

# **PROFESSIONAL READINESS FOR INNOVATION, EMPLOYABILITY AND ENTREPRENEURSHIP**

**Project Title: IOT Based Safety Gadget for Child Safety  
Monitoring and Notification**

**Team ID :** PNT2022TMID33855

**College :** Government College of Engineering, Tirunelveli

**Branch:** Electronics and Communication Engineering

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# Project Report

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# **1.INTRODUCTION**

## **Project Overview:**

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.

## **LITERATURE SURVEY :**

### **1.)Intelligent Child Safety System using Machine Learning in IoT Devices:**

-Aparajith Srinivasan, S Abirami, N Divya, R Akshya, BS Sreeja 2020 5th International Conference on Computing, Communication and Security (ICCCS), 1-6,2020

### **2.)Smart School Bus Tracking:**

Requirements and Design of an IoT based School Bus Tracking System:

-Hina Gull, Dalal Aljohar, Reem Alutaibi, Dalia Alqahtani, Muna Alarfaj, Rahaf Alqahtani 2021 5th International Conference on Trends in Electronics and Informatics (ICOEI), 388-394, 2021

**3.)IoT-Based Smart Band For Tracking Position And Monitoring Conditions Of Children:**

-Lathifah Arief, Taufik Fadhlul Hadi, Tri A Sundara 2020 International Conference on Information Technology Systems and Innovation (ICITSI) ,111-115, 2020

**4.)Child monitoring and safety system using WSN and IoT technology:**

-P Poonkuzhlai, R Aarthi, Yaazhini VM Annals of the Romanian Society for Cell Biology, 10839-10847, 2021

**5.)Smart and secure IoT based child monitoring system:**

-Dipali Badgujar, Neha Sawant, Dnyaneshwar Kundande Int Res J Eng Technol (IRJET) 6 (11), 2019

**6.)Multi-sensor Wearable for Child Safety:**

-Ushashi Chowdhury, Pranjal Chowdhury, Sourav Paul, Anwesha Sen, Partho Protim Sarkar, Shubhankur Basak, Abari Bhattacharya 2019 IEEE 10th Annual Ubiquitous Computing, Electronics & Mobile Communication Conference (UEMCON), 0968-0972, 2019

**7.)Design and implementation of a children safety system based on IoT technologies:**

-Leonardo D'Errico, Fabio Franchi, Fabio Graziosi, Claudia Rinaldi,  
Francesco Tarquini 2017 2nd International Multidisciplinary Conference on Computer and  
Energy Science (SpliTech), 1-6, 2017

**8.)A hybrid model on child security and activities monitoring system using iot:**

-R Kamalraj, M Sakthivel 2018 International Conference on Inventive  
Research in Computing Applications (ICIRCA), 996-999, 2018.

**9.)IoT Enabled Children Safety System:**

-Mr Vinod Mane, Durgesh Musale, Rohan Joshi, Aditya Toney, Anand  
Pand

**10.)IoT Based Shrewd Monitoring Framework for Children Safety:**

-KP Revathi, T Manikandan ECS transactions(107)1,13967,2022

**11.)IoT based Child Safety Management using Raspberry Pi and RFID Technology:**

-Mohammad Jabirullah, M Amru, D Raviteja IOP Conference Series:  
Materials Science and Engineering 981 (4), 042079, 2020

**12.)IoT Based Child Safety Locator From Water and Fire:**

-Md Rony, Minhajul Islam, Sanjida Khanam, Sagar Gosh  
  
Daffodil International University, 2021

## **Existing problem:**

Now-a-days violence against children is widespread and remains a harsh reality for millions of children from all socio-economic groups in India. Therefore in order to overcome such problem we are introducing IOT based Safety Gadgets for Child Safety Monitoring system

## **References:**

Through youtube and other websites and articles like Child Monitoring and Safety System Using Wsn and IOT Technology .

## **Problem Statement Definition :**

- Child's safety project aims at providing a safe and conducive environment for all children through the prevention and response to child abuse, exploitation and neglect.
- Additional features such as sending group messages, audio recording are also part of the proposed design. A mobile app is designed for women safety where safe location from the victim's current location will be shown on the map so that woman can reach the safe place from her current location.
- The main purpose of this app is to provide a safe platform through android phones as today all people are taking smartphones to travel here and there.

## **PROBLEM STATEMENT**

Child's safety project aims at providing a safe and conducive environment for all children through the prevention and response to child abuse, exploitation and neglect.

