

IoT-Based Kitchen Safety System

Project Objective:

The objective of this project is to develop a smart, IoT-enabled kitchen safety system that can detect hazardous gas leaks and fire incidents in real time, alert users both locally and remotely, and automatically respond to fire outbreaks. By integrating gas and flame detection with an automated sprinkler system, the project aims to reduce fire-related accidents and ensure prompt action in the absence of human supervision. The system enhances safety using cost-effective components and modern IoT technologies like the Blynk platform.

Key Features:

1. Gas Leakage Detection and Alert:

- Detects flammable gases like LPG.
- Triggers buzzer, red LED, and Blynk alerts.

2. Smoke/Fire Detection:

- Monitors for smoke using a sensor.
- Provides local and remote warnings.

3. Directional Flame Detection:

- Uses multiple flame sensors to detect fire direction.

4. Automatic Fire Response:

- Rotates sprinkler toward fire.
- Activates water pump via relay.

5. OLED Display and IoT Monitoring:

- Displays system status on OLED.
- Sends real-time alerts via Blynk app.