

PROJECT REPORT

IoT BASED SAFETY GADGET FOR CHILD SAFETY MONITORING AND NOTIFICATION

Team ID: PNT2022TMID20307

1. INTRODUCTION

1.1 Project Overview

1.2 Purpose

2. LITERATURE SURVEY

2.1 Existing Problem

2.2 References

2.3 Problem Statement Definition

3. IDEATION AND PROPOSED SOLUTION

3.1 Empathy Map Canvas

3.2 Ideation and Brainstorming

3.3 Proposed Solution

3.4 Problem Solution Fit

4. REQUIREMENT ANALYSIS

4.1 Functional Requirements

4.2 Non-Functional Requirement

5. PROJECT DESIGN

5.1 Data Flow Diagrams

5.2 Solution And Technical Architecture

5.3 User Stories

6. PROJECT PLANING AND SCHEDULING

6.1 Sprint Planning And Estimation

6.2 Sprint Delivery Schedule

6.3 Report From JIRA

7. CODING AND SOLUTIONING

7.1 Feature 1

7.2 Feature 2

7.3 Database Schema

8. TESTING

8.1 Test cases

8.2 User Acceptance Testing

9. RESULTS

9.1 Performance Metrics

10. ADVANTAGES AND DISADVANTAGES

11. CONCLUSION

12. FUTURE SCOPE

13. APPENDIX

CHAPTER 1

INTRODUCTION

The internet of things (IoT) refers to the set of devices and systems that stay interconnected with real-world sensors and to the internet. For years' Child safety has been under threat and it is very important to provide a technology-based solution which will help them under panic situations and monitor them using a smart gadget. The proposed system is equipped with GSM and GPS modules for sending and receiving calls and SMS between safety gadgets and parental phones, the proposed system also consists of Wi-Fi modules used to implement IoT and send all the monitoring parameters to the cloud for android app monitoring on parental phones. Android application can be used to track the current location of a safety gadget using its location coordinates on the parental phone android app and also via SMS request from the parent phone to the safety gadget. Panic alert system is used during panic situations and automatic SMS alert and phone call is triggered from safety gadget to the parental phone seeking for help and also monitored for plug and unplug from hand, as soon the gadget is unplugged from hand a SMS is triggered to parental phone and the alert parameter is also updated to the cloud.

1.1 PROJECT OVERVIEW

Child and women safety is a challenging problem nowadays due to antisocial elements in the society. The crime rate is increasing day by day. Schools and working places need high surveillance for ensuring the safety of children and women. Smartphones are playing a major role in ensuring safety, where some mobile based applications provide alert systems. During the emergency, mobile apps alert the control room of nearby police stations or caretakers of children. The literature shows that location tracking devices are available in the market, but it does not provide the complete solution to the problem. The solution to this problem is to design an IoT device, which senses the child's location and environment and during an emergency, it should send the alert to the parents automatically.

1.2 PURPOSE

Heart-beats, temperature is monitored and the values are updated to cloud continuously for parent app monitoring. Boundary monitoring system is implemented on safety gadgets with the help of BEACON technology, as soon as the safety gadget moves far away from the binding gadget an alert is provided to the parent on the binding gadget. The system is used to monitor the health parameters and also used for location tracking during necessary situations in safety concerns.

CHAPTER 2

LITERATURE SURVEY

2.1 EXISTING PROBLEM

Child safety and tracking is a major concern as the number of crimes on children are reported nowadays. With this motivation, a smart IoT device for child safety and tracking is developed to help the parents to locate and monitor their children. The novelty of the work is that the system automatically alerts the parent/caretaker by sending SMS, when immediate attention is required for the child during an emergency. The parameters such as touch, temperature & heartbeat of the child are used for parametric analysis and results are plotted for the same. The above system ensures the safety and tracking of children.

2.2 REFERENCES

- [1] Authors: M Nandini Priyanka, S Murugan, K. N. H. Srinivas, T. D. S. Sarveswara Rao, E. Kusuma Kumari. Title: Smart IoT Device for Child Safety and Tracking. Published in: 2019 IEEE.
- [2] Authors: Akash Moodbidri, Hamid Shahnasser Title: Child safety wearable device. Published in: 2017 IEEE.
- [3] Authors: Aditi Gupta, Vibhor Harit. Title: Child Safety & Tracking Management System by using GPS. Published in: 2016 IEEE.
- [4] Authors: Dheeraj Sunehera, Pottabhatini Laxmi Priya. Title: Children Location Monitoring on Google Maps Using GPS and GSM. Published in: 2016 IEEE

2.3 PROBLEM STATEMENT DEFINITION

Basically, children cannot complain about abuse which they face in their daily life to their parents. To prevent children from being attacked, an autonomous real-time monitoring system is necessary for every child out there. In this system, the collected values from every sensor like temperature sensor, pulse rate detection sensor, metal detection sensor, and the location value from GPS are used to detect the status of the child and alerts the respective guardians using GSM accordingly.

CHAPTER 3

IDEATION AND PROPOSED SOLUTION

3.1 EMPATHY MAP CANVAS

An empathy map is a collaborative tool that allows teams to develop a better understanding of their customers. An empathy map, like a user persona, can represent a group of users, such as a consumer segment. Dave Gray invented the empathy map, which has grown in popularity among the agile community. A collaborative visualization used to articulate what we know about a particular type of user. It externalizes knowledge about users in order to 1) create a shared understanding of user needs, and 2) aid in decision making.

3.2 IDEATION AND BRAINSTORMING

Brainstorming is a problem-solving strategy used in groups that involves the spontaneous production of innovative ideas and solutions. This strategy necessitates a lengthy, free-flowing debate in which each member of the group is encouraged to think aloud and propose as many ideas as possible based on their diverse knowledge.

