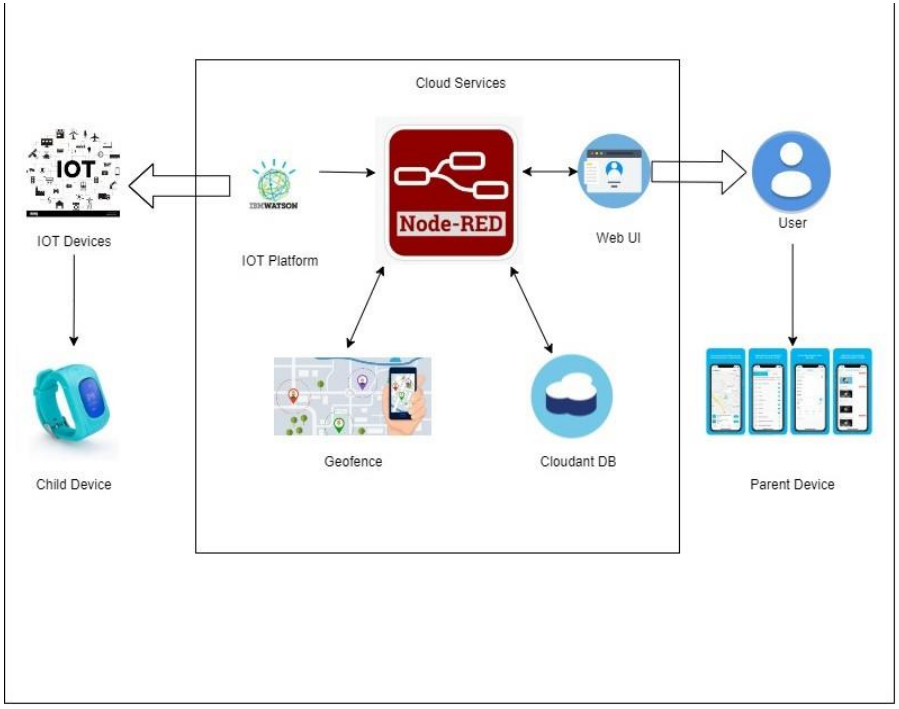
Project Design Phase-II
Technology Stack (Architecture & Stack)

Date	11 October 2022
Team ID	PNT2022TMID14258
Project Name	Project - IoT Based Safety Gadget for Child Safety Monitoring and Notification
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	User had to register and view the other device's location e.g., Web UI, Mobile App etc.	HTML, CSS, JavaScript
2.	IoT Application Logic-1	Registration of both device in each other's device	Python
3.	IoT Application Logic-2	It is mandatory that GPS should be on condition, Parent's device should always be connected to Child's device	IBM Watson Assistant
4	Database	Data Type can be any format such as arbitrary binary data, text. User-defined blob of data sent from Cloud IoT Core to a device etc.	SQLite, Influx DB
5.	Cloud Database	Tracking software have to be installed on cloud interface for tracking child device	IBM DB2, IBM Cloudant etc.
6.	File Storage	Files were stored depending on the content they contain and the time gap they have to be stored	IBM Block Storage or Local Filesystem
7.	External API-1	The External API in the device allows to use the internet for communicating and conducting allotted operations efficiently	Aadhar API, etc.
8.	External API-2	External API used in the device to expose data that enables those devices to transmit data to your device/mobile, acting as a data interface.	City Geo-Location Lookup API etc.
9.	Machine Learning Model	IoT and machine learning provide insights that would otherwise be concealed in data for quick, automated greater decision-making	Object Recognition Model, Danger Prediction Model etc.
10.	Infrastructure (Server / Cloud)	Application Deployment on a Local System or the Cloud Wearable technology configuration for local servers Configuration of a cloud server: a vast network supporting IoT applications and devices	Local, Cloud Foundry,Kubernetes, Underlying Infrastructure etc.

Table-2: Application Characteristics:

S. No	Characteristics	Description	Technology
1.	Open-Source Frameworks	A tool that greatly reduces the amount of manual labor required to write and configure code. It offers quick development, is simple to set up, and has a large support network.	Mainflux, Thinger.io, Zetta for non- stop streaming of child condition, Openremote
2.	Scalable Architecture	If problem arises parents can see their child's location	Multiple Data Storage Technologies, Reliable Micro services, Automated Bootstrapping
3.	Availability	Child monitor, location monitor	GPS, GSM, Raspberry pi microprocessor
4.	Performance	When a child route is getting out of fixed boundary the warning will be sent to the registered parents device	GSM tracker, High Durable DeviceBattery