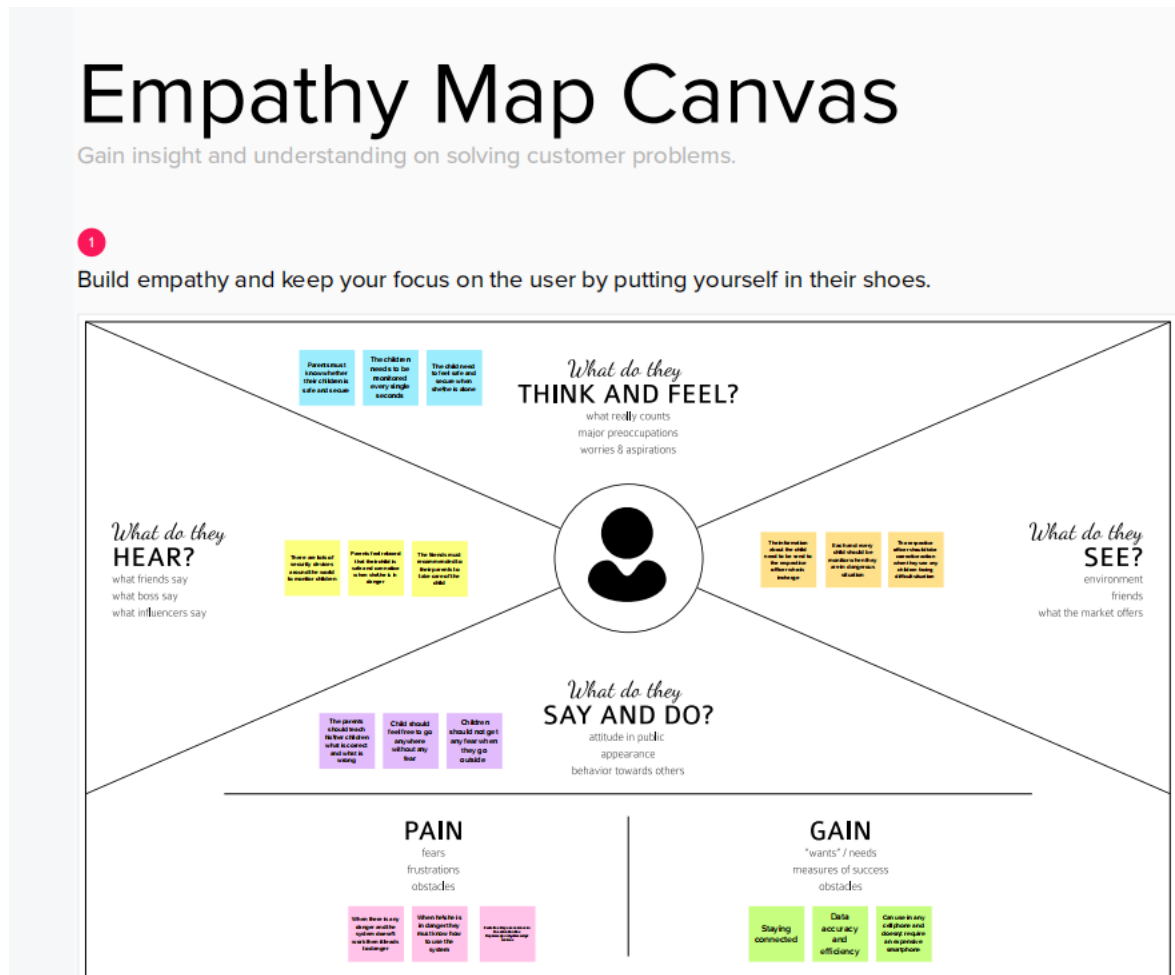
Who does the problem affect?	Childrens are mostly affected.
What are the boundaries of the problem?	Boundaries are guidelines that you create for yourself, to manage your actions and interactions with other people.
What is the issue?	Most States recognize four major types of maltreatment: physical abuse, neglect, sexual abuse, and emotional abuse.
When does the issue occurs?	Child abuse happens when someone caring for a child hurts a child's feelings or body. It can happen to boys or girls in any family. Often, hurt feelings (or emotional trauma) last long after a hurt body has healed.
Where is the issue occurring?	Child abuse and adult abuse can happen anywhere, including in your own home by someone you trust. Perpetrators tend to look for circumstances where they may be able to abuse their target without getting caught – or where they have access to a high number of people that they can abuse.
Why is it important that we fix the problem?	The healthy development of children is crucial to the future well-being of any society. Because they are still developing, children are especially vulnerable – more so than adults – to poor living conditions

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	such as poverty, inadequate health care, nutrition, safe water, housing and environmental pollution.
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## IDEATION & PROPOSED SOLUTION:

### Empathy Map Canvas:





### Brainstorm & idea prioritization

Use this template in your own brainstorming sessions so your team can visualize their thoughts and start shaping concepts even if you're not staying in the same room.