MEGA SUNDAR.A

- Creation of mobile application
- Integration with smart watch
- Geofencing the child's movements
- Satellite call to child in case of emergency

ANAND.L

- Creation of web application
- Integration with mobile as PWA

- Geofencing child's movements through APIs
- RFID based additional tracking

IDA HOPE.P

- Brilliant UI/UX design for web application
- Good UI/UX design for mobile application
- Smart design of smart watches
- Integration with Cloud services

STANLY SAMUEL.M

- Creation of any application
- Integration with parent's mobile
- Integration with police in case of emergency
- RFID based home in and out tracking

Top 3:

- Creation of mobile application
- Geofencing child's movements through APIs
- Integration with Cloud services

3.3 PROPOSED SOLUTION

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	A tracker that helps parents track a child's location so that the child doesn't get into dangerous situations.
2.	Idea / Solution description	Child tracker helps the parents in continuously monitoring the child's location. They can simply leave their children in school or parks and create a geofence around the particular location. By continuously 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.
3.	Novelty / Uniqueness	A tracker used for child's safety and protection, such that it won't interfere with the day to day life of the child as well as be a very easy to use interface for parents has not been developed yet. Hence, the proposed solution will ensure that there is a device that can be used in all areas, and uses different sorts of softwares integrated together to maintain accuracy and ensure the safety of the child.
4.	Social Impact / Customer Satisfaction	Reduce the anxiety, worry and nervousness of a parent when they are not around the child. Having a peace of mind on the child's whereabouts will increase customer satisfaction, as well as the inclusion of an easy to use and interactive user interface. The reduction of child kidnappings, injuries, accidents, and missing children in the country.
5.	Business Model (Revenue Model)	Business to Consumer Model, Licensing model, Subscription, Model premium
6.	Scalability of the Solution	By adopting multiple data storage technologies, controlling the IoT data pipeline, and using automated bootstrapping we ensure that the device is highly scalable.

3.4 PROBLEM SOLUTION FIT

<p>Define CS, fit into CC</p>	<p>1. CUSTOMER SEGMENT(S)</p> <p>Who is your customer?</p> <p>CS</p> <p>The customers are:- Working parents of 0-5 y.o. Kids Family members, caretakers, guardians and babysitters.</p>	<p>6. CUSTOMER CONSTRAINTS</p> <p>CC</p> <p>What constraints prevent your customers from taking action or limit their choices of solutions? The possible constraints are Spending power Budget No cash Network connection Available devices Geo Positioning System (GPS)</p>	<p>Explore AS, differentiate</p>
	<p>2. JOBS-TO-BE-DONE / PROBLEMS</p> <p>J&P</p> <p>Which jobs-to-be-done (or problems) do you address for your customers? There could be more than one; explore different sides.</p> <p>Creating a geofence around the child after monitoring its activities.</p> <p>With the help of geofence, the child's parent get a notification whenever the child crosses the geofence.</p>	<p>9. PROBLEM ROOT CAUSE</p> <p>RC</p> <p>What is the real reason that this problem exists? What is the back story behind the need to do this job? i.e. customers have to do it because of the change in regulations The root cause of this problem is that the child not informing its parents whenever it goes out. More and more children go missing and only some children are recovered. Child trafficking</p>	
<p>7. BEHAVIOUR</p> <p>BE</p> <p>What does your customer do to address the problem and get the job done? i.e. directly related: find the right solar panel installer, calculate usage and benefits; indirectly associated: customers spend free time on volunteering work (i.e. Greenpeace) After the customer gets access to the child's location, he/she can go to the specified location and find their child.</p>	<p>5. AVAILABLE SOLUTIONS</p> <p>AS</p> <p>Which solutions are available to the customers when they face the problem or need to get the job done? What have they tried in the past? What pros & cons do these solutions have? i.e. pen and paper is an alternative to digital notetaking</p> <p>Whenever the child goes to a location other than its geofence, its parent gets a notification stating that his/her child is in danger.</p> <p>Earlier the customer tried to contact their nearest police station.</p> <p>Now the customer uses this application.</p> <p>Pros and cons of previous solution:</p> <p>Pro: Human insight.</p> <p>Con: Unnecessary hassle and a cumbersome process. Child's location is not easily accessible.</p> <p>Pros and cons of current solution:</p> <p>Pro: Child's location is very easily accessible because the parent gets the notification.</p> <p>Con: Parents who don't have access to smart phone cannot make use of this application.</p>		

<p>3. TRIGGERS TR</p> <p>What triggers customers to act? i.e. seeing their neighbour installing solar panels, reading about a more efficient solution in the news.</p> <p>Whenever the child crosses its <u>perimetre</u>, the parent gets the notification and acts accordingly.</p>	<p>10. YOUR SOLUTION SL</p> <p>If you are working on an existing business, write down your current solution first, fill in the curves, and check how much it fits reality.</p> <p>The customers are the parents, guardians, caretakers and babysitters.</p> <p>We constantly monitor the child's movements and create a <u>perimetre</u> for the child.</p> <p>Whenever the child crosses the <u>perimetre</u>(s), the child goes to another location other than its usual ones! the parent gets a notification stating that his/her child has crossed the <u>perimetre</u>, so that the parent gets alerted.</p>	<p>8. CHANNELS of BEHAVIOUR CH</p> <p>8.1 ONLINE</p> <p>What kind of actions do customers take online?</p> <p>The customer constantly monitors his/her child and gets access to their location. The customer gets a notification when something suspicious activity occurs.</p>
<p>4. EMOTIONS: BEFORE / AFTER EM</p> <p>How do customers feel when they face a problem or a job and afterwards?</p> <p>i.e. lost, insecure > confident, in control - use it in your communication strategy & design.</p> <p>Whenever the customer faces the problem, they tend to feel anxious, upset and worried, frightened.</p> <p>After they get to know that their child has crossed the <u>perimetre</u>, the parent identifies the child's location using this application and feel relieved.</p>		<p>8.2 OFFLINE</p> <p>What kind of actions do customers take offline?</p> <p>After tracking the child's activity, the customer goes to the specified location whenever the child crosses the <u>perimetre</u>.</p>

