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

Date	16 October 2022
Team ID	PNT2022TMID32979
Project Name	Signs with smart connectivity for Better Road Safety
Maximum Marks	4 Marks

Guidelines:

1. To replace the static signboards,smart connected sign boards are used.
2. These smart connected sing boards get the speed limitations from a web app using weather API and update automatically.
3. Based on the weather changes the speed may increase or decrease.
4. Based on the traffic and fatal situations the diversion signs are displayed.
5. Guide signs are also displayed accordingly.
6. Different modes of operations can be selected with the help of buttons.

Technical Architecture:

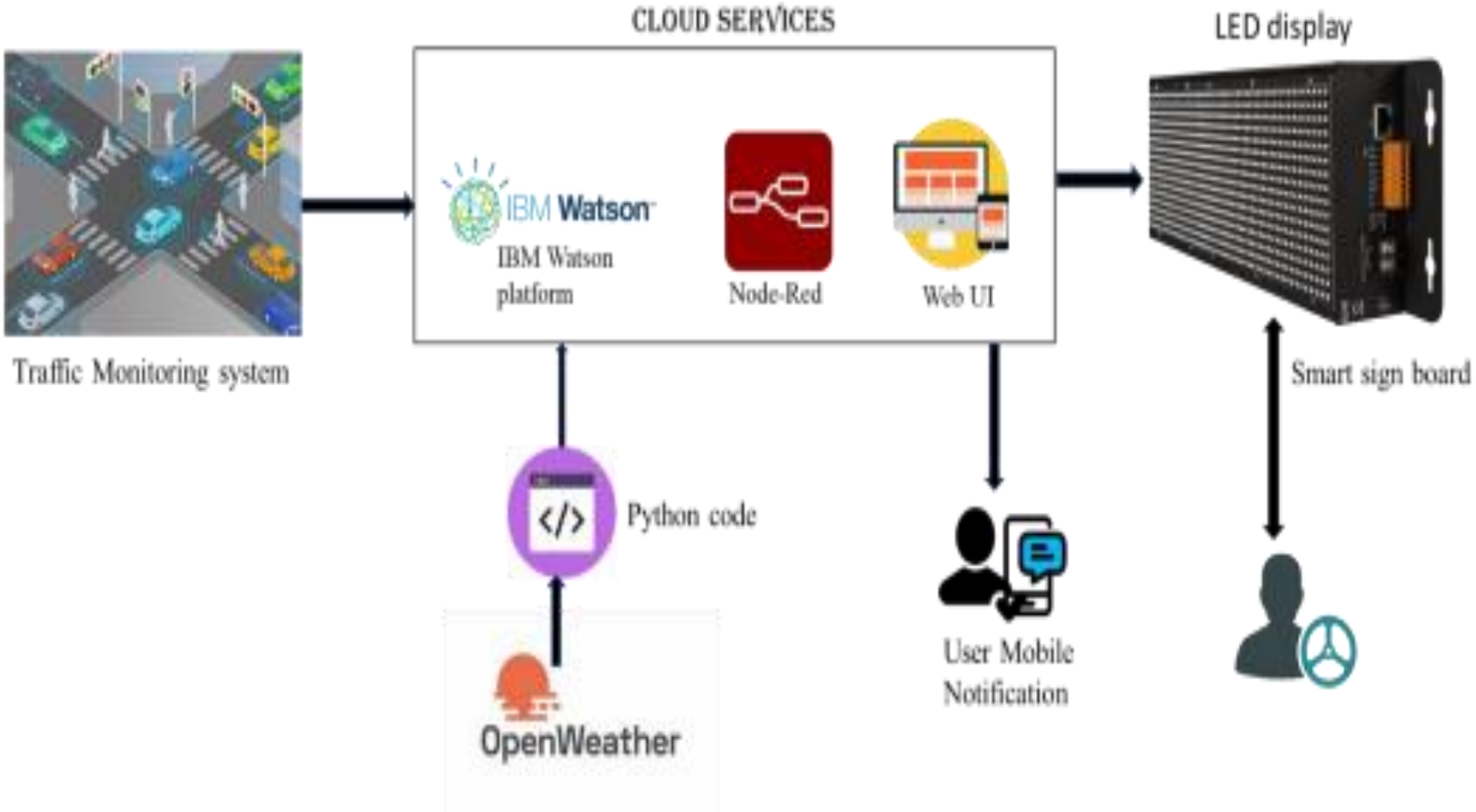

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
•	User Interface	The means by which the user and a computer system interact in particular the use of input devices and software. **e.g.** Web UI, Mobile App, Chatbot etc.	HTML, CSS, JavaScript / Angular Js / React Js etc.
•	Application Logic-1	Road safety rules and regulations state that you should never use a moblie phone while driving.	Java / Python
•	Application Logic-2	• Wear seatbelts and helmets. • Be carefull of speed limits.	IBM Watson STT service .
•	Application Logic-3	Walk carefully on the sidewalks and only cross on the zebra crossing .	IBM Watson Assistant .
•	Database	Data types ,Accident database, configurations etc.	MySQL, NoSQL, etc.
•	Cloud Database	All highway can improve their ability to respond to safety concerns by having a reliable database that provides easily accessible.	IBM DB2, IBM Cloudant etc.

•	File Storage	The document ,save LIVES: road safety technical package details key evidence-based measures identified by many of the world's leading road safety experts.	IBM Block Storage or Other Storage Service or Local Filesystem.
•	External API-1	Aim is to provide road safety informations to the road users.	IBM Weather API, etc.
•	External API-2	The programs and activities include advocating for the safe and efficient transportation.	Aadhar API, etc.
•	Machine Learning Model	Help the students understand the importance of safety on the road when walking as a pedestrian or as one driving a vehicle.	Object Recognition Model, etc.
•	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud **Local Server Configuration:** Computer that serves a client within the local network or LAN. **Cloud Server Configuration :** Process of setting hardware and software details for elements of a cloud environment to ensure that they can interoperate and communicate.	Local, Cloud Foundry, Kubernetes, etc.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
•	Open-Source Frameworks	Open source platform created in partnership with the world bank to mitigate road accidents through road incident data management and analysis.	Technology of Opensource framework
•	Security Implementations	Travelers can minimize their risk by assessing thE road culture in travel areas and implementing safety precautions.	e.g. SHA-256, Encryptions, IAM Controls, OWASP etc.
•	Scalable Architecture	It should be able to easily change and need in requirement.	Technology used
•	Availability	It should be available 24/7 so that it can be beneficial to the customer.	Technology used
•	Performance	Performance review assesses the current road safety situation helps the government to identify the most critical safety aspects and recommends actions to be taken.	Technology used