

Project Design Phase-I Solution Architecture

Date	30 October 2022
Team ID	PNT2022TMID34520
Project Name	Signs with smart connectivity for better road safety.
Maximum Marks	

In present systems the road signs and the speed limits are static. But the road signs can be changed in some cases. We can consider some cases when there are some road diversions due to heavy traffic or due to accidents then we can change the road signs accordingly if they are digitalized. Intelligent transportation systems offer significant opportunities to save lives. A dynamic signboard that can change based on the situations like weather and traffic can be life saver as well as time saver.

For example, the digital board displaying the speed limit of 60 kms per hour might display 80kms per second if the traffic is very less and the weather is too good while it would show 40kms or even less if the weather is bad or if the traffic is too tight or if there is an accident ahead. There can also be diversion sign boards in case of accidents and road maintainence.

Solution Architecture:

The following image shows a data flow for how the dynamic sign board works.

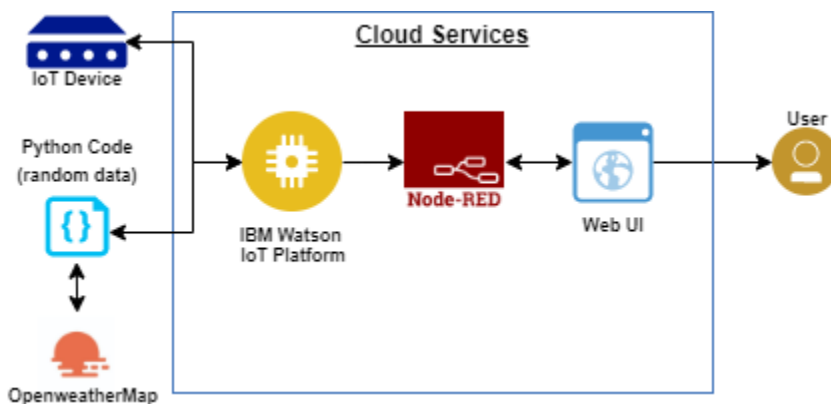


Figure 1: Architecture and data flow for the dynamic sign board.

IoT devices were responsible to give information that are required like the location and the other data that were required for the python script to access information like weather data and so on.

Based on the weather data recieved (random data here) the python script calculates the speed limit while maintaining a stable traffic.

The speed limit set by the program will be checked if it is appropriate by comparing to the traffic and the previously set static speed limit data and will be proceeded and displayed on the speed limit board.

The information like traffic jams, accidents, road maintainance or any other special occassions that could cause diversions should be updated to the web appropriately.

The cloud service would handle things based on the given details and will set diversion signs.