CHAPTER 4

REQUIREMENT ANALYSIS

4.1 FUNCTIONAL REQUIREMENT

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration through Form Registration through Gmail Registration through LinkedIn
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	Authentication	Only the authorized person for that product will know Ensures security
FR-4	User Interface	The Inventor Able to see the location of children when they are out of geofence will also track the exact information about the children
FR-5	Notification	Notified through mobile and mail

4.2 Non-functional Requirements:

Following are the non-functional requirements of the proposed solution.

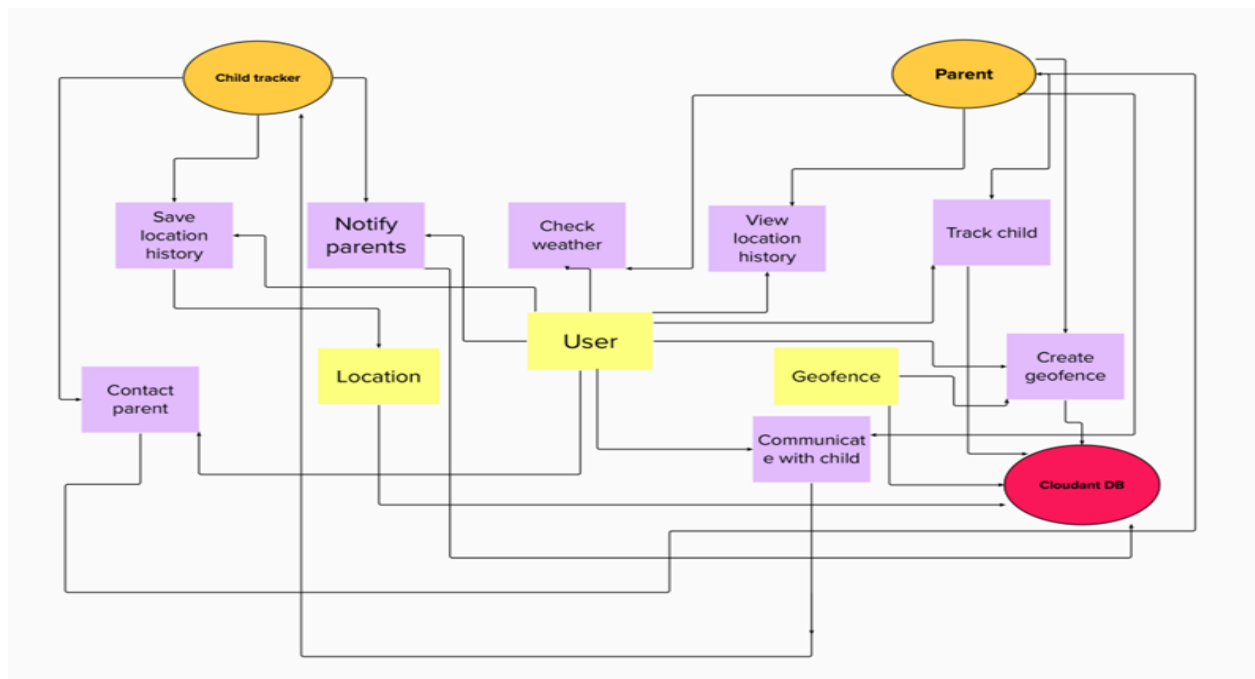
FR No.	Non-Functional Requirement	Description
NFR-1	Usability	Accessed through Mobile App Showing location (latitude and longitude) of child and also other measures to ensure safety like notification. Portable and comfortable to use.
NFR-2	Security	Database security and ensuring the safety of the product while in use.
NFR-3	Reliability	Once logged in, the webpage is available until logging out of the app, and a comfortable platform or creates a good environment for users to use.
NFR-4	Performance	Each page must load within 4 seconds and database needs to be updated every few seconds and a notification must be sent immediately if seen a change in the child's location.
NFR-5	Availability	The data must be available whenever needed and the product should be able to be used at any time.
NFR-6	Scalability	The process must be flexible to use at anytime and versatile.

