The EcoALERT

TEAM NAME: STRAWHATS

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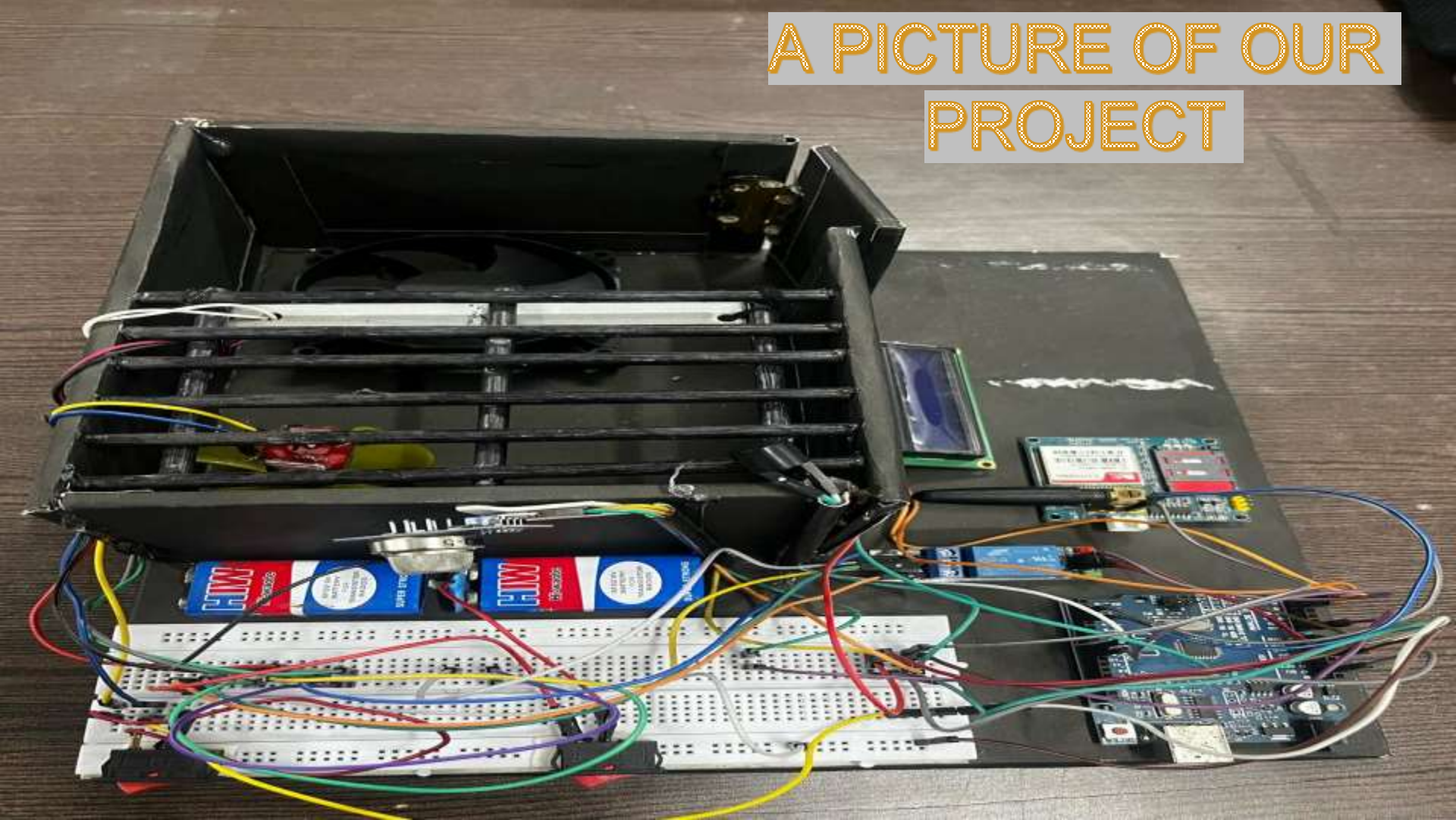
OBJECTIVES OF THE PROJECT

- Gas leak detection is the process of identifying potentially hazardous gas leaks by means of various sensors.
- These sensors usually employ an audible alarm to alert people when a dangerous gas has been detected.
- The total circuit units are arranged on PCB board.

COMPONENTS USED

1) MQ 5 SENSOR
2) BUZZER
3) LED DISPLAY
4) FAN
5) BREAD BOARD
6) JUMPER WIRES
7) DC MOTOR
8) SIM900A (MESSAGE ALERT)

A PICTURE OF OUR PROJECT



WORKING PRINCIPLE

- A LPG gas sensor module MQ-5 is used to detect LPG Gas.
  - When Arduino gets a HIGH pulse
  - An emergency light or LED light glows from LPG gas module.
- Activates buzzer which beeps again and again until the gas detector module doesn't sense the gas in environment.
- It sends a notification "ALERT" to the app of the device with the help of Bluetooth module HC-05.
- When the detector module gives LOW pulse to Arduino, then green LED light starts glowing and the app shows "OK".

FEATURES

1.) Automatic Activation of Exhaust Fans**:
-The system will seamlessly activate exhaust fans upon detection of specified conditions, ensuring timely ventilation.

2.) On-Screen Detection Display
- Real-time detection events will be visually displayed on the screen interface, providing clear and immediate feedback to users.

3.) Audible Alert via Buzzer
- In addition to visual cues, the system will emit audible alerts through a buzzer, enhancing situational awareness for users within the vicinity.

4.) Mobile Phone Notification Alerts**:
- Users will receive timely alerts on their mobile phones via text messages, ensuring remote access to critical information regardless of their location.

APPLICATIONS

1.) Home security
- This system is designed mainly for home (especially kitchen area to prevent accidents due to gas leak.

2.) Automation
-I t can be enhanced to automate electrical cut off process to prevent short circuit.

3.) Enhancement
- It can be enhanced to measure specific gas levels to use in industrial application.

4.) Vehicle Applications
- It can be used in vehicles to detect whether the smoke coming out from the exhaust is harmful by detecting the carbon amount in it.

FUTURE POSSIBILITIES

1. CYLINDER WEIGHT SYSTEM:

   - We can use this system to measure the weight of the gas cylinder and if there is a suddend drop in the weight of the cylinder then it will notify the user about the possible gas leakage.

2. Auto cut-off regulaor:

   - The auto cut-off mechanism will directly stop the gas supply from the cylinder preventing major leakage

3. Same system in pipelines :

   - We can use the same system in pipelines for detection of the gas leakage.

THANKS