

Project Design Phase-II Technology Stack (Architecture & Stack)

Date	15 October 2022
Team ID	PNT2022TMID36762
Project Name	Gas Leakage Monitoring and Alerting system
Maximum Marks	4 Marks

Technical Architecture

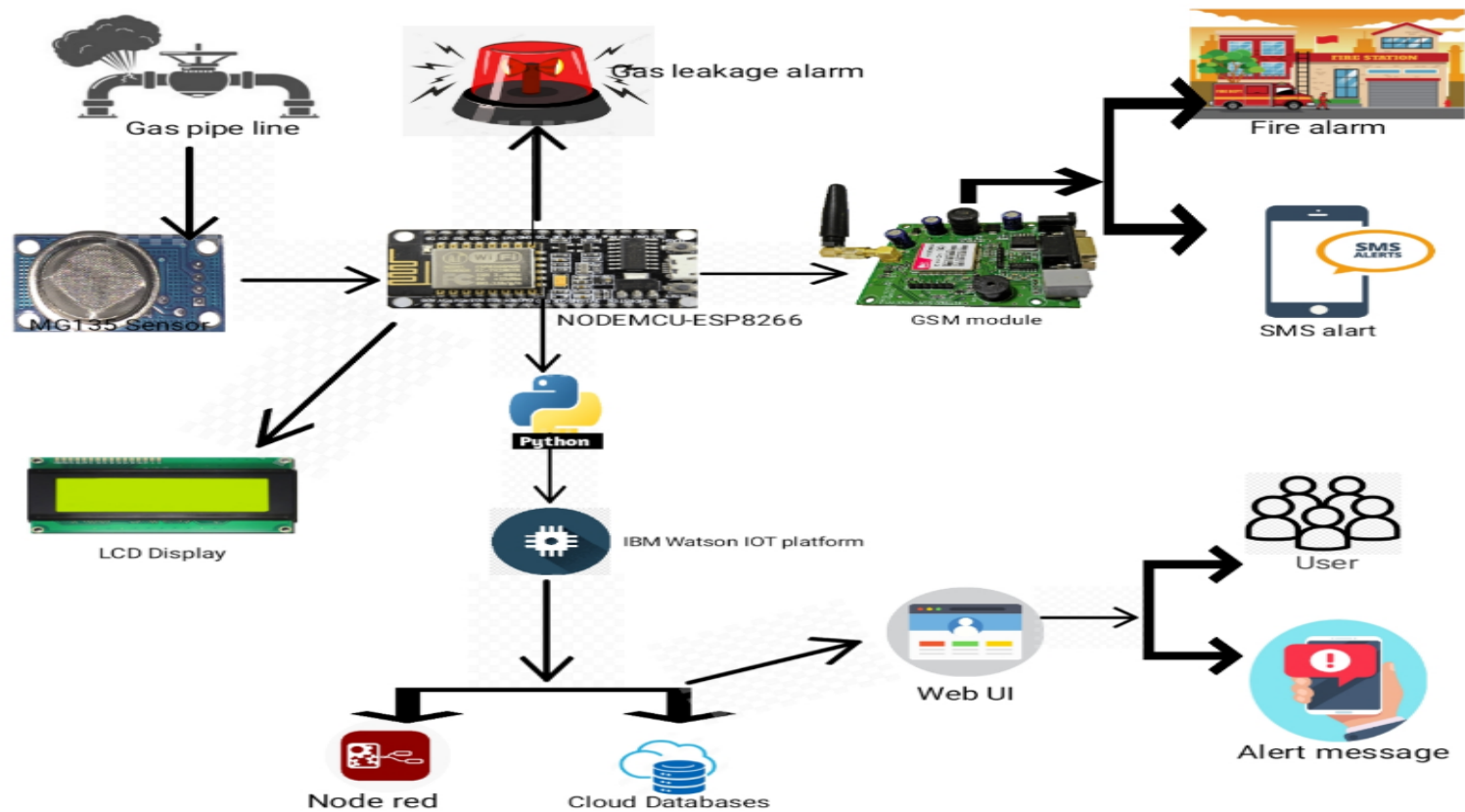


Table-1: Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	How user interacts with application e.g. Web UI, Mobile App, Chatbot etc.	HTML, CSS, JavaScript
2.	IOT Application Logic-1	Device Should be connected to System Using python code.	Python
3.	IOT Application Logic-2	NODEMCU device is connected with IBM Watson Platform.	IBM Watson STT service
4.	IOT Application Logic-3	It is connected with Web UI and alert the user through messages.	IBM Watson Assistant
5.	Cloud Database	Database Service on Cloud. Data can be any format based on user.	IBM DB2, IBM Cloudant etc.
6.	File Storage	File Should be named and it contains details of file type, date and time of file is created, memory space.	IBM Block Storage or Other Storage Service or Local Filesystem
7.	External API-1	It is used in device through Wifi communicating and allotting operation efficiency.	Aadhar API, etc.
8.	Machine Learning Model	IOT and machine learning delivers insights otherwise hidden in data for rapid automated response and improved decision making	Object Recognition Model and Danger prediction model etc.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Without using framework, we lot of manual work to do the task, but using framework provide rapid development and in coding part it reduce the code.	Real time monitoring- Gas leakage is monitored continuously using IOT Zeta.
2.	Security Implementations	GSM module is enabled with devices. If leakage is detected send the alert message to concerned user.	e.g. SHA-256-It is used for encryption security.
3.	Scalable Architecture	Any problem occur, the concerned user can see the problem and real time monitoring the gas levels.	Multiple Data store Technologies , Reliable.

S.No	Characteristics	Description	Technology
4.	Availability	It continuously monitor the gas level and whether the gas leakage occurs it immediatedly sends the SMS alert to user	GSM Module
5.	Performance	The leakage detected without any delay it gives fire alarm and it sends SMS alert to user. WEB UI Is also connected with device so it alert the concerned user. We use high quality pipes and regular maintanence to avoid the leakage.	<ul style="list-style-type: none"> ❖ High durable devices with good quality. ❖ Long Lasting Battery