Project Design Phase-II

Technology Stack (Architecture & Stack)

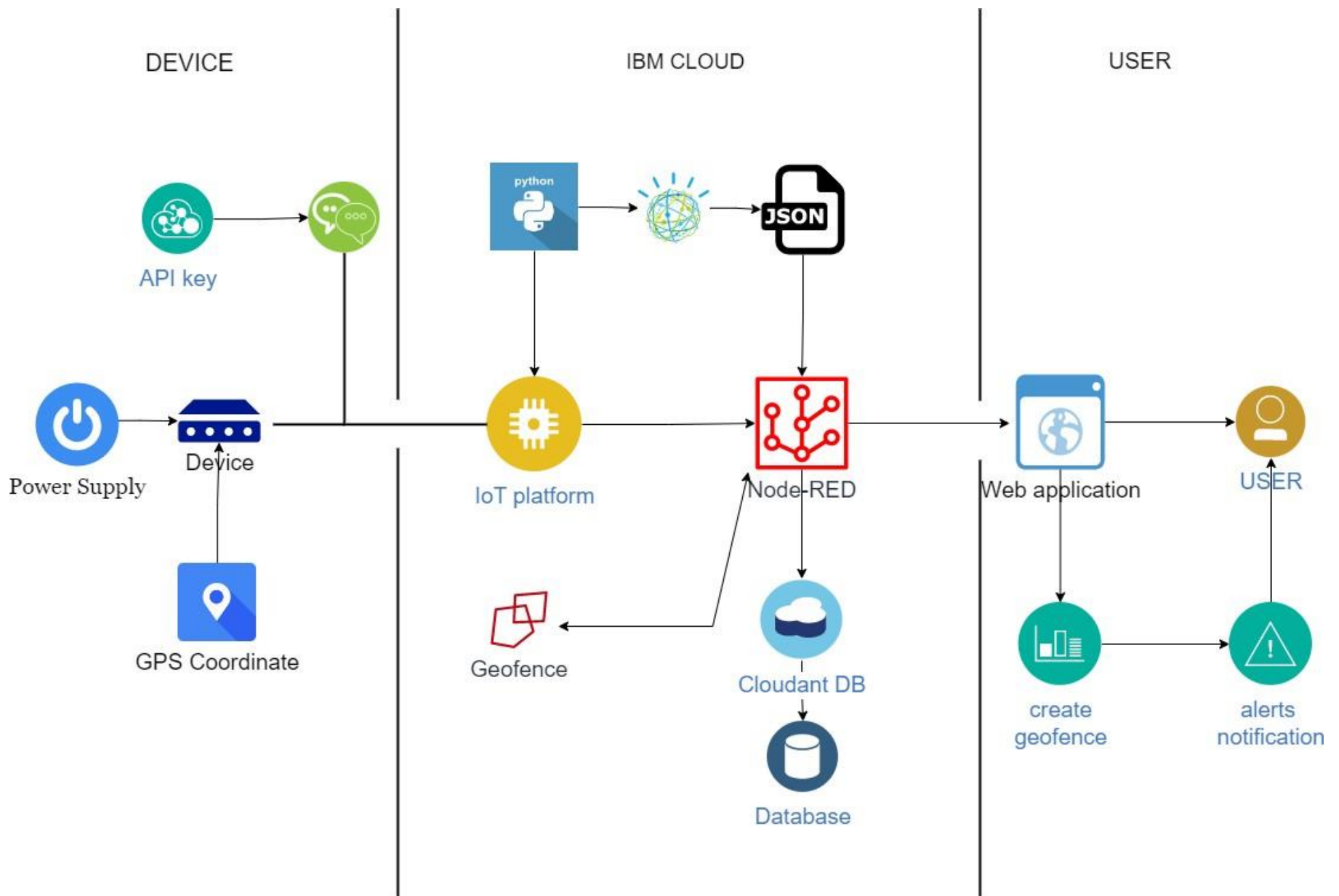| Date	16 October 2022
Team ID	PNT2022TMID42442
Project Name	Project - IoT Based Safety Gadget for Child Safety Monitoring & Notification
Maximum Marks	4 Marks

Technical Architecture

DEVICE | IBM CLOUD | USER

API key

Power Supply
Device
GPS Coordinate

python
JSON

IoT platform
Geofence
Node-RED
Cloudant DB
Database

Web application
USER
create geofence
alerts notification

Table-1 :

Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	Web UI	node JS
2.	Application -1	To publish location details in IBM Watson Platform	Python
3.	Application -2	Process in the IoT application	IBM Watson IoT Platform
4.	Application -3	It assists the IoT Platform	IBM Watson Assistant
5.	Database	Data Configuration & Types	IBM Bluemix & HTTP
6.	Cloud Database	Database Service on Cloud	IBM Cloudant
7.	File Storage	File storage requirements	IBM Block Data Storage
8.	External API-1	Connect the device to the IoT platform	IBM Device API
9.	External API-2	Connect the node-RED services	Location API
10.	Machine Learning Model	It uses past behaviour to identify patterns and builds models that help predict future behaviour and events	Using program condition loop
11.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration: Wireless local Server Cloud Server Configuration : IBM Cloud Server	Cloud Foundry

Table-2:

Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Sensors, software applications & Cloud application	Open connectivity foundation
2.	Security Implementations	The technology segment focused on safeguarding connected devices and networks in the IoT	Encryptions, monitor traffic congestion, using admin, device authentication
3.	Scalable Architecture	If the communication stack from the end devices to the cloud is made asynchronous, so that load times are cut down	Agile methodology, IBM architecture
4.	Availability	use of distributed servers , the system must be available 24/7	client server, server service,GPS System
5.	Performance	number of requests per sec, stimulate devices from different locations and real time system	network technologies like wifi, 4G, etc. it works with popular chip sets