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

Date	16 October 2022
Team ID	PNT2022TMID14393
Project Name	Project – Gas Leakage Monitoring and Alerting System
Maximum Marks	4 Marks

Technical architecture:

Figure: Gas Leakage Monitoring and Alerting System

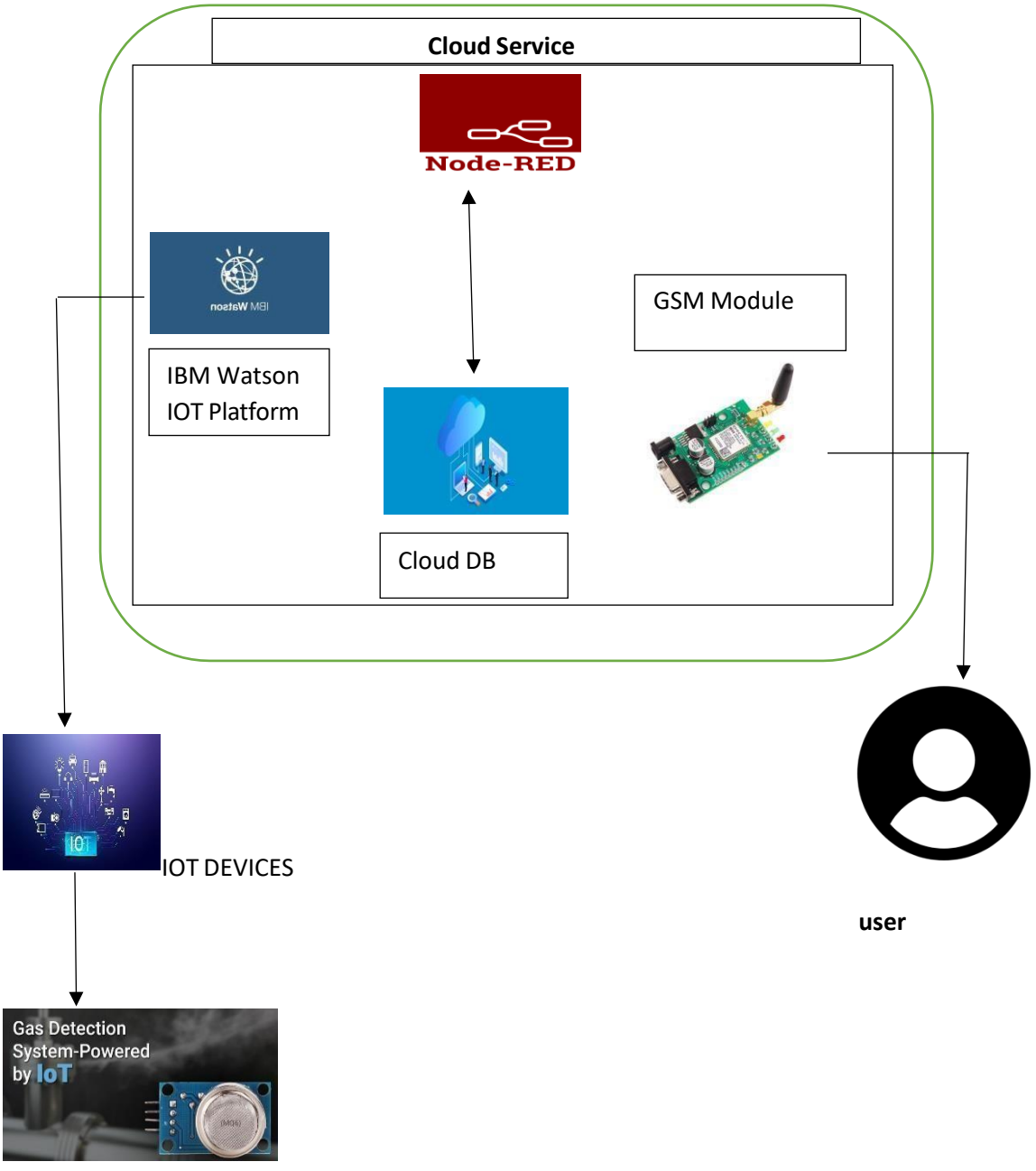

Table 1: Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	The user has to register and we can able to view the other device. ex:using web UI, mobile, app, etc.,	HTML, CSS, JavaScript
2.	The owner's	Owner's device should be connected to the system	Python
3.	IoT Application Logic-2	The owner's device should be in condition	IBM Watson STT service
4.	IoT Application Logic-3	If a gas leakage is detected a notification message is sent to the owner	IBM Watson Assistant
5.	Database	The data type can be in any form such as text, User defined blob of data sent from cloud IoT core device, etc.,	SQ lite, In Flux DB
6.	File Storage	File with being labeled with what theycontain and how long they should be kept	IBM Block Storage or Local File system
7.	External API-1	The purpose of External API used in the device is to use the internet for communicating and conducting allotted operations efficiently.	Aadhar API, etc.
8.	Machine Learning Model	IoT and machine learning deliver insights otherwise hidden in data for rapid automated response and improved decision making	Object Recognition Model, Danger prediction Model, etc.

Table 2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	A device that removes much of the manual work needed to write and configure code. It provides rapid development, is easy to set up and has a strongsupport base	IOT Zeta for nonstop streaming of detecting gas leakage levels,
2.	Security Implementations	Alert notification Enabled with GPS module received in owner mobile.	e.g. SHA-256, Encryptions of data regarding gas level, firewalls, Antivirus, data loss prevention etc.,
3.	Scalable Architecture	If a problem arises owner can see the problems and check the gas level simultaneously	Multiple Data store Technologies, Reliable, Microservices Automated Bootstrapping
4.	Availability	*sensor to detect the leakage and LCD Display to show the gas level	GSM module, raspberry pi

S.No	Characteristics	Description	Technology
		*whenever the gas leakage is sensed the message is delivered to the owner	
5.	Performance	*The alert notification is sentto the owner without any delay when leakage is detected *immediate actions are taken after detection.	High-durable device battery