CHAPTER 5

PROJECT DESIGN

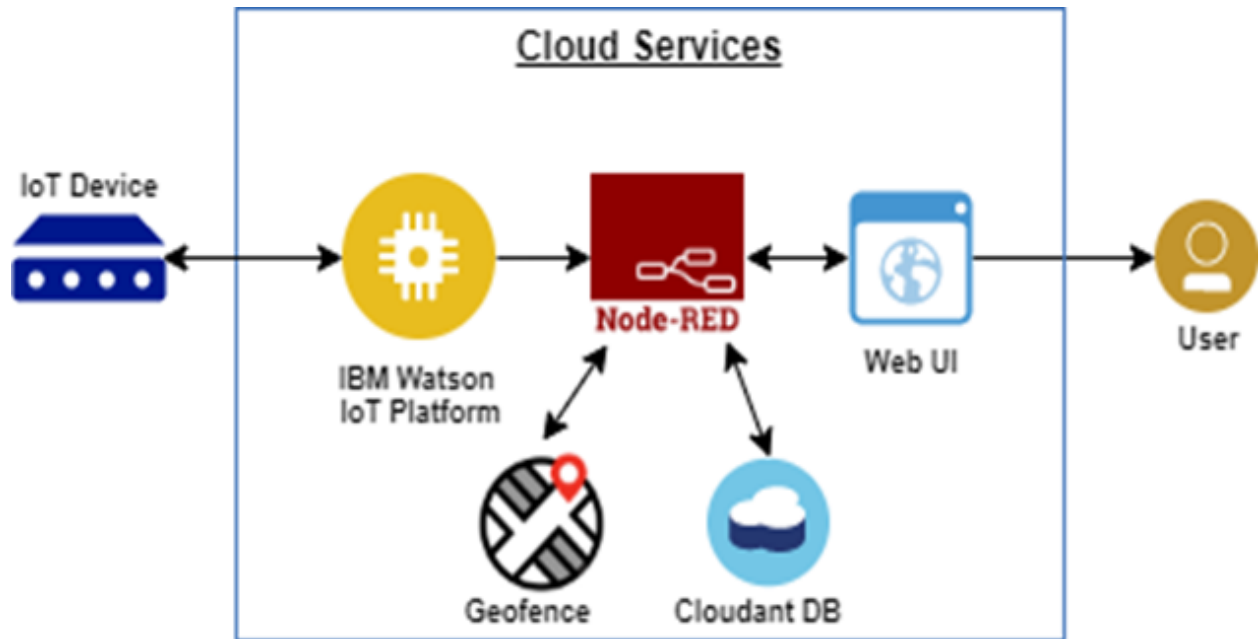
5.1 DATA FLOW DIAGRAMS

A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored



5.2 SOLUTION AND TECHNICAL ARCHITECTURE

TECHNOLOGY ARCHITECTURE



COMPONENTS & TECHNOLOGIES

S.No	Component	Description	Technology
1.	User Interface	The communication protocol being used in the proposed solution might act as an interface the way like Wi-Fi, Bluetooth and ZigBee	MIT app
2.	Application Logic	The data to be collected and sent to the authenticator's(parent) via GSM providing the GPS coordinates to easily locate access and monitor the child	IBM Watson STT service, python etc
3.	Database	Data to be segregated and secured in the form of relational DBMS	MySQL
4.	Cloud Database	IBM	IBM Cloudant
5.	File Storage	File storage requirements	IBM Block Storage or Other Storage Service or Local Filesystem

6.	External API-1	To access the children location	GPS location monitoring etc
7.	Infrastructure (Server / Cloud)	Application Deployment on Local System / Cloud Local Server Configuration	Cloud Foundry

APPLICATION CHARACTERISTICS

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	The proposed solution being framed in the form an android application providing the end user an easy surveillance of their children (preferably users are parents)	UI/UX design development
2.	Security Implementations	The developed application should be accessible in the way it can only respond to the comments of the relevant users	Encryptions, IAM Controls.
3.	Scalable Architecture	The app format makes it easier to handle and operate.	Not yet determined
4.	Availability	The developed solution tends to be available in the market at any time	Not yet determined
5.	Performance	Highly proper and betterment functionalities are to be ensured in the designed solution	Not yet determined

5.3 USER STORIES

Parent	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	I can access my account / dashboard	High	Sprint-1
		USN-2	As a user, I will receive confirmation email once I have registered for the application	I can receive confirmation email & click confirm	High	Sprint-1
		USN-3	As a user, I can register for the application through Gmail		Medium	Sprint-1
	Login	USN-4	As a user, I can log into the application by entering email & password		High	Sprint-1
	Dashboard	USN-5	As a user, I need to be able to view the functions that I can perform		High	Sprint-1
Child	Notification	USN-1	As a user, I should be able to notify my parent in emergency situations		High	Sprint-2
	Store data	USN-2	As a user, I need to continuously store my location data into the db.		Medium	Sprint-2
	Communication	USN-3	I should be able to communicate with my parents		Low	Sprint-3

CHAPTER 6

PROJECT PLANNING AND SCHEDULING

6.1 SPRINT PLANNING AND ESTIMATION

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1		US-1	Create the IBM Cloud services which are being used in this project.	6	High	Mega sundar A, Anand L , Ida hope P, Stanly Samuel M
Sprint-1		US-2	Configure the IBM Cloud services which are being used in completing this project.	4	Medium	Mega sundar A, Anand L , Ida hope P, Stanly Samuel M
Sprint-1		US-3	IBM Watson IoT platform acts as the mediator to connect the web application to IoT devices, so create the IBM Watson IoT platform.	5	Medium	Mega sundar A, Anand L , Ida hope P, Stanly Samuel M
Sprint-1		US-4	In order to connect the IoT device to the IBM cloud, create a device in the IBM Watson	5	High	Mega sundar A, Anand L , Ida hope P, Stanly

			IoT platform and get the device credentials.			Samuel M
Sprint-2		US-1	Configure the connection security and create API keys that are used in the Node-RED service for accessing the IBM IoT Platform.	10	High	Mega sundar A, Anand L , Ida hope P, Stanly Samuel M
Sprint-2		US-2	Create a Node-RED service.	10	High	Mega sundar A, Anand L , Ida hope P, Stanly Samuel M
Sprint-3		US-1	Develop a python script to create the geofence and publish the location of the child to the IBM IoT platform	7	High	Mega sundar A, Anand L , Ida hope P, Stanly Samuel M
Sprint-3		US-2	After developing python code, commands are received just print the statements which represents the location of the child	5	Medium	Mega sundar A, Anand L , Ida hope P, Stanly Samuel M

