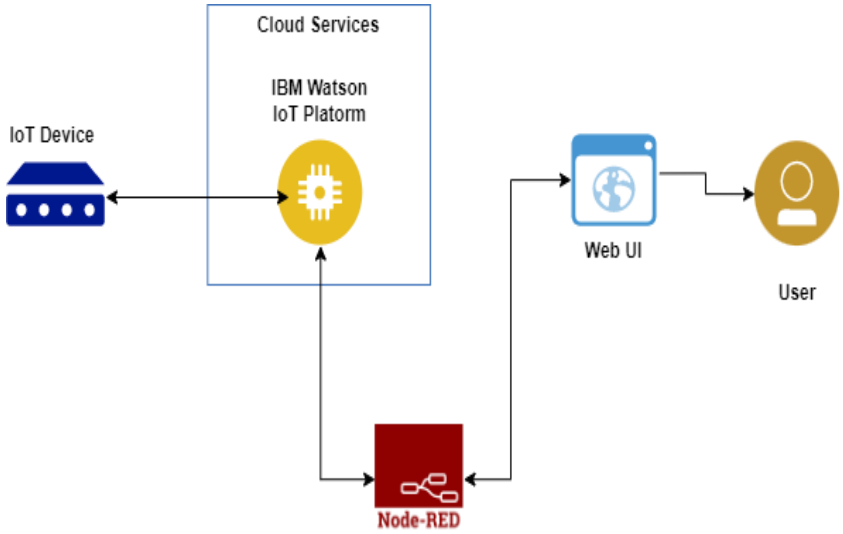
Project Design Phase-II
Technology Stack (Architecture & Stack)

Date	20 May 2023
Team ID	NM2023TMID02223
Project Name	Industrial Workers Health and Safety System based on Internet of Things

Technical Architecture:



Guidelines:

- Identify key safety metrics
- Conduct a thorough risk assessment
- Select reliable IoT devices and sensors
- Establish a secure network infrastructure
- Set up real-time alerts and notifications
- Ensure worker privacy and consent
- Provide worker training and awareness

Table-1: Components & Technologies:

S.No	Component	Description	Technology
1.	IoT Sensors	These sensors are deployed throughout the workplace to collect data on various parameters such as environmental conditions (temperature, humidity, air quality)etc.	Wi-Fi, Bluetooth, Zigbee etc.
2.	IBM Watson IoT Platform	The IBM Watson IoT Platform utilizes a combination of technologies to enable the collection, analysis, and management of IoT data.	Cloud Computing, Internet of Things (IoT) Protocols, Device Management
3.	Node-Red	Node-RED is an open-source flow-based programming tool that provides a visual development environment for connecting IoT devices	Node.js, JavaScript
4.	Web UI	Web UIs (User Interfaces) rely on a combination of technologies to create interactive and visually appealing user experiences.	HTML, CSS, JavaScript.
5.	User	When it comes to web UI development, the technology that directly interacts with users typically revolves around enhancing the user experience and providing interactive functionality.	JavaScript, AJAXetc.

Table-2: Application Characteristics:

S. No	Characteristics	Description	Technology
1.	Framework	Node-RED	Node.js, JavaScript
2.	Security Implementations	Authentication and Access Control	Encryptions
3.	Scalable Architecture	Cloud Infrastructure	IBM Watson IoT Platform
4.	Availability	Use of IOT devices	ESP32, DHT sensor etc.
5.	Performance	Low Latency Communication	MQTT or CoAP