- 1. Welcome to your session
- 2. Define your problem & desired
- 3. Brainstorm
- 4. Group ideas
- 5. Evaluate ideas
- 6. Prioritize ideas

### Group ideas

Use this template to group your ideas into categories and sub-categories. This is a great way to organize your ideas and see what you have in common.

- 1. Welcome to your session
- 2. Define your problem & desired
- 3. Brainstorm
- 4. Group ideas
- 5. Evaluate ideas
- 6. Prioritize ideas

### Evaluate ideas

Use this template to evaluate your ideas. This is a great way to see what you have in common and what you don't. This is a great way to see what you have in common and what you don't.

- 1. Welcome to your session
- 2. Define your problem & desired
- 3. Brainstorm
- 4. Group ideas
- 5. Evaluate ideas
- 6. Prioritize ideas

### Prioritize ideas

Use this template to prioritize your ideas. This is a great way to see what you have in common and what you don't. This is a great way to see what you have in common and what you don't.

- 1. Welcome to your session
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- 3. Brainstorm
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## Proposed Solution:

### Proposed Solution Template:

Project team shall fill the following information in the proposed solution template.

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	We need to solve problem for children who are subjected to female infanticide, feticide, sexual abuse and exploitation, prostitution, rape.
2.	Idea / Solution description	We propose a solution which will try to overcome the disadvantages of the existing systems and also aim at providing false proof safety to women. The proposed work aims at designing an IoT based safety device that relies on providing security to women.
3.	Novelty / Uniqueness	Additional features such as sending group messages, audio recording are also part of the proposed design. A mobile app is designed for women safety where safe locations from the victim's current location will be shown on the map so that women can reach the safe place from her current location.
4.	Social Impact / Customer Satisfaction	The main purpose of this app is to provide a safe platform through Android phones as today all people are taking smartphones to travel here and there.
5.	Business Model (Revenue Model)	IoT service providers will use their own IoT business models, architectures, and operating platforms.
6.	Scalability of the Solution	IoT scalability refers to the ability to go from prototype to production in a seamless way.

## Problem Solution fit:

Project Title:-IOT Based Safety Gadget for Child Safety Monitoring and Notification		Project Design Phase-I - Solution Fit Template		Team ID: PNT2022TMID33855	
Define CS, fit into CC	<b>1. CUSTOMER SEGMENT(S)</b> Who is your customer? i.e. working parent of 0-5 yrs. kids	<b>6. CUSTOMER CONSTRAINTS</b> What constraints prevent your customers from taking action or limit their choices of solutions? i.e. spending power, budget, security, network connectivity, available device.	<b>5. AVAILABLE SOLUTIONS</b> Which solutions are available to the customer 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 monitoring	Explore AS, differentiate	
	Parents who wants to monitor their children 24/7	Some inconvenient in monitoring the device	If there is danger for the child alert message will popup in parents mobile.		
Focus on JAP, map into	<b>2. JOBS-TO-BE-DONE / PROBLEMS</b> Which problem do you solve for your customer? There could be more than one, explore different sides eg. existing solar solutions for private houses are not considered a good investment (1).	<b>9. PROBLEM ROOT CAUSE</b> 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.	<b>7. BEHAVIOUR</b> What does your customer do to address the problem and get the job done?	Focus on JAP, map into	
	Always locate the children lively.	Lack of network efficiency will restrict location tracking	When location of the child is unable to detect parents will contact the security services.		
	<b>3. TRIGGERS</b> What triggers customers to act? i.e. seeing their neighbour installing solar panels, reading about a more efficient solution in the news.	<b>10. YOUR SOLUTION</b> If you are working on an existing business, write down your current solution first, fill in the canvas, and check how much it fits reality. To show live location of child anytime in parents mobile.	<b>8. CHANNELS of BEHAVIOUR</b> <b>CH</b> 8.1 ONLINE 8.2 OFFLINE <b>ONLINE</b> Parents will access the security service		
	When their mobile is not capable to connect the IOT device				
	<b>4. EMOTIONS: BEFORE / AFTER</b> How do customers feel when they face a problem or a job and afterwards? Insecurity of disconnection --> Control of device makes them confident	To alert parents when child go across the geofence.	in online mode(Web Service)  <b>OFFLINE</b> Parents will access the security service in offline mode(call using telephone )		