Sprint-3		US-3	Publish Data To The IBM Cloud	8	High	Mega sundar A, Anand L , Ida hope P, Stanly Samuel M
Sprint-4		US-1	Create Web UI in Node- Red	10	High	Mega sundar A, Anand L , Ida hope P, Stanly Samuel M
Sprint-4		US-2	Configure the Node-RED flow to receive data from the IBM IoT platform and also use Cloudant DB nodes to store the received location data in the cloudant DB	10	High	Mega sundar A, Anand L , Ida hope P, Stanly Samuel M

6.2 SPRINT DELIVERY SCHEDULE:

SPRINT DELIVERY PLAN

Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-1	20	6 Days	24 Oct 2022	29 Oct 2022	20	29 Oct 2022
Sprint-2	20	6 Days	31 Oct 2022	05 Nov 2022	20	05 Nov 2022
Sprint-3	20	6 Days	07 Nov 2022	12 Nov 2022	20	12 Nov 2022
Sprint-4	20	6 Days	14 Nov 2022	19 Nov 2022	20	19 Nov 2022

6.3 REPORTS FROM JIRA

CHAPTER 7

CODING AND SOLUTION

```
import json
import wiotp.sdk.device
import time

myConfig = {
    "identity": {
        "orgId": "jg090m",
        "typeId": "megas",
        "deviceId": "26022002"
    },
    "auth": {
        "token": "1911008abcdefgh"
    }
}
client = wiotp.sdk.device.DeviceClient(config=myConfig, logHandlers=None)
client.connect()

while True:
    name= "Child"
    #in area location

    #latitude=17.4225176
    #longitude=78.5458842

    #out area location

    latitude=17.4219272
    longitude=78.5488783
    myData={'name': name, 'lat': latitude, 'lon': longitude}
    client.publishEvent(eventId="status", msg    format="json", data=mydata,    qos=0,
onpublish=None)
    print("Data published to IBM IOT platform :",myData)
    time.sleep(5)

client.disconnect()
```

CHAPTER 8

TESTING

8.1 TEST CASES

Test case ID	Feature Type	Component	Test Scenario	Prerequisite	Steps To Execute	Test Data	Expected Result	Actual Result	Status	Comments	TC for Automation(Y/N)	BUG ID	Executed By
PythonCode_Workvi_TC_O1	Functional	Workvi	Verify the UV sensor is able to calculate the distance	User have to create UV sensor to calculate the distance of the child and send distance to the app	1. The device organization id is mentioned. 2.Enter the device ID and token 3.To publish the wifi to get connected with wifi	UV sensor	To calculate the distance in meter from the child	Working as expected	Pass	The program must be connected with device	yes	BUG-1234	
PythonCode_Workvi_TC_O2	Functional	Workvi	Verify is UV sensor is able to identify the monitoring object	User have to create UV sensor to calculate the distance of the child	1. The device organization id is mentioned. 2.Enter the device ID and token 3.To publish	UV sensor	To calculate the distance in meter from the child	Working as expected	Pass	The program must be connected with device	yes	BUG-1234	

				and send distan ce to the app	the wifi to get connecte d with wifi								
Nod e Red App _TC _OO 1	Func tiona l	F lo w E di to r	Verify the flow connecti on get response correctl y and share the informat ion with nodes exactly	User get the infor matio n from the geofe nce to get bound ry of the child to get alert signal to the mit app	1. The node are to be cinnecte d 2.In geofence node to get bounded map and get alerted from the bounded map 3.The map api pin get the msg and send to the mit app	Nodes connected with a flow	The geof ence node give s the boun ded map infor mati on. Whe n they get insid e and outsid e it notif y by the app	Wor king as exp ecte d	Pa ss	Geof ence is sho w the zone	yes	BUG -1234	
Nod e Red App _TC _OO 2	Func tiona l	F lo w E di to r	Verify the flow connecti on get response correctl y and share the informat ion with nodes exactly	User get the infor matio n from the geofe nce to get bound ry of	1. The node are to be cinnecte d 2.In geofence node to get bounded map and get alerted	Nodes connected with a flow	The geof ence node give s the boun ded map infor mati on. Whe	Wor king as exp ecte d	Pa ss	Geof ence is sho w the zone	yes	BUG -1234	

				the child to get alert signal to the mit app	from the bounded map 3.The map api pin get the msg and send to the mit app		n they get inside and outside it notify by the app						
Clou dant Db	Func tional	D at a b a s e	Verify the flow connecti on get response correctl y and share the informat ion with nodes exactly	User get the infor mation from the geofe nce to get bound ry of the child to get alert signal to the mit app	1. The node are to be cinnected 2.In geofence node to get bounded map and get alerted from the bounded map 3.The map api pin get the msg and send to the mit app	Nodes connected with a flow	The geof ence node give s the bound ed map infor mati on. Whe n they get insid e and outsi de it notif y by the app	Wor king as exp ecte d	Pa ss	The clou dant Db store the mess age	yes	BUG -1234	

8.2 USER ACCEPTANCE

Today 6:01 pm SIM1 1

Sent from your Twilio trial account
- Alert: Your child is outside
the geofence. [https://node](https://node-red-lspwr-2022-11-17.eu-gb.mybluemix.net/worldmap/)
[-red-lspwr-2022-11-17.eu-gb](https://node-red-lspwr-2022-11-17.eu-gb.mybluemix.net/worldmap/)
[.mybluemix.net/worldmap/](https://node-red-lspwr-2022-11-17.eu-gb.mybluemix.net/worldmap/)

