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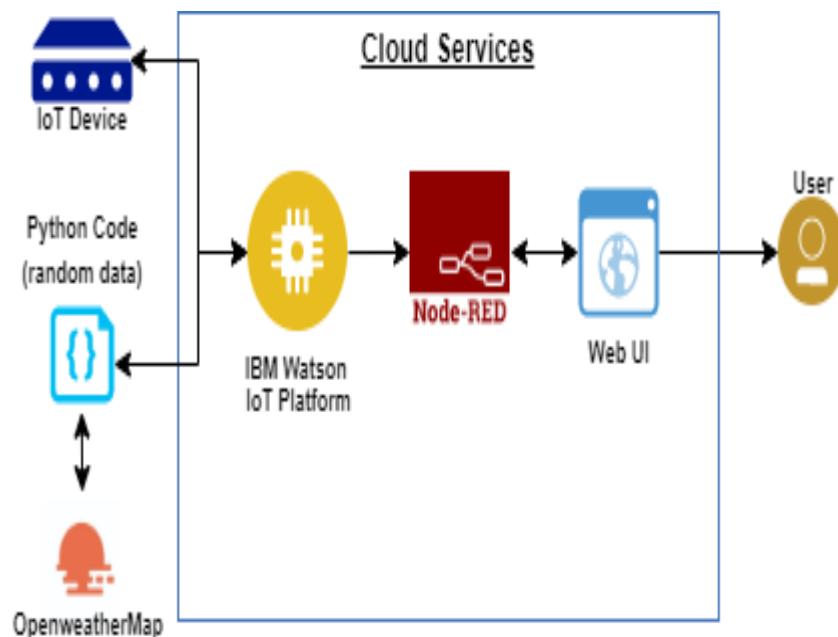## Technology Stack (Architecture & Stack)

Date	03 October 2022
Team ID	PNT2022TMID14966
Project Name	Project – SIGNS WITH SMART CONNECTIVITY FOR BETTER ROAD SAFETY
Maximum Marks	4 Marks

Technical Architecture:

Reference: https://developer.ibm.com/patterns/ai-powered-backend-system-for-order-processing-during-pandemics/

Technical Architecture:

1. *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)*

2. *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	How user interacts with application e.g. Web UI, Mobile App, Chatbot etc.	HTML, CSS, JavaScript / Angular Js / React Js,python , c++
2.	Application Logic-1	Logic for a process in the application	Java / Python
3.	Application Logic-2	Logic for a process in the application	IBM Watson STT service
4.	Application Logic-3	Logic for a process in the application	IBM Watson Assistant
5.	Database	Data Type, Configurations etc.	MySQL, NoSQL, etc.
6.	Cloud Database	Database Service on Cloud	IBM DB2, IBM Cloudant etc.
7.	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem
8.	External API-1	Purpose of External API used in the application	IBM Weather API, etc.
9.	External API-2	Purpose of External API used in the application	Aadhar API, etc.
10.	Machine Learning Model	Purpose of Machine Learning Model	Object Recognition Model, etc.
11.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Cloud Server Configuration :	Local, Cloud Foundry, Kubernetes, etc.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	*TINKER CAD, NODERED, IBM WATSON, MURAL, MIRO, PYCHARM*	Firewall, Firebase, cyber resiliency,strategy
2.	Security Implementations	*Powerful security system for everyone's peace of mind* *No access data* *Hackers cannot access* *network*	IoT, internet
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

References:

https://c4model.com/

https://developer.ibm.com/patterns/online-order-processing-system-during-pandemic/

https://www.ibm.com/cloud/architecture

https://aws.amazon.com/architecture

https://medium.com/the-internal-startup/how-to-draw-useful-technical-architecture-diagrams-2d20c9fda90d