TEAM ID: PNT2022TMID38195

Project Design Phase-I
Solution Architecture

Date	22nd October 2022
Project Name	Project - IOT Based Safety Gadget for Child Safety Monitoring & Notification
Maximum Marks	4 Marks

Introduction:

Solution architecture is an architectual description of a specific solution with many data sources that bridges the void between industrial obstacles and technology solutions.
Its aims to

- Find out the finest tech solution to decipher subsisting business crises.
- Also Outlines the composition, attributes, behaviour, and other aspects of the software to project stakeholders.
- Defines the properties, development chapter, and quick fix essentials.
- And also produce the stipulation in accord to which the solution is interpreted, controlled, and dispatched.

It is comprised of many sub processes that draw the guidance from various enterprisse Architecture viewpoints.

REQUIREMENTS:

The requirements of this project are

- Embedded C
- Python framework

For AVR,ARM and in addition for Wiring as Device BootLoader.

- IBM Cloud workspace for depository and APIs.
- The front end by XML for android.

DESIGN:

All the requisite are used to draft the Application. The layout and architecture of the software are done in a distinctive approach so the software can be employed and developed imminently. The Arduino acquires the region from the GPS equipment and consigns it to the cloud to inspect if the end user is within the confined zone. If the user is further away from the confined zone, an alert is sent to the catalogued mobile through the cloud. When the requisition is opened, the locality is obtained from the cloud and unveiled on the mobile.

IMPLEMENTATION:

The implementation is done and executed by progressing the logic and coding. Where the vital packages are imported and for each router specific logic is developed in accordance to the usage.

Development of a safety device for kids to guarantee their security in the absence of understated examination of their parents.
The various aspects involve:

- GPS
- Signal by Notification

INDIVIDUAL TESTING:

- Every portion of the software is to be designed by discreet team members.
- Also tested individually by the python unit testing IOT.

INTEGRATION AND TESTING:

After individual testing, all the software sections were integrated and tried out ultimately, so the flask program could be run on any platform. The testing progression encompasses Alpha testing and Beta testing.

DEPLOYMENT:

- The flask application in the long run is distributed in the IAAS rostrum like IBM cloud assistance, so it can be run in HTTPS protocol alongside SSL.
- In the deployment process, a real-time database is fastened on the edge of real-time file storage.

MAINTENANCE:

After deployment, if there is any conglomeration refurbish, it is accomplished in the software.

SOME CATASTROPHIC FEATURES IN THE DEVICE:

1. ALARM RING:

The safety system redirects a warning to the phone at any occasion, it determines any pursuit. Arming methodology decides which category of alerts to get.

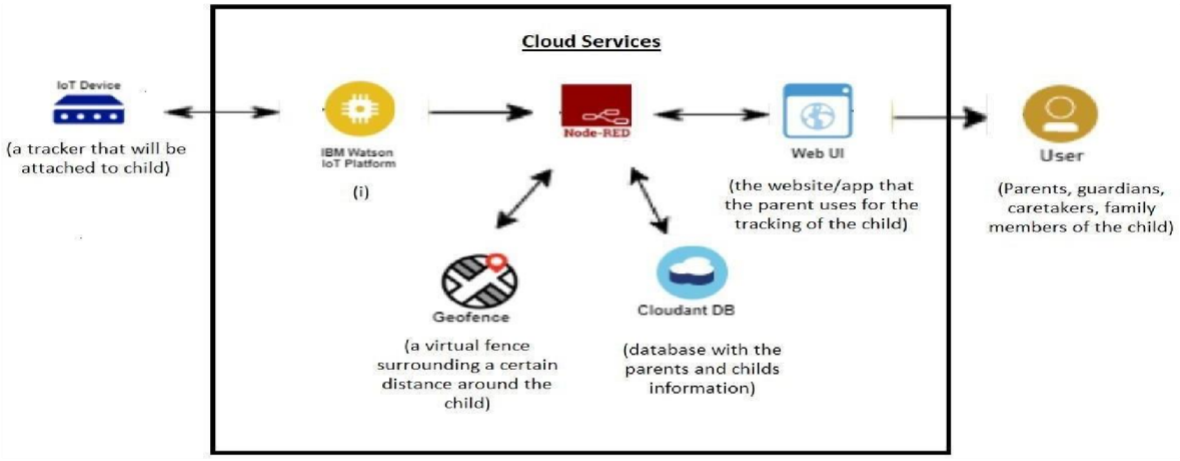
2. EMERGENCY NOTIFICATION:

An emergency notification system is a labour-saving mechanism to get in touch with group of people within a corporation and assign salient information during a crisis.

3. GPS:

The GPS helps to escalate the protection and fitness characteristics on the device. Depending on the device, it can alert parents about their child's location in case of any crisis and helps to trace their route duration and distance.

SOLUTION ARCHITECTURE DIAGRAM:



CONCLUSION:

The solution architecture of IOT Based Safety Gadget for Child Safety Monitoring & Notification has been done successfully.