CHAPTER 9

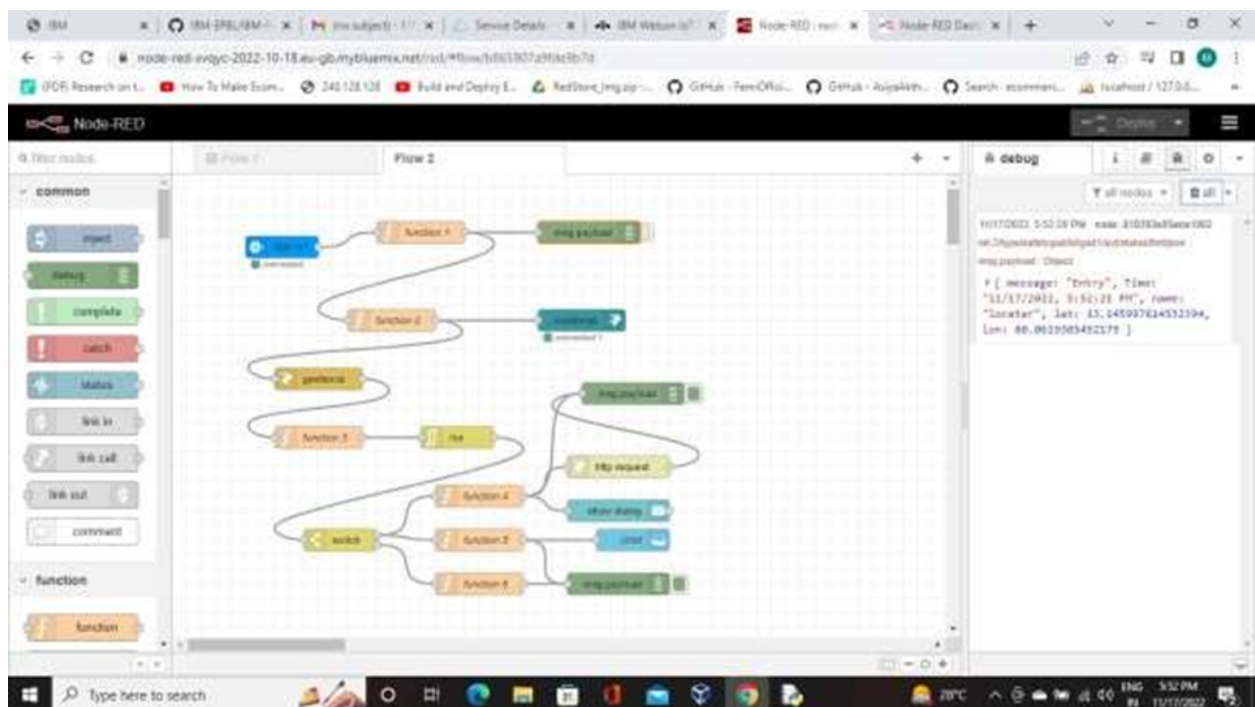
RESULTS

9.1 PERFORMANCE MATRIX

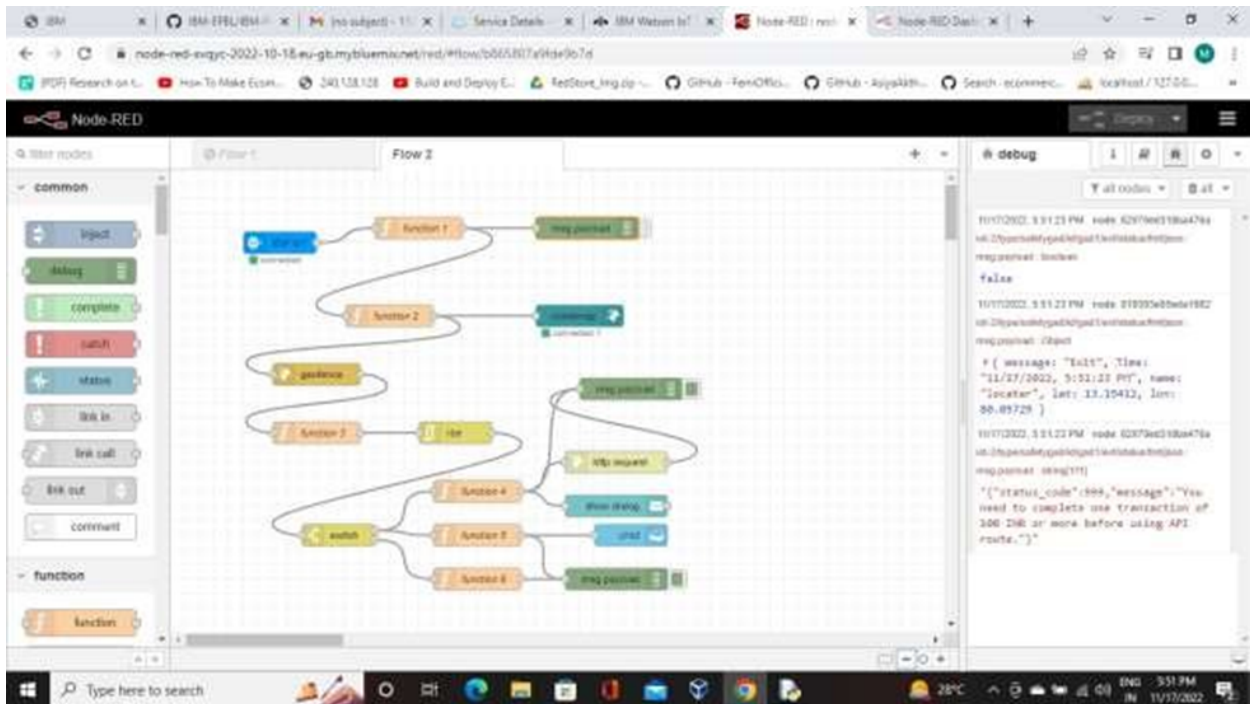
