GAS LEAKAGE MONITORING AND ALERTING SYSTEMS

Team ID:

PNT2022TMID21386

Team members

917719D053-Muthu Veni V

917719D054-Nandhini P

917719D084-Senthilkumar C

917719D134-Swetha K

PROBLEM STATEMENT

- A homemaker trying to detect the gas leakage, but manual detection of leakage may not be accurate. Because it requires an alerting and monitoring mechanism which makes them feel that could cause a field accident.

PROPOSED SOLUTION

- System consists of gas detector sensors, Arduino board, ESP8266 and Cloud server. One Society authority person can register the all flat member user to our system.
- Society admin can add the details of per flat user such as user name, mobile number, per user flat sensor details information. Society admin can configure the threshold value of each sensor.
- System hardware can be deployed on each flat. Sensors can sense the value per time. System can send the values to cloud server.
- Server can Check that the sensor values was existed the threshold value. If sensor value can cross the limit the server can send the command to hardware for buzzing the alarm. Server also sends the notification message to user

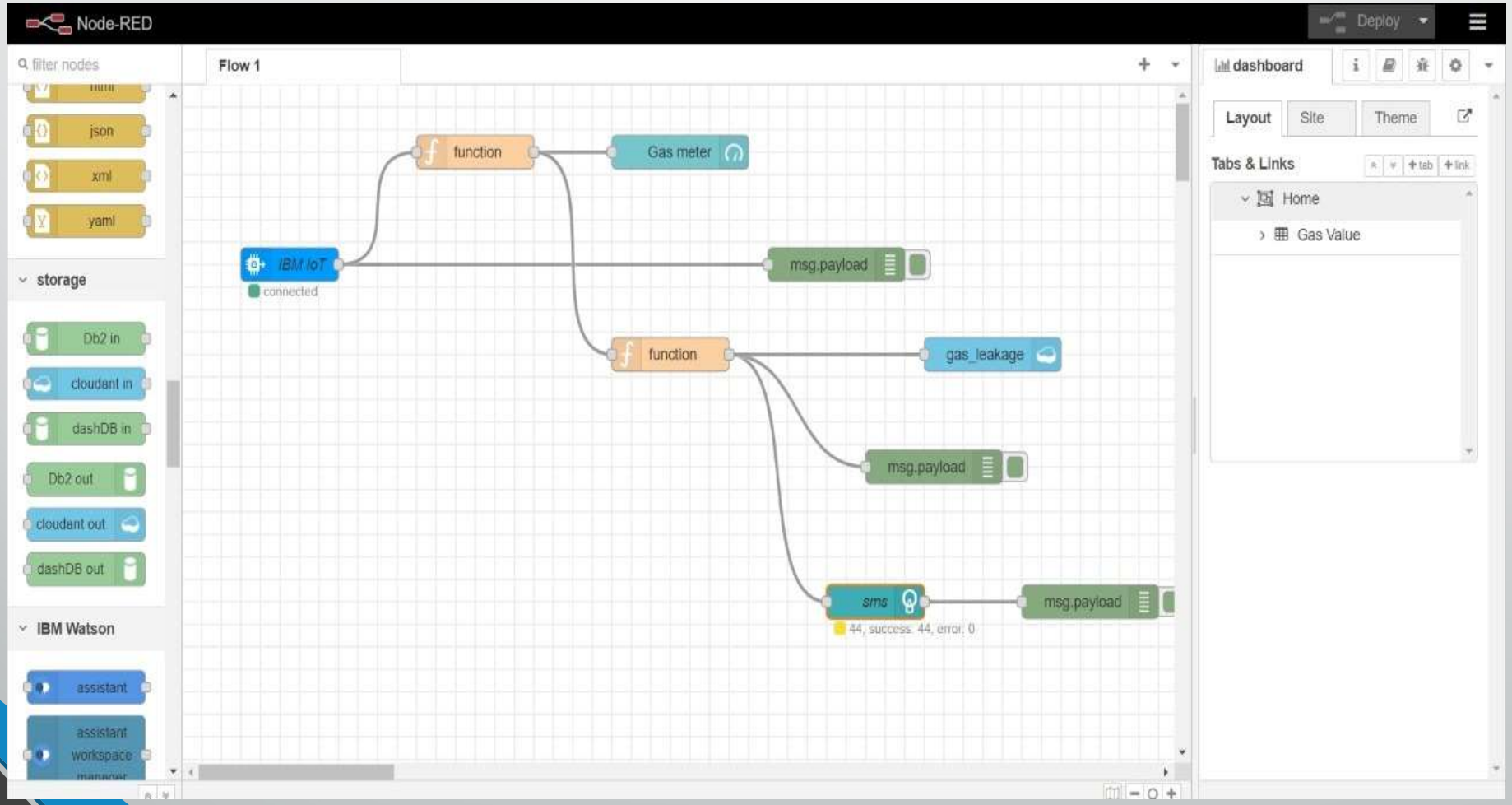
TECHNICAL ARCHITECTURE

S.NO	Component	Description	Technology
1.	User Interface	How user interacts with application e.g. Web UI, Mobile App,Chatbot etc.	**HTML, CSS, JavaScript / Angular Js /React Js etc**
2.	Application Logic-1	Logic for a process in the application	**Java/Python**
3.	Application Logic-2	Logic for a process in the application	**IBM Watson STT service**
4.	Application Logic-3	Logic for a process in the application	**IBM Watson Assistant**
5.	Cloud Database	Database Service on Cloud	**IBM DB2, IBM Cloudant etc.**
6.	**Infrastructure (Server / Cloud)**	**Application Deployment onCloud**	**Local, Cloud Foundry, Kubernetes, etc.**

