National Institute of Technology Jamshedpur

IoT-Based LPG Cylinder Monitoring & Safety System

Need for this Project

“A meal left uncooked, a family left hungry — just because the gas ran out unnoticed.”

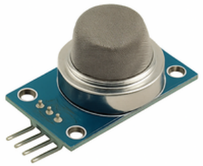
- LPG cylinders are an integral part of households and commercial kitchens.
- Unexpected gas exhaustion causes inconvenience and disrupts daily routines.
- Manual monitoring is unreliable and unsafe as gas leaks can lead to fires and fatalities.

Proposed Solution

The proposed solution is a smart IoT-based LPG gas monitoring system that ensures safety and convenience by :

- Detecting gas leakage using MQ-2 sensor triggering alarms and enabling automatic knob shutoff using servo motor.
- Monitoring gas levels by analyzing weight using a load cell with an HX-711 amplifier.
- Displaying current gas levels using LCD/ OLED display.
- Enhancing safety by assuring optimal operating conditions using additional sensors (temperature,humidity,etc).

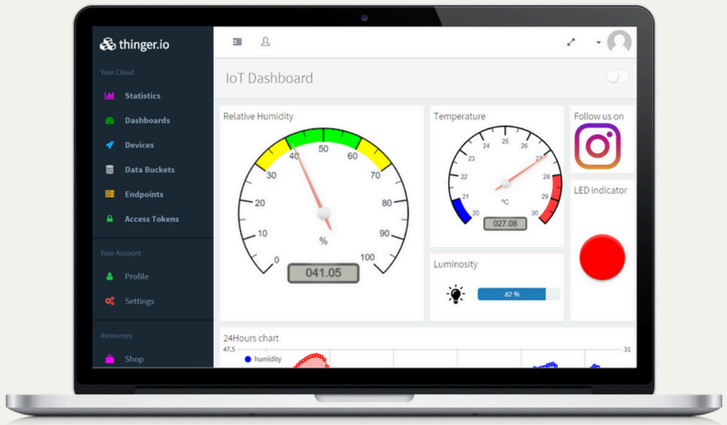
- Providing remote monitoring of gas levels and leak status using IoT dashboard.
- Sending real time alerts using App or SMS.
- Tracking gas usage by weight drop method and predicting the next refill date



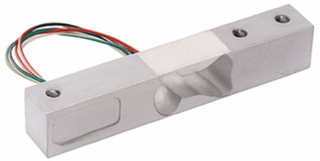
MQ-2 Sensor for gas leakage detection

Buzzer and OLED screen for emergency alerts and real time display

Alerts sent to user

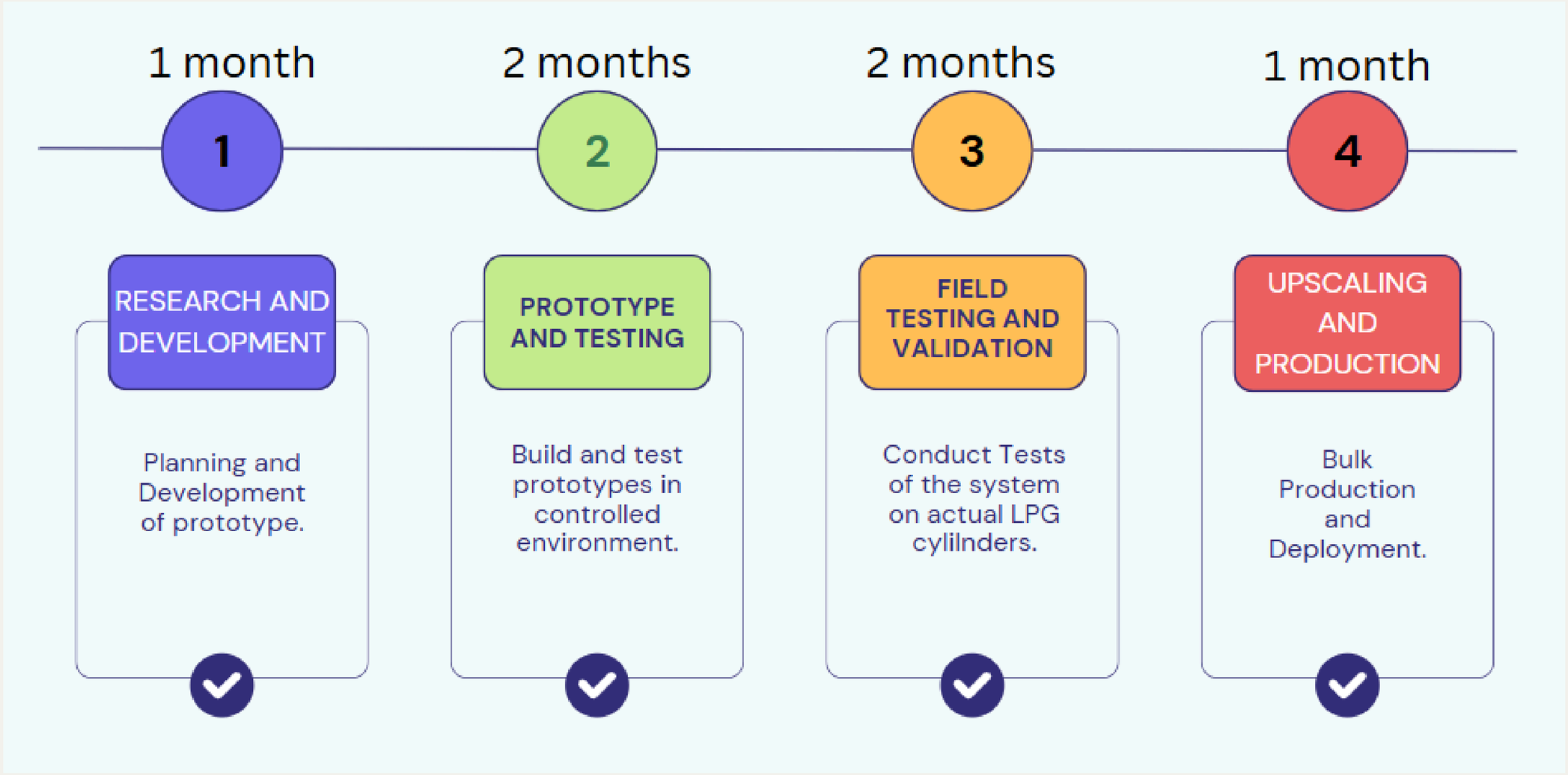


Load cell with HX-711 to measure weight



IoT Dashboard for displaying real time data and usage analysis

Project Timeline



Budget Details

Sno.	Areas	Price(INR)
1	Components and Kits	12,000.00
2	R & D and Prototype Development	4,000.00
3	Basic Software and analysis tools	3,000.00
4	Miscellaneous	3,000.00
	Total Budget :	22,000.00

Group Details

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Mentorship Details

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