Fast updation of child's location

- User Friendly interface
- Low data involvement

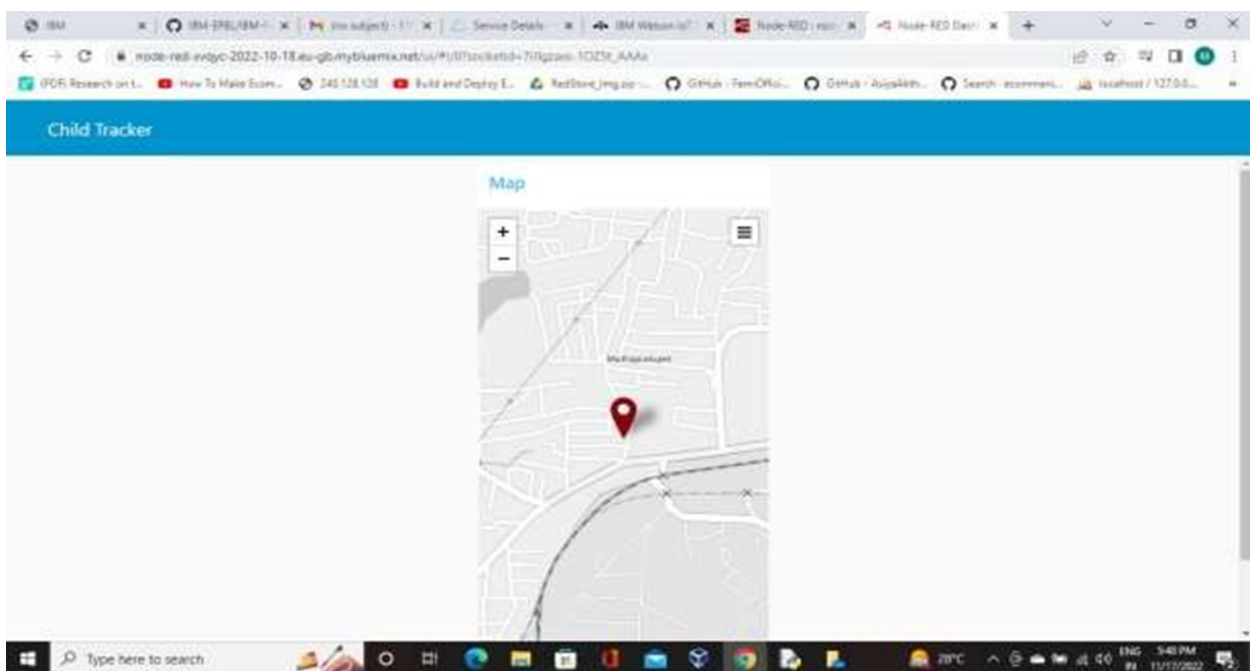
Node-Red Service IN Area:



