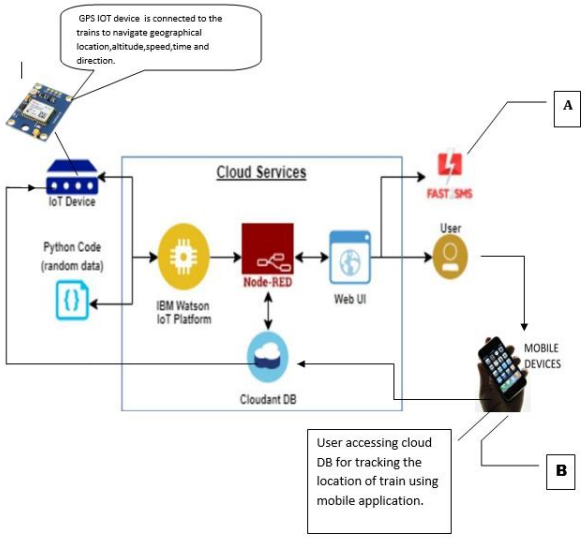
Project Design Phase-II
Technology Stack (Architecture & Stack)

Date	03 October 2022
Team ID	PNT2022TMID39421
Project Name	An IOT based Railway tracking system using GPS
Maximum Marks	4 Marks

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table1 & table 2



Guidelines:

1. Include all the processes (As an application logic / Technology Block)
2. Provide infrastructural demarcation (Local / Cloud)
3. Indicate external interfaces (third party API's etc.)
4. Indicate Data Storage components / services
5. Indicate interface to machine learning models (if applicable)

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 etc
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 IOT platform
4.	Application Logic-3	Logic for a process in the application	Node RED
5.	Database	Data Type, Configurations etc.	MySQL, cloudant DB
6.	Cloud Database	Database Service on Cloud	IBM DB2, IBM Cloudant etc.
7.	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	Kaa,Zetta,Device hive,Thinger.io,Mainflux	RFID,NFC,low-energy bluetooth,low energy,wireless,low-energy radio protocols,LTE-A and WIFI-Direct
2.	Security Implementations	Network access controllers,agent based or agentless endpoint protection,network monitoring,IOT management systems,firewalls(packet-filtering firewalls,proxy firewalls)	e.g. SHA-256, Encryptions, IAM Controls, OWASP etc.
3.	Scalable Architecture	Ability to support an increasing number of connected devices,users,application features and analytics capabilities without any degradation in the quality of service	Advanced Vehicle Tracking or Transportation Monitoring
4.	Availability	An IOT based GPS train tracking system	GPS
5.	Performance	The performance of the application is global average user range rate error(URRE) of <=0.006 m/sec over any 3-second interval,with 95% probability	GPS status and toolbox

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