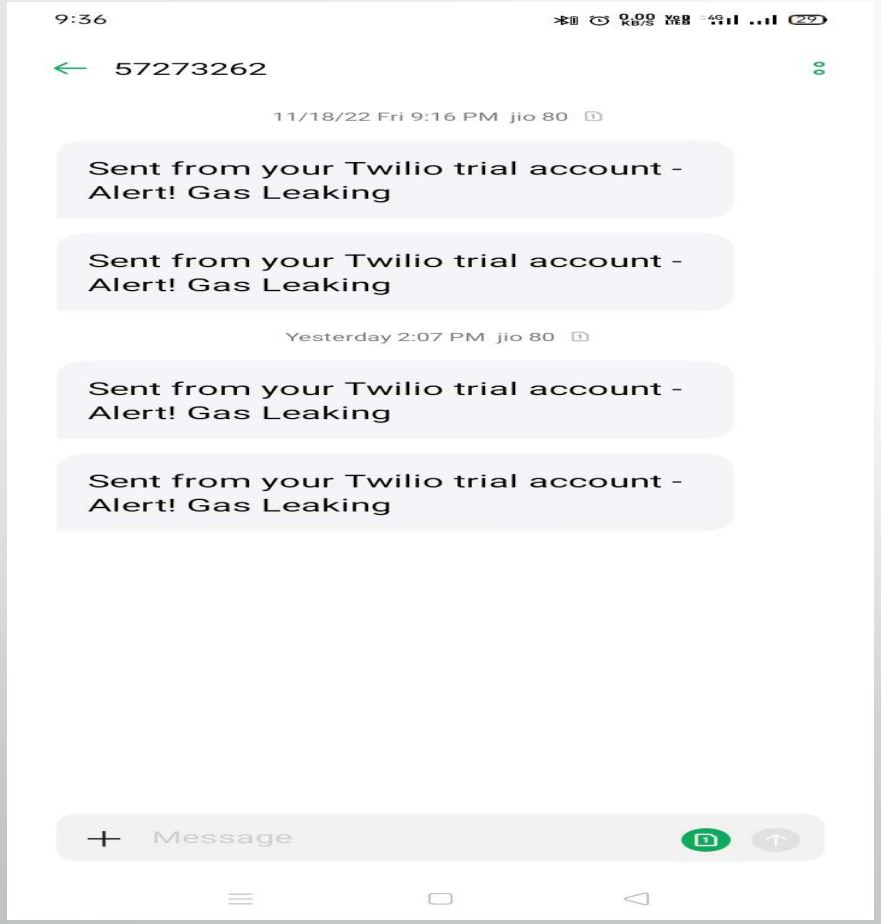
TECHNICAL ARCHITECTURE : Application Characteristics

S.No	Characteristics	Description	Technology
1.	Scalable Architecture	We can implement in Industries,Hotels, Public places	IOT
2.	Availability	To detect leakage 24/7 for uninterrupted services we have implemented in distributed servers (cloud)	IBM cloud
3.	Performance	If we implemented in industries, itneeds many gas sensors to detect	

DEMO : NODE RED



RESULT


9:36
57273262
11/18/22 Fri 9:16 PM jio 80
Sent from your Twilio trial account - Alert! Gas Leaking
Sent from your Twilio trial account - Alert! Gas Leaking
Yesterday 2:07 PM jio 80
Sent from your Twilio trial account - Alert! Gas Leaking
Sent from your Twilio trial account - Alert! Gas Leaking
Message

FUTURE SCOPE

- Future scope could be including a Automatic Shut-off device which will turn off the gas supply whenever it will detect any gas leakage.
- This system can be implemented in Industries, Hotels and wherever the LPG cylinders are used. The system can be taken as a small attempt in connecting the existing primary gas detection methods to a mobile platform integrated with IoT platforms.
- The gases are sensed in an area of 10m radius of the rover and the sensor output data's are continuously transferred to the local server. The accuracy of sensors are not up to the mark thus stray gases are also detected which creates an amount of error in the outputs of the sensors, especially in case of methane.
- Hence in the future we have to come up with better solutions for these Problems.

DEMO VIDEO LINK:

- https://drive.google.com/drive/folders/1biikkkLXADrCskCsyo5kLI9NEcJQWtFU?usp=sharing

THANK YOU