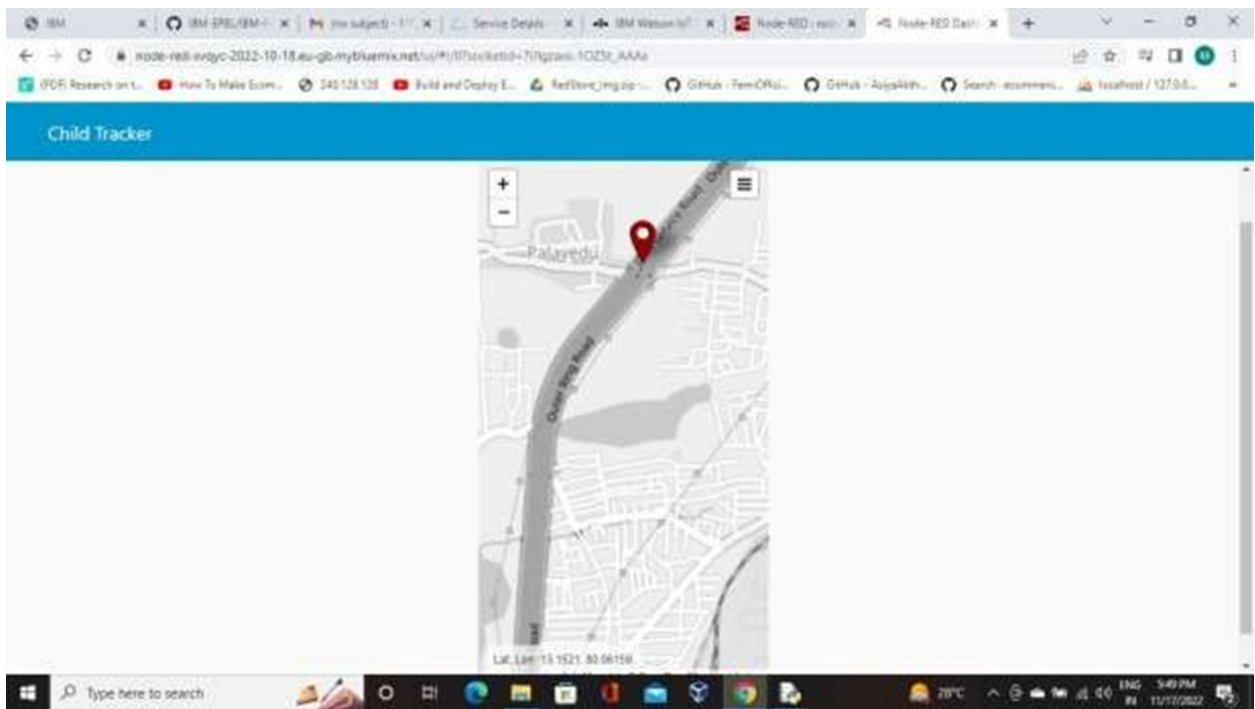
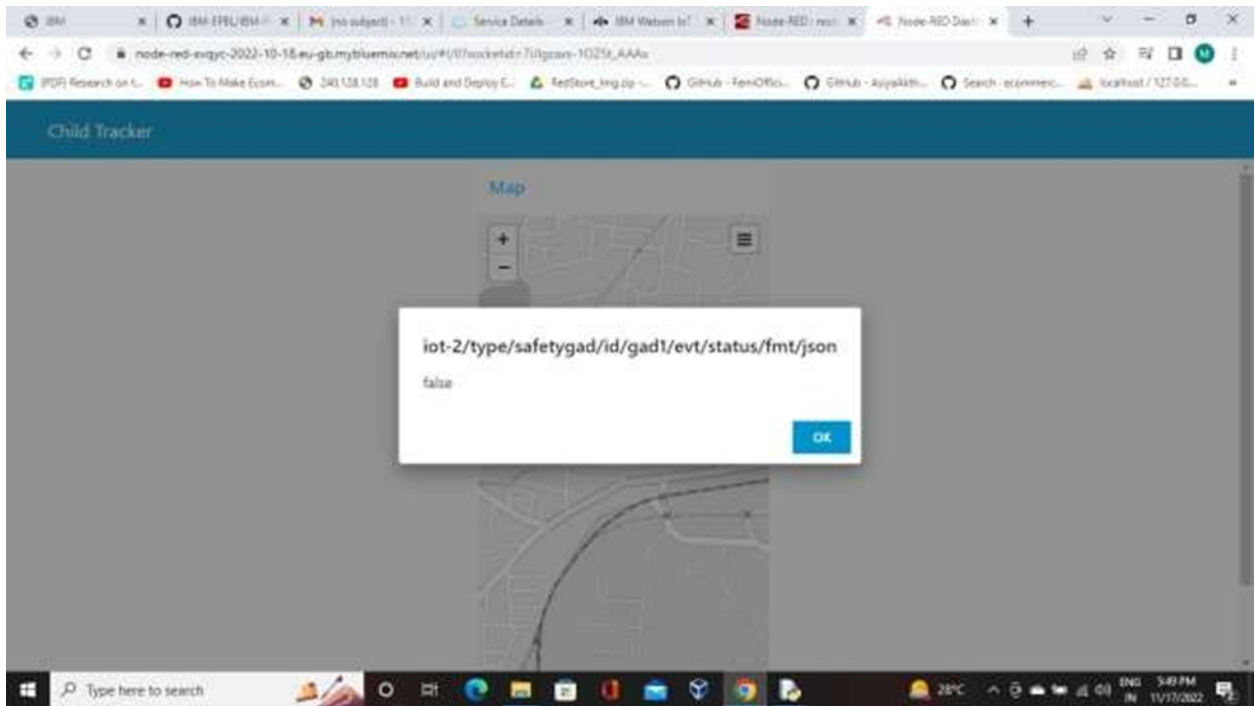
Node-Red Service OUT Area:



Node-Red Dashboard(Web UI): In Area



OUT Area



CHAPTER 10

ADVANTAGE AND DISADVANTAGES

Advantages	Disadvantages
Minimizes the human work and effort	Increased privacy concerns
Saves time and effort	Increased unemployment rates
Good for personal safety and security	Highly dependent on the internet
Useful in traffic and other tracking or monitoring systems	Lack of mental and physical activity by humans leading to health issues.
Beneficial for the healthcare industry	Complex system for maintenance
Improved security in homes and offices	Lack of security
Reduced use of many electronic devices as one device does the job of a lot of other devices	Absence of international standards for better communication

CHAPTER 11

CONCLUSION

In our project we implemented an IoT based gadget for child safety monitoring and notification. It clearly explained the IoT concept, child safety issues and the need of using child security systems. Some previous studies have been included for designing the IoT-based child security smart band. It assists parents to monitor their children remotely. In case situations happen, notifications will be sent to parents so that actions can be taken. Through this, child safety can be ensured and crime rate will be reduced. However, the proposed device is not robust enough and does not contain sufficient functions to operate like a Atlantis Highlights in Computer Sciences, volume 4 470 mobile phone. Hence, the future enchantments will be adding more features, software, applications, hardware to make the proposed system capable of working more intelligently, meanwhile guarantee the safety of children

CHAPTER 12

FUTURE SCOPE

In our system, we automatically monitor the child in real time using Internet of Things, with the help of GPS, GSM, and Raspberry Pi. This system requires network connectivity, satellite communication, and high-speed data connection when we use a web camera and GPS to monitor. It is difficult to monitor when there occurs any hindrance to satellite communication or any network issue. There also occurs time delays in video streaming through the server. Hence in the future, these issues can be overcome by using the Zigbee concept or accessing the system without the internet and using high-speed server transmission.

CHAPTER 13

APPENDIX

SOURCE CODE

GITHUB & PROJECT DEMO LINK

GitHub Link:-

<https://github.com/IBM-EPBL/IBM-Project-26806-1660038243>