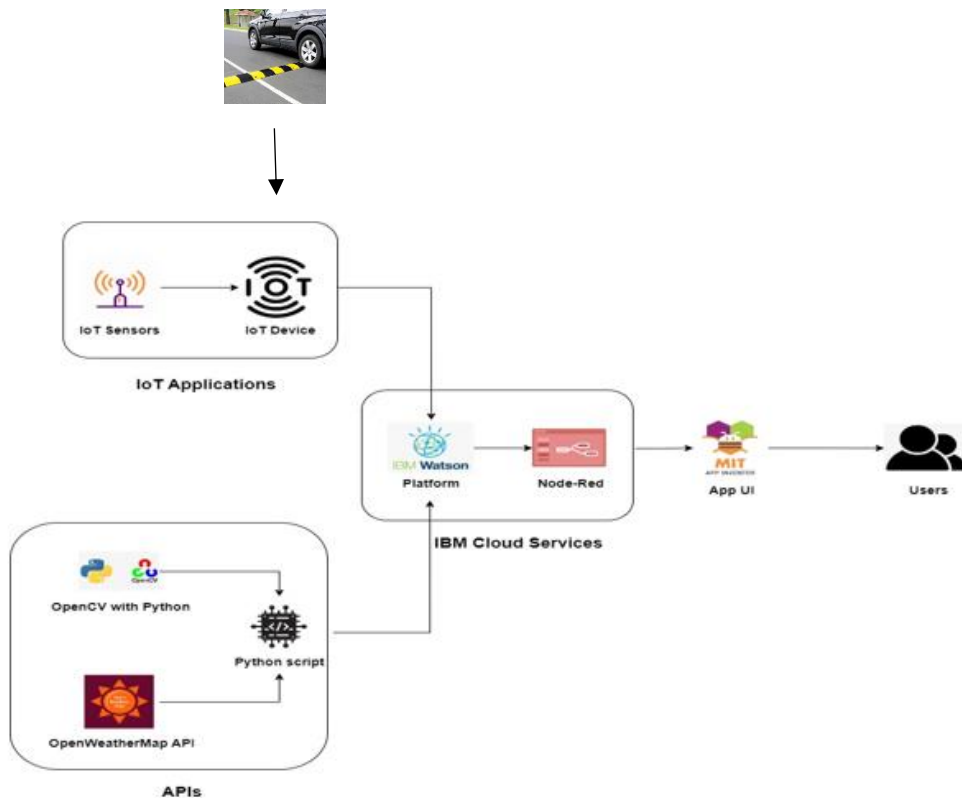


## Project Design Phase-II

### Technology Stack (Architecture & Stack)

Date	03 October 2022
Team ID	PNT2022TMID54276
Project Name	Project - <b>Signs with Smart Connectivity for Better Road Safety</b>
Maximum Marks	4 Marks

### Technology Architecture



**Table-1 : Components & Technologies:**

S.No	Component	Description	Technology
1.	ESP32	<b>complete standalone system or as a slave device to a host MCU, reducing communication stack overhead on the main application processor</b>	<b>ESP32</b> is a series of low-cost, low-power system on a chip microcontrollers with integrated Wi-Fi and dual-mode Bluetooth electrical component
2.	<b>Relay</b>	A <b>relay</b> consists of a set of input terminals for a single or multiple control signals, and a set of operating contact terminals.	
3.	Ultrasonic Sensor	<b>emitting sound waves at a frequency too high for humans to hear</b>	This is similar to how radar measures the time it takes a radio wave to return after hitting an object
4.	LCD	A <b>liquid-crystal display (LCD)</b> is a flat-panel display or other electronically modulated optical device	A type of flat panel display which uses liquid crystals in its primary form of operation
5.	Arduino	The Arduino is a board based on an ATMELE AVR microcontroller	Arduino is an open-source electronics platform based on easy-to-use hardware and software
6.	Traffic light	It's a fairly simple setup with each pin controlling an LED.	Create a model of a three coloured traffic light.
7.	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local File system
8.	External API-1	Purpose of External API used in the application	Open Weather Map API
9.	External API-2	Purpose of External API used in the application	IBM Watson Platform , Node - Red
10.	Machine Learning Model	Purpose of Machine Learning Model	Open CV
11.	Infrastructure (Server / Cloud)	Application Deployment on Local System / CloudLocal Server Configuration: Cloud Server Configuration :	Local, Cloud Foundry, Kubernetes

**Table-2: Application Characteristics:**

<b>S. No</b>	<b>Characteristics</b>	<b>Description</b>	<b>Technology</b>
1.	Open-Source Frameworks	Open Weather Map , NODE-RED, IBM WATSON,MIT App Inventor	IOT, internet
2.	Security Implementations	Powerful security system for everyone's peace of mind no access data hackers cannot access network.	Firewall, Firebase, cyber resiliency, strategy
3.	Scalable Architecture	Easy to extend the network with the aid of the bandwidth of the network	IBM Cloud
4.	Availability	Available every time and everywhere 24/7 so long as the consumer is signed into the network.	IBM Cloud
5.	Performance	Aids massive range of users to use technology	IBM Cloud