HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY

(AUTONOMOUS)

Date	6st November 2022
Team ID	PNT2022TMID10014
Project Name	IOT Gas Leakage Monitoring and Alerting System.
Maximum Marks	4 Marks

TECHNICAL ARCHITECTURE:

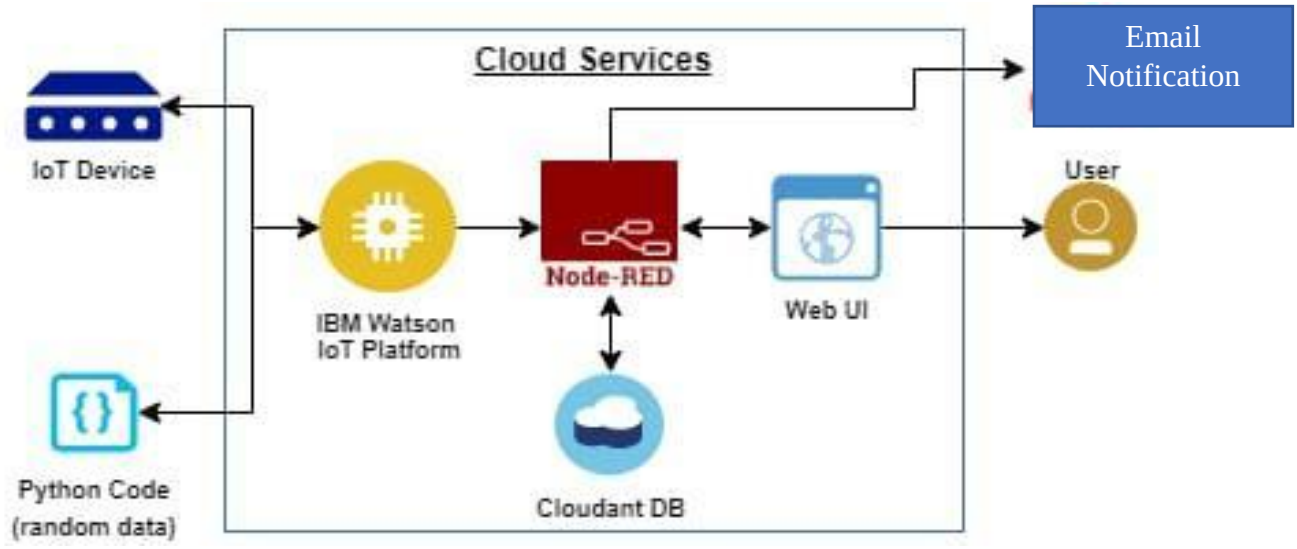

Table-1: Components & Technologies:

S.No	Component	Description	Technology
1.	ESP 32	ESP32 is a series of low-cost, low-power system on a chip microcontroller with integrated Wi-Fi and dual-mode Bluetooth.	ESP 32 is a series of low-cost, low-power system on chip microcontroller with integrated WIFI and dual-mode Bluetooth. The ESP32 series employ microprocessor in both dual-core and single-core variations.
2.	Gas Sensors	The Grove - Gas Sensor (MQ5) module is useful for gas leakage detection and for monitoring the air quality.	A gas sensor is a device which detects the presence or concentration of gases in the atmosphere. Based on the concentration of the gas the sensor produces a corresponding potential difference by changing the resistance of the material inside the sensor, which can be measured as output voltage.
3.	Web App	An application that is used to the see the gas level, GPS location and see the total overview of the system.	An app is a type of software that allows you to perform specific tasks. Applications for desktop or laptop computers are sometimes called desktop applications, while those for mobile devices are called mobile apps. When you open an application, it runs inside the operating system until you close it.

4.	IBM cloud	The IBM Cloud platform combines platform as a service (PaaS) with infrastructure as a service (IaaS) to provide an integrated experience. The platform scales and supports both small development teams and organizations, and large enterprise businesses.	Platform as a Service (PaaS) is a cloud computing solution that provides developers with an easy-to-use platform to create their own software, web applications, or other programming projects.
5.	E-MAIL	An Email system allows computer user on a network to send text, links, graphics, sounds and animated images to other users. On most networks, data can be simultaneously sent to a selected group or individual. Network users typically have an email box that receives, stores, and manages their correspondence.	When you send an E-MAIL, the message gets transmitted from the sending device to the receiver's devices over the internet. Here we have used Gmail services to send alert notification along with the dashboard UI link to monitor and control the system.
6.	Buzzer	A buzzer is a loud noise-making or an audio signalling device, which may be mechanical, electromechanical or piezoelectric.	Typical uses of buzzers include alarm devices, timers, train and confirmation of user input such as a mouse click or keystroke.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	MQ5 gas sensor, Wi-Fi, Esp32, processor chips.	Internet of Things.
2.	Security Implementations	MQ5 gas sensor, alerting device which consists of Buzzer and a LED.	Internet of Things.
3.	Scalable Architecture	Detecting room temperature, if the temperature is above the specified temperature, it will alert workers.	Python.
4.	Availability	Use of Wi-Fi IP address.	Internet of Things.
5.	Performance	Performance is efficient.	Internet of Things.