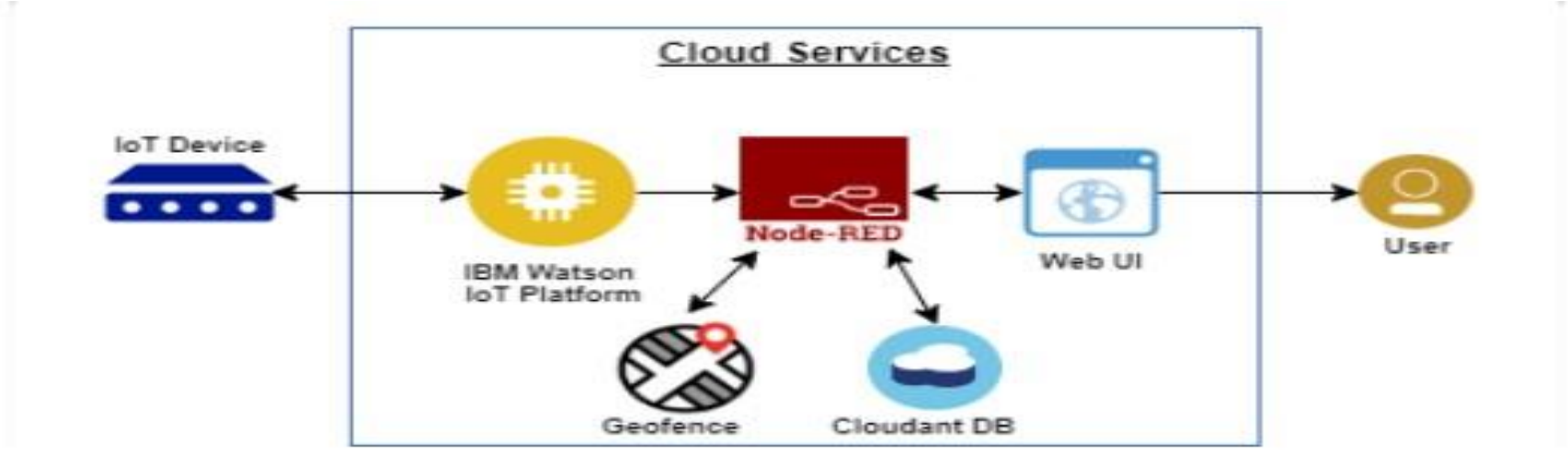
Project Design Phase-II
Technology Stack (Architecture & Stack)

Date	**29-10-2022**
Team ID	**PNT2022TMID18238**
Project Name	**Project - IoT Based Safety Gadget For Child Safety Monitoring & 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

Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Web UI, Node-RED, MIT app	IBM IoT Platform, IBM Node red, IBM Cloud
2.	Application Logic-1	Create IBM Watson IoT platform and create node- red service	IBM Watson, IBM cloud service ,IBM node-red
3.	Application Logic-2	Develop python script to publish and subscribe to IBM IoT Platform	python
4.	Application Logic-3	Build a web application using node-red service	IBM Node-red
5.	Database	Data Type, Configurations etc.	MySQL
6.	Cloud Database	Database Service on Cloud	IBM Cloudant
7.	File Storage	Developing mobile application to store and receive the sensors	Web UI ,Python
		information and to react accordingly	

8.	External API-1	Using this IBM child monitoring API we can track the location of the place of child and where the child had been leaved the geofence area.	IBM Weather API, etc.
9.	External API-2	Using this IBM Sensors it detects the child activity, temperature and provides the information to the parents or caretaker through web UI	Aadhar API, etc.
10.	Machine Learning Model	Using this we can derive the object recognition model	Object Recognition Model, etc.
11.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Server Configuration	IBM cloudant, IBM IoT Platform

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	MIT app Inventor	MIT License
2.	Security Implementations	IBM Services	Encryptions, IBM Controls
3.	Scalable Architecture	sensor-IoT Cloud based architecture	Technology used
4.	Availability	Mobile, laptop, desktop	MIT app
5.	Performance	checking the child's location notifications will be generated if the child crosses the geofence. Notifications will be sent according to the child's location to their parents or caretakers. The entire location data will be stored in the database.	Temparature sensor