## REQUIREMENT ANALYSIS:

### Functional requirement:

#### Functional Requirements:

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration and User Confirmation	<ul style="list-style-type: none"><li>● Registration through Gmail</li><li>● Registration through phone number</li><li>● Confirmation via Email</li><li>● Confirmation via OTP</li></ul>
FR-2	App installation and Detecting Child location	<ul style="list-style-type: none"><li>● Installation through link</li><li>● Installation through play store</li><li>● Detecting location via app</li><li>● Detecting location via SMS</li></ul>
FR-3	Database	<ul style="list-style-type: none"><li>● Stored in cloud for seamless connectivity.</li><li>● Parents and kids link with the distance and the location values obtained from the mobile devices are stored here.</li><li>● The values include parent id, kid id, distance, longitude, latitude etc.</li></ul>
FR-4	Server	<ul style="list-style-type: none"><li>● It connects the database and the front end application.</li><li>● The backend server has been implemented to run as a service and is deployed in an IBM cloud instance.</li><li>● The backend server has been implemented to run as a service and is deployed in an IBM cloud instance.</li></ul>
FR-5	Battery Life	<ul style="list-style-type: none"><li>● If the child or parent forgets to charge the device for a whole day then also the device will work. That's why we aim to make this device last the whole day with one charge.</li><li>● It should be long-lasting.</li></ul>
FR-6	Location History	<ul style="list-style-type: none"><li>● location history will help to track the child's activity so that the aren't will be updated. Location history will be there for 30 days.</li><li>● For example if the child gets missing with the help of location history the aren't can track down their child's activity and also can find their child.</li></ul>

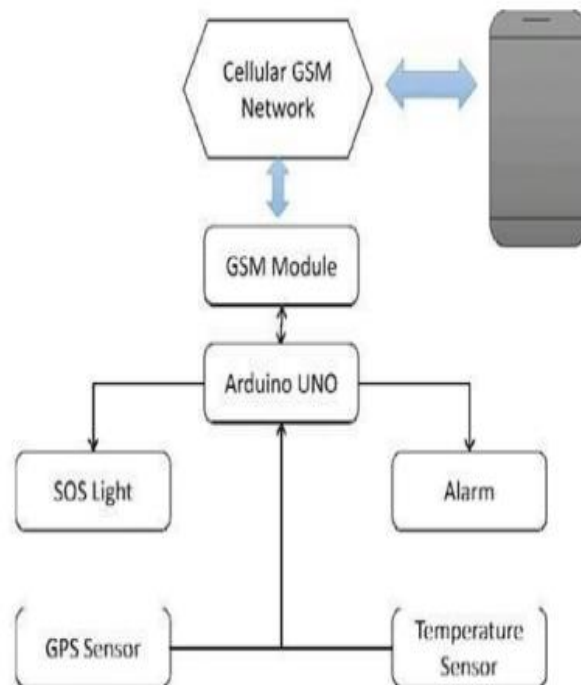
### Non-functional Requirements:

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

FR No.	Non-Functional Requirement	Description
NFR-1	<b>Usability</b>	Device have GSM can help to inform the parents or relatives about the current situations of the child by deliver the message immediately to save the child.
NFR-2	<b>Security</b>	<ul style="list-style-type: none"><li>● Make children parents more assure about their kid's security, we have a feature in our device called Geo-Fence.</li><li>● Whenever your child crosses that specific area, you will get an instant notification on your phone.</li></ul>
NFR-3	<b>Reliability</b>	<ul style="list-style-type: none"><li>● Portable</li><li>● Easy to use</li><li>● Flexibility</li></ul>
NFR-4	<b>Performance</b>	<ul style="list-style-type: none"><li>● Create a Child tracker which helps the parents with continuously monitoring the child's location.</li><li>● The notification will be sent according to the</li><li>● Child's location to their parents or caretakers.</li><li>● The entire location data will be stored in the database.</li></ul>
NFR-5	<b>Availability</b>	<ul style="list-style-type: none"><li>● Track your child even in a crowd</li><li>● Get travel details of kids at any time</li></ul> Know the current location
NFR-6	<b>Scalability</b>	<ul style="list-style-type: none"><li>● Gadget ensures the safety and tracking of the children.</li><li>● Parents need not worry about their children.</li></ul>

