TOPIC: - IOT based LPG Gas maintenance and notification.

AIM: The aim of an IoT-based LPG gas maintenance and notification project is to develop a system that can remotely monitor and manage the usage of LPG gas cylinders in households and commercial establishments. The system would use sensors and actuators to collect data on gas leakage, and other relevant parameters. This data would then be transmitted to a central server for analysis and notification.

PROJECT OBJECTIVE: The objective of an IoT-based LPG gas maintenance and notification project is to use IoT technology to monitor the level of LPG gas in a cylinder and notify the use. This can help to prevent gas leaks and shortages, and ensure that the user always has enough gas on hand.

WORKING: An IoT-based LPG gas maintenance and notification system utilizes sensors and wireless communication to monitor LPG gas , detect leaks, and send alerts to users in case of any abnormalities. This system aims to enhance safety and prevent potential gas-related accidents.

Hardware Components

The hardware setup typically includes:

1. LPG Gas Sensor: Detects LPG gas concentration levels.
2. Microcontroller: Processes sensor data and controls communication modules.
3. Wireless Communication Module: Transmits sensor data and alerts to a central server or user devices.
4. Power Supply: Provides power to the microcontroller and communication module.

Working Principle:

1. Leak Detection: The microcontroller analyzes the gas level data and triggers an alert if the gas concentration exceeds a predetermined threshold, indicating a potential leak.
2. Data Transmission: The microcontroller transmits the gas level data and alert

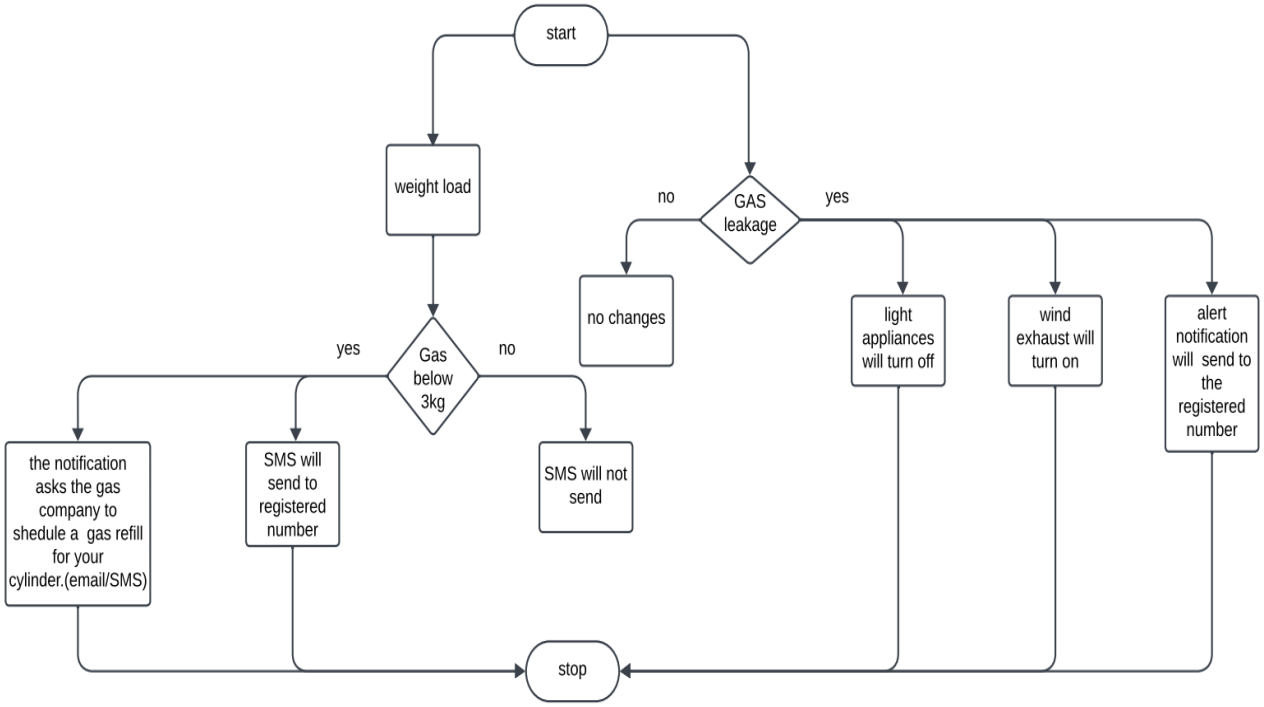
notifications to a central server or user devices via the wireless communication module.

3. User Notification: The central server or user devices receive the gas level data and alerts, providing real-time information on gas levels and potential leaks.
4. Maintenance Reminders: The system can also provide maintenance reminders based on sensor data, indicating when to perform routine maintenance checks on LPG equipment.

