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

Date	06 May 2023
Team ID	NM2023TMID14262
Project Name	Gas Pipeline Monitoring System for Hospitals

Technical Architecture:

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

ARCHITECTURE: Gas Pipeline Monitoring System for Hospitals

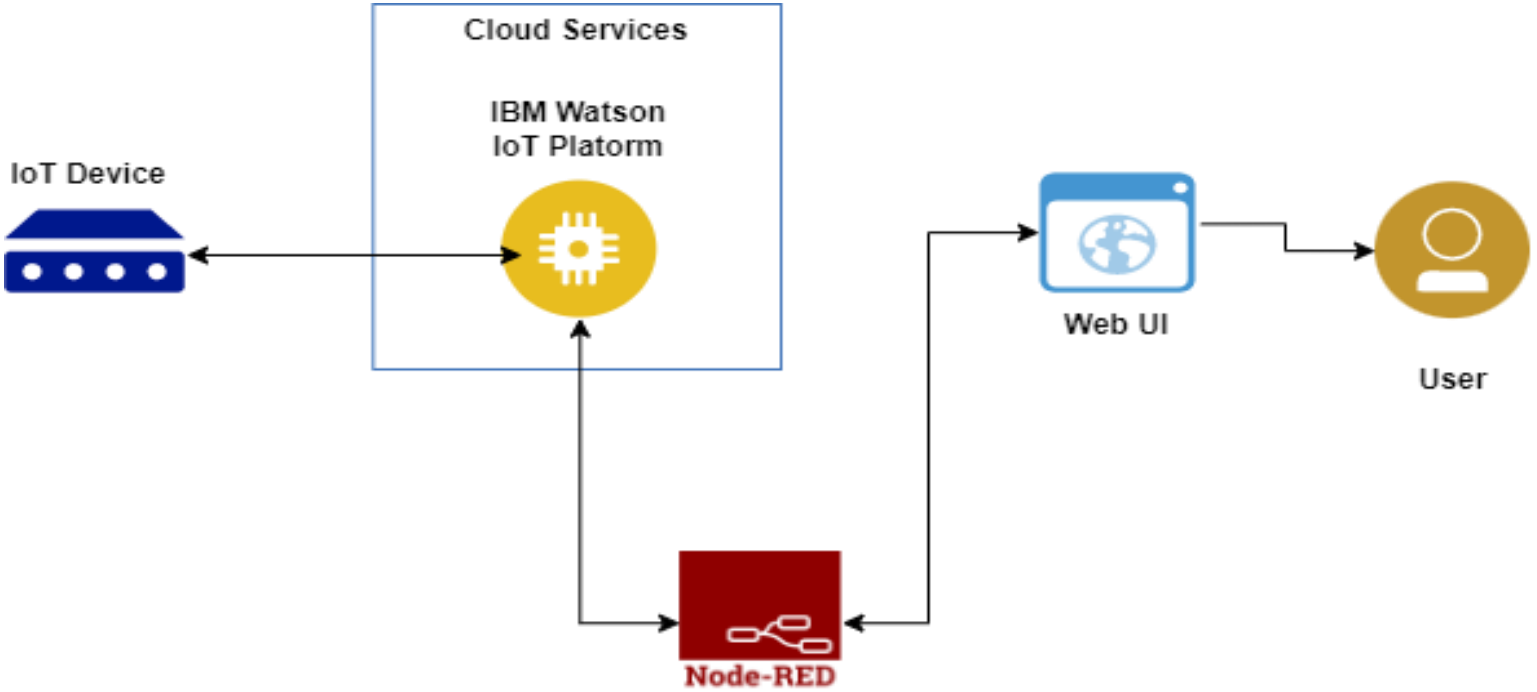

Table-1: Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	User registration and web UI	HTML, CSS, JavaScript
2.	IoT Application Logic-1	Sensor Initialization	NodeRED
3.	IoT Application Logic-2	Device should be in connected state	IBM Watson IoT service
4.	IoT Application Logic-3	If any leakage is detected, the notification is sent to the staff or user	IBM Watson Assistant
5.	Cloud Database	Data are captured and sent to cloud services	IBM Watson IoT cloud platform
6.	File Storage	File storage requirements	IBM Block Storage or Local Filesystem
7.	Infrastructure (Server / Cloud)	Application deployed on cloud server	IBM Watson IoT cloud platform

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Open-source framework for connecting to NodeRED	Working with Wiring Pi, Pigpio, Gpiozero, Rpi. GPIO
2.	Security Implementations	Alert notifications enabled with GPS module received in staff or users device.	e.g. SHA-256 Encryptions of data regarding gas level, firewalls, Antivirus, data loss prevention etc.,
3.	Scalable Architecture	If a problem arises staff can see the problems and check gas level simultaneously	Multiple Data store Technologies , Reliable, Micro services Automated Bootstrapping
4.	Availability	Sensor to detect the leakage and display to show the gas level	Numerous area leakage detection
5.	Performance	Alert notifications is sent to the user or staff without further delay whenever leakage is detected	High durable device battery