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

Date	1 November 2022
Team ID	PNT2022TMID33996
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
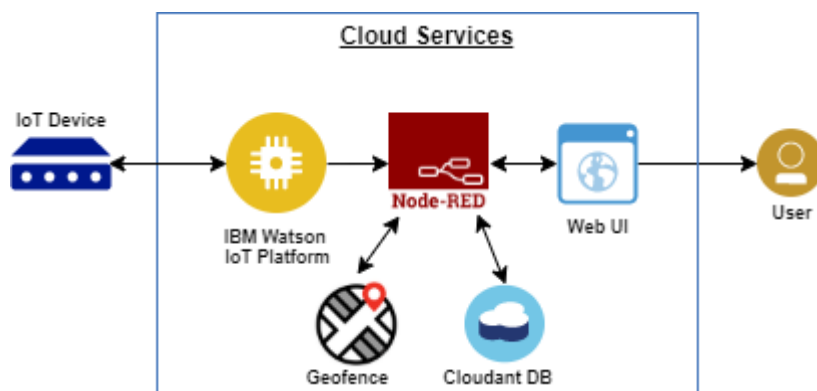

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
•	User Interface	The user interface (UI) is the point of human-computer interaction and communication in a device.	HTML, CSS, JavaScript / Angular Js / React Js etc.
•	Application Logic-1	Registration of child's and parent's device in each other device.	Python
•	Application Logic-2	The GPS receiver calculates its own four-dimensional position in spacetime based on data received from multiple GPS satellites.	IBM Watson STT service
•	Application Logic-3	The information is to be collected and dispatched to the authenticator via GSM equipping the GPS coordinates	IBM Watson Assistant

		to efficiently locate access and monitor the child.	
•	Database	A database is an organized collection of structured information, or data, typically stored electronically in a computer system. A database is usually controlled by a database management system (DBMS).	MySQL, NoSQL, etc.
•	Cloud Database	Data organization on the cloud A cloud database is a database service built and accessed through a cloud platform. It serves many of the same functions as a traditional database with the added flexibility of cloud computing.	IBM DB2, IBM Cloudant etc.
•	File Storage	File storage, also called file-level or file-based storage, stores data in a hierarchical structure. The data is saved in files and folders, and presented to both the system storing it and the system retrieving it in the same format.	IBM Block Storage or Other Storage Service or Local Filesystem
•	IBM Watson IOT platform	Watson IoT Platform features Analytics and Watson APIs Completely manage your IoT landscape and make better business decisions.	IBM Weather API, etc.
•	Node RED	Node-RED is a programming tool for wiring together hardware devices, APIs and online services in new and interesting ways.	Aadhar API, etc.
•	Geofence	a virtual geographic boundary, defined by GPS or RFID technology, that enables software to trigger a response when a mobile device enters or leaves a particular area	Object Recognition Model, etc.
•	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration:IBM Watson IOT Cloud Server Configuration : cloudant DB	Local, Cloud Foundry, Kubernetes, etc.

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology

•	Open-Source Frameworks	The framework for child safety utilizing a Sensor and IoT. The Key attribute of the system is the deployment of a smart detector for the collection of Data, cloud-based analysis, and decision-based on Monitoring for children's Safety.	Thinger.io, and Zetta
•	Security Implementations	To activate the alarm and facilitate video recording whenever the emergency button is pressed. We can use the cloud to accumulate the surveillance data of the children.	e.g. SHA-256, Encryptions, IAM Controls, OWASP etc.
•	Scalable Architecture	enhanced by the installation of the mini camera inside a smart gadget for exemplary security and protection	Data Storage Technologies, Reliable Microservices
•	Availability	It also provides the current location along with travel details.It is a site that is available online.	Temperature, Pulse sensor, GPS, GSM, Web camera, Raspberry pi microprocessor.
•	Performance	The complete data of the children's location will be stocked in the repository and the execution of the device diminishes in a less network area	GSM tracker,Device Battery