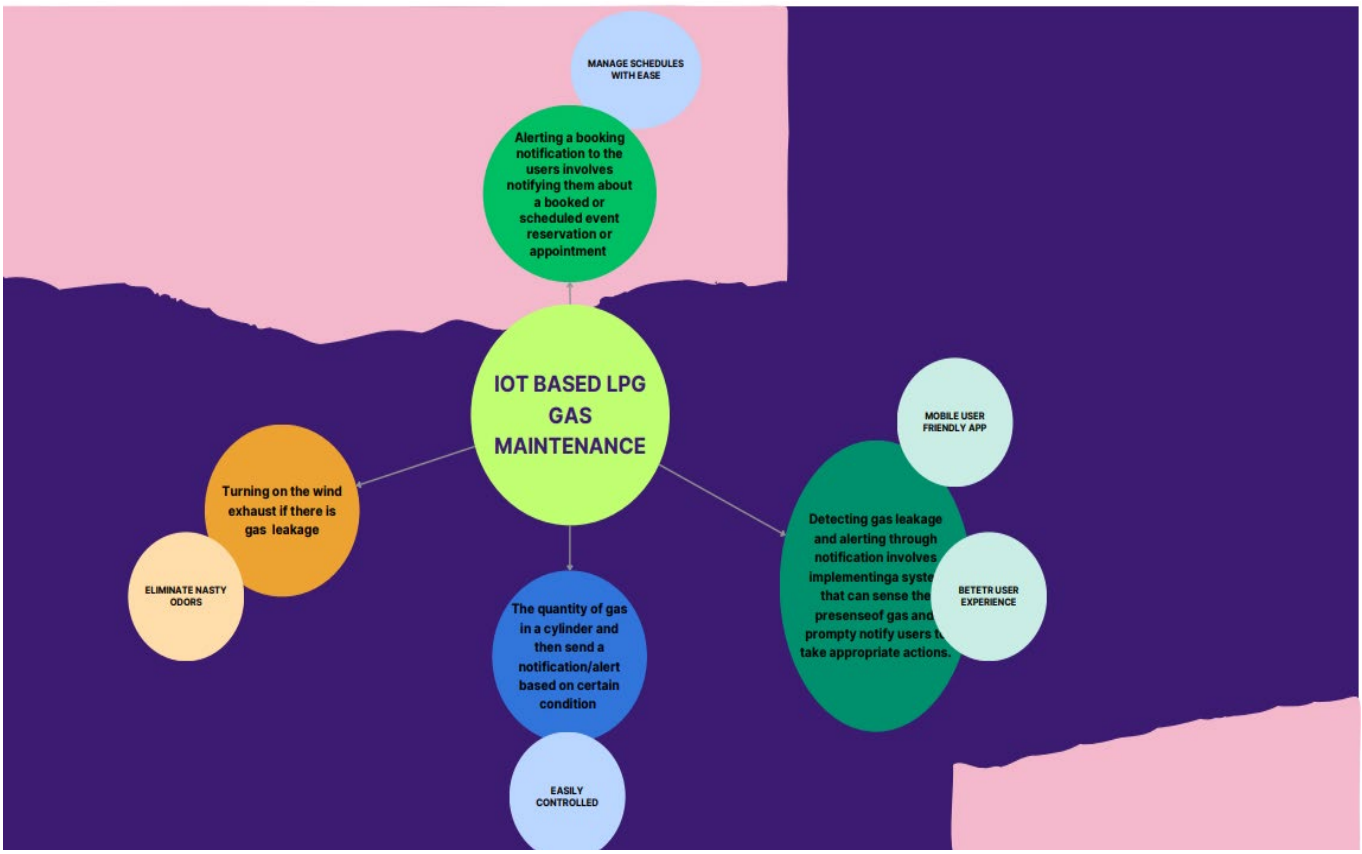
COMPONENTS:

Name	Quantity	Prize
MQ2 sensor	1	300
LCD display	1	300
I2C module	1	200
Buzzer	1	50
LED(Red,Green)	2	100
180-ohm resistor	2	50
Breadboard	1	80
Wind exhaust	1	
Dc servo motor	1	170
IRF540 mosfet	1	35

FLOWCHART:



MIND MAP:



ALGORITHM:

Regular Maintenance:

1. Inspect the LPG cylinder: Check for any dents, scratches, or rust on the cylinder. If you notice any damage, do

not use the cylinder and contact your LPG supplier immediately.

2. Check the regulator: Make sure the regulator is properly connected to the cylinder and the stove. Check for any leaks by applying soapy water to the connections. If you notice any leaks, do not use the stove and contact your LPG supplier immediately.
3. Clean the stove: Regularly clean the stovetop and burners to remove any grease or food debris. This will help to prevent fires and ensure that the stove operates efficiently.
4. Check the gas hose: Inspect the gas hose for any cracks, cuts, or brittleness. If you notice any damage, replace the hose immediately.
5. Ventilate the kitchen: Always open a window or door when using the stove to ensure that there is adequate ventilation. This will help to prevent the buildup of carbon monoxide, which can be fatal.

Notification:

1. Set a reminder to inspect your LPG equipment: Set a reminder to inspect your LPG equipment every 6 months. This will help you to identify any potential problems early on.
2. Contact your LPG supplier if you notice any problems: If you notice any problems with your LPG equipment, contact your LPG supplier immediately. They will be able to send a technician to inspect the equipment and make any necessary repairs.

Additional Tips:

- Store LPG cylinders in a cool, dry place: Do not store LPG cylinders in direct sunlight or near heat sources.
- Never leave a burning stove unattended: Always stay in the kitchen when the stove is on.
- Turn off the gas supply at the regulator when not in use: This will help to prevent leaks.
- Teach children about LPG safety: Make sure children understand the dangers of LPG and how to use it safely.