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

Date	30 October 2022
Team ID	PNT2022TMID51954
Project Name	Gas Leakage Monitoring And Alerting System
Maximum Marks	4 Marks

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2
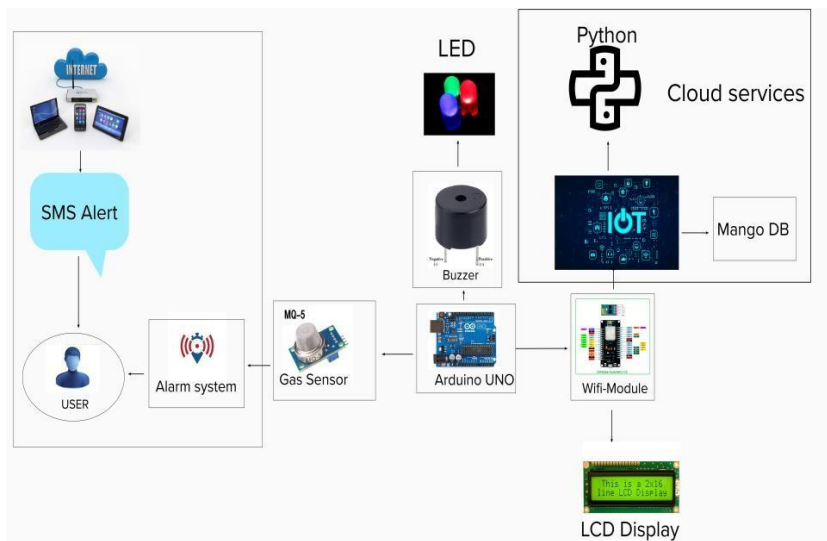
Guidelines:

1. Include all the processes (As an application logic / Technology Block)
2. Provide infrastructural demarcation (Local / Cloud)
3. Indicate external interfaces (third party API's etc.)
4. Indicate Data Storage components / services
5. Indicate interface to machine learning models (if applicable)

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	MQ-5 gas sensor	Used to detect toxic or explosive gasses and measure gas concentration	Detecting , humidity
2.	ESP8266 WIFI Module	Capable of either an application or offloading all WI-FI networking functions from application processor.	Integrated TCP/IP Protocol stack.
3.	LED	Two lead semiconductor light source	Pn -junction diode ,which emits light when activated.
4.	Buzzer	It is an audio signalling device.	Timers and confirmation of user input such as a mouse
5.	Arduino uno	Open source electronics platform based on easy to use hardware and software	Integrated development environment(IDE)
6.	Cloud services	Database Service on Cloud	IBM DB2, IBM Cloudant etc.
7.	Python code	Computer programming language often used to build websites and software	Multi-paradigm programming language
8.	User application	Purpose of External API used in the application	IBM Weather API, etc.
9.	Specified mobile number	Login, looking website basic details	Application etc.
10.	Internet	Networks interlinked	Worldwide system of computer networks
11.	Mango db	Open source database management program.	Open-source document database.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Leaks indicators developing ,electronics rador	Feed actual time sensor data internet

S.No	Characteristics	Description	Technology
2.	Security Implementations	Increasing due to an attack surface having data Leakage detection in place a key.	Continuous monitor your external attack surface.
3.	Scalable Architecture	Requirements necessity for detection.	Technology used
4.	Availability	High quality instruments that can locate the leaks	Technology used
5.	Performance	Arduino response time will be fast	Technology used

References:

https://c4model.com/

https://developer.ibm.com/patterns/online-order-processing-system-during-pandemic/

https://www.ibm.com/cloud/architecture

https://aws.amazon.com/architecture

https://medium.com/the-internal-startup/how-to-draw-useful-technical-architecture-diagrams-2d20c9fda90d