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

Date	07 October 2022
Team ID	PNT2022TMIDI3488
Project Name	Project - Signs with smart connectivity for Better road safety
Maximum Marks	4 Marks

Signs with smart connectivity for Better road safety

Technical Architecture
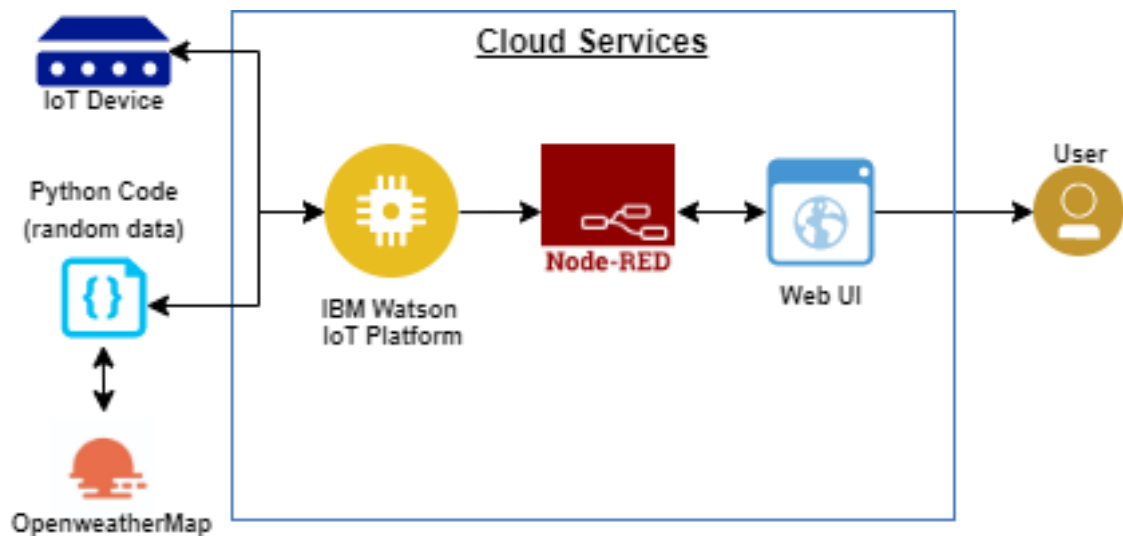
➢ To override the static traffic signs, use the smart sign indicator boards. These connected smart signs use the Weather API to get speed limits from the web app and update automatically Depending on the weather, the speed may increase or decrease and the signs are posted depending on traffic and life-threatening situations. Orientation (schools), warning and service (hospitals, restaurants) signs are displayed accordingly Different operating modes can be selected using buttons)

➢ The IBM Watson IoT Platform acts as a intermediate to connect web applications to IoT devices, hence the creation of the IBM Watson IoT Platform. To connect an IoT device to the IBM cloud, create a device in the IBM Watson IoT platform and obtain device credentials Configure the connection security and create API keys for Node-RED services to access the IBM IoT platform.

Table - 1 : Components & Technologies :

S.No	Component	Description	Technology
1.	User Interface feature	How user interacts with application e.g. Web UI	HTML, CSS, JavaScript (Web application)
2.	Application Logic -1	Logic for a process in the application	Python

3.	Application Logic - 2	Logic for a process in the application	IBM Watson STT service (Cloud)
4.	Application Logic - 3	Logic for a process in the application	IBM Watson Assistant (Cloud)
5.	Database	Data Type, Configurations, etc.,	MySQL
6.	Cloud Database	Database Service on Cloud	IBM DB2
7.	File Storage	File storage requirements	Local Filesystem
8.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud	Local Server Configuration: Local System Cloud Server Configuration: IBM Watson (Cloud)

Table - 2 : Application Characteristics :

S.No	Characteristics	Description	Technology
1.	Open - Source Frameworks	List the open - source frameworks used	IoT devices, Open Weather Map, IBM Watson, Node - RED, Web UI
2.	Security Implementations	List all the security / access controls implemented,use of firewalls, etc.,	Encryptions,Decryptions
3.	scalability	Justify the scalability of architecture	Python
4.	Availability	Justify the availability of application	IBM Watson - Can easily be accessed
5.	Performance	Design consideration for the performance of the application	Which should handle many requests without decrease in QOS