's low-cost implementation and versatility make it suitable for deployment in various applications, contributing to enhanced safety standards and risk mitigation strategies.*

**Keywords:** Gas level and leakage detection