CAMBRIDGE INSTITUTE OF TECHNOLOGY
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Choss
Cambrian House Of Student Startup

IoT Enabled Smart LPG Monitoring System

ID: SB24103

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SEEDBRAINS

INTRODUCTION

- **Liquefied petroleum gas** (**LPG**) is a fuel gas which contains a hydrocarbon gases , specifically propane , propylene , butylene , isobutane , and n-butane.

- The gases in the LPG cylinders are highly flammable.

- In India the usage of the LPG cylinders are very high and still increasing . Mostly Every house in India have a LPG cylinder for cooking purpose.

PROBLEM STATEMENT

- Now-a-days gas cylinder accidents are happening due to our careless ,we forgot to turn off the cylinder's regulator .
- It cause huge problems like fire accident and breathing problems and it may leads to death.
- We might have no idea about when the cylinder is going to get empty and to order an new cylinder.
- Our Proposed Solution is to avoid these problems by monitor the LPG cylinder .

CUSTOMER PAIN POINT ADDRESSED

Gas leakage

Gas level monitoring

Gas explosion

BRIEF ABOUT THE INNOVATIVENESS

- LPG(Liquefied Petroleum Gas) is a combustible gas composed of hydrocarbon gases.. It's used in heating appliances, cooking equipment, and vehicles, and its leakage leads to Explosion and Causes too many Death.

- Our suggested approach involves using sensors such as gas and weight sensors to continuously monitor gas leakage and cylinder weight. It aims to promptly alert users to replace the cylinder, preventing potential hazards like fire accidents.

FEASIBILITY

- Conducted survey about the product demand with neighbourhood houses.

- As we have designed our product only with the commonly used sensors and basic electronic components with standard processor, technically the project is feasible.

PROPOSED SOLUTION

- LPG is a heavier-than-air gas, and the smart LPG stand placed under the cylinder can easily detect the cylinder weight and send a notification to user through mobile phone to order the next cylinder and show the level of the LPG in the cylinder on the display placed near the cylinder.

- We fit a gas monitor sensor and a buzzer to monitor the leakage of the LPG gas . If the leakage occurs the buzzer turns on and notification is send to the user.

BLOCK DIAGRAM

Gas sensor

processing

Weight sensor

GSM

COMMERCIAL VIABILITY

- As we have used only commonly available low cost components, cost of the device must be affordable. For mass production, the cost of the device might be become cheaper.
- As the cost is affordable and the target customers are in each and every family of India, commercially our product is viable.

TECHNOLOGY USED

- The main technology in our proposed system is AI (Artificial Intelligence) & IoT[Internet of things]

Sensors and IoT

- Sensors are used to monitor certain water quality parameters and IoT can be used to integrate all the components with internet for automatic monitoring.

Microcontroller

- The controller interfaces all the electronic components connected to the system and control the parameters.

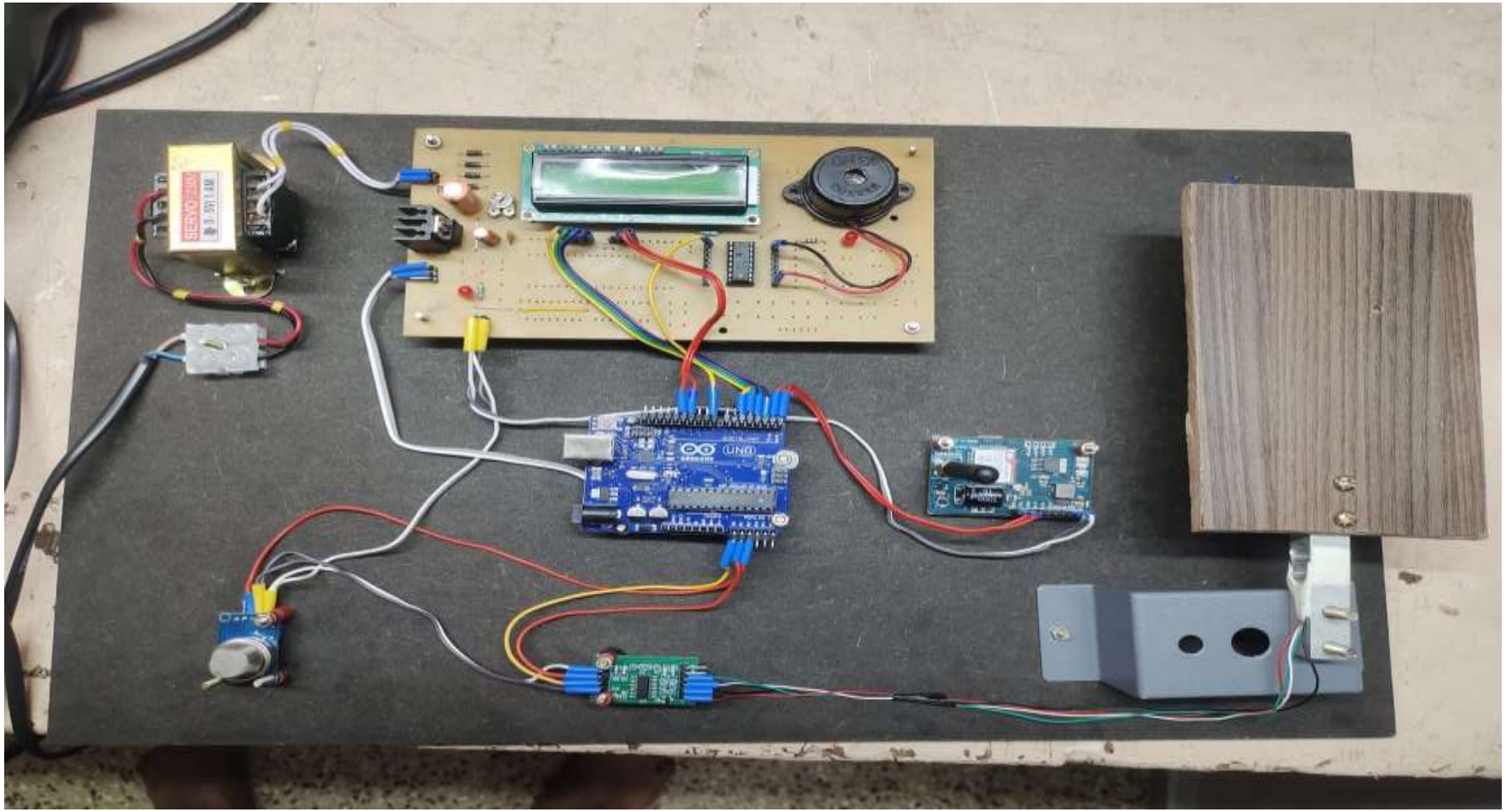
GSM Module

- It is responsible for establishing and maintaining the communication link between the device and the IoT system.

RESEARCH CARRIED OUT

- Literature has been carried out for identifying the solution for the proposed problem.
- Materials has been chosen and prototype for LPG leakage and weight monitoring has been completed.
- GSM Module for sending the information about LPG cylinder has been completed.

PROTOTYPE



SCOPE FOR PATENTABILITY

- Since the proposed idea is pioneer in the field, the scope for obtaining patent is high.

- Document preparation for applying patent is in progress

FUTURE PLANS

- With the assistance of a servo motor, the regulator automatically shuts off when the MQ2 sensor detects a gas leak.

- With the user's consent, a new LPG cylinder will be automatically scheduled after the current one reaches 85% of its utilization.

<DEMONSTRATION VIDEO>