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

Date	03 October 2022
Team ID	PNT2022TMID14810
Project Name	Project - IoT Based Safety Gadget for Child Safety Monitoring & Notification
Maximum Marks	4 Marks

Technical Architecture:

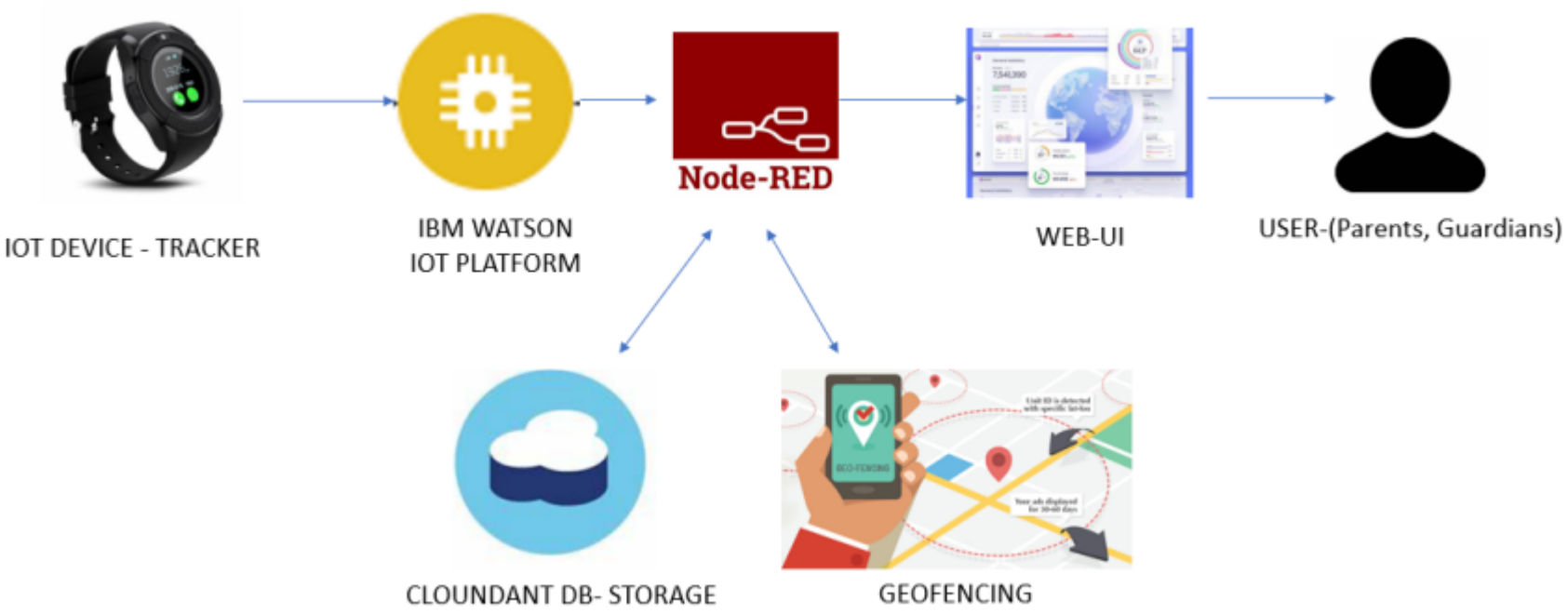

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Users react with the Application,Web UI/Chatbot.	HTML, CSS, JavaScript / Angular Js / React Js etc.
2.	Application Logic-1	Registration of children and parents details in the application.	Python,C.
3.	Application Logic-2	Children's device GPS should be always ON. So the location can be shared to the parents.	IBM Watson STT service, IBM Watson Assistant
4.	Application Logic-3	The information of the child's health and location should be alerted to the parents through GSM with the help of GPS.	IBM Watson Assistant, IBM Watson STT service,
5.	Database	Data type can be of any configurations and locations are stored in the IBM cloud for future use	MySQL, NoSQL, etc.
6.	Cloud Database	IBM Cloudant DB	IBM Cloudant
7.	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem
8.	External API-1	User to allow or give permission for the IoT device data communication and access the child location	GPS module
9.	External API-2	To view the Location of the child and integrating Geo-Fence with Google Maps	Google Maps
10.	Machine Learning Model	For monitoring the child, its activities and with a ML model, we can easily know what's happening to the child and prevent any mishappenings	Object Recognition Model, State Prediction Model, Risk Management, etc.
11.	Infrastructure (Server / Cloud)	Local Server chassis: Wearable high-tech mechanism. Cloud Server Configuration: A network that reinforces IoT devices and applications.	Cloud Foundry

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	The end users (parents/guardians) can monitor their children easily by using this proposed method.	UI/UX
2.	Security Implementations	Alarm notification and continuous video recording monitoring whenever the emergency button is pressed. The wifi modules are of assistance in sending the monitoring particulars, the user will be notified with and update if any errors are found,for the efficient functioning of the device.	e.g. SHA-256, Encryptions, IAM Controls, OWASP etc.
3.	Scalable Architecture	Sensor-IoT based cloud architecture	IBM cloud
4.	Availability	Mobile,Laptop/Desktop and other distributed servers	MIT app
5.	Performance	Checking the child location if hye/she crosses the geofence. If they do, the notifications will be sent to parents/guardians.The health condition of the children will be sent to the parent.	Temperature sensor