## Project Design Phase-II Technology Architecture

Date	16 October 2022
Team ID	PNT2022TMID33855
Team Leader	R.Kowsiga
Team Member	P.Madhumitha M.Niffa meriya B.E.Dharani
Project Name	IoT based safety gadget Child Safety Monitoring and Notification

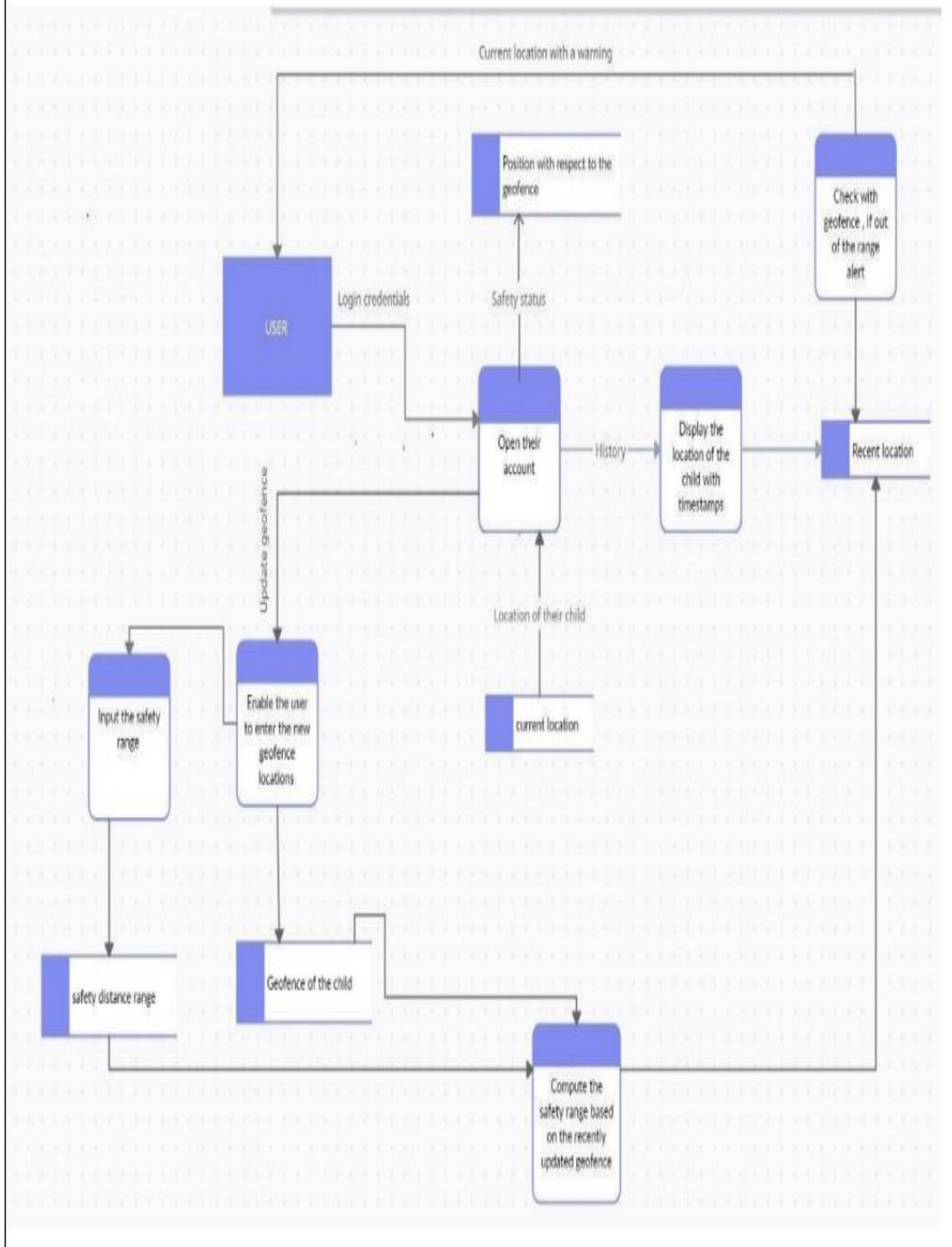


## Data Flow Diagrams:

### USER STORIES

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer (Mobile user) