Project Design Phase-I
Proposed Solution

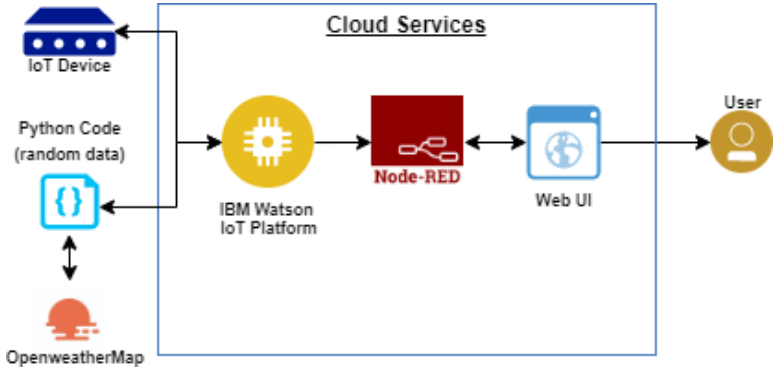| Team ID	PNT2022TMID38970
Project Name	Project-Signs with Smart Connectivity for Better Road Safety

Team Members:

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Proposed Solution:

S.No.	Parameter	Description
1.	**Problem Statement (Problem to be solved)**	Road transport drivers find it hard to get adapted to the changes prevailing in the weather, traffic, other fatal situations and thereby applying suitable driving measures like increasing/ decreasing speeds and taking diversion measures accordingly becomes a challenging task. Therefore, smart signboards that provide timely updation are employed.
2.	**Idea / Solution description**	• Static signboards are replaced with smart connected sign boards that get the speed limitations from a web app using weather API and update automatically. • Based on the weather changes the speed may increase or decrease. • Based on the traffic and fatal situations the diversion signs are displayed. • Guide (Schools), Warning and Service (Hospitals, Restaurant) signs are also displayed accordingly.

		• Different modes of operations can be selected with the help of buttons.
3.	**Novelty / Uniqueness**	**Preceding system's objectives:** • A system that alerts drivers about road signs has been developed and tested using a smart mobile phone. • A game theoretical adversarial intervention detection mechanism for reliable smart road signs has been proposed **Proposed system's objectives:** • Receiving road sign values to the IBM IoT platform from Node-RED Web UI • Weather conditions can be viewed in the Web Application. The user will be able to monitor the prevailing changes through the app and act accordingly
4.	**Social Impact / Customer Satisfaction**	**Social Impact:** • Static signboards simply provide constant information about the speed limits, warnings in order to have a safe travel. But there might be some unexpected changes in the weather or traffic situations due to which some other path must be taken. • Such updated information regarding the roads are not provided in case of static signboards, whereas in case of smart sign boards, timely updated information regarding roads and road diversion measures are being displayed through the web app developed. This in turn, proves to be an effective tool for a safe travel **Customer Satisfaction:** The main objectives of the proposed solution are: • **Road safety and accident mitigation:** Ensures safety of the user by making them take suitable driving measures, thereby preventing the occurrence of accidents • **Time saving:** Since regularly updated information regarding roads is provided, the user can take the suitable paths and reach the destination in time

5.	Business Model (Revenue Model)	
		Description of technical architecture:
		• Changing weather conditions are received through the web app using weather API and are displayed on the smart signboards
		• Warnings regarding lowering speeds at the location of hospitals and schools are displayed on the smart sign board
		• Based on traffic and fatal situations, diversion signs are also displayed
6.	Scalability of the Solution	• In addition to displaying suitable diversion and weather change signs, these boards can be made to display some other extra features like finding the shortest path in reaching a destination and displaying it, thereby providing much more help to the user
		• These effective smart signboards could be implemented throughout the entire nation along the most important roadways, thereby users will find it much more useful and feel safe when travelling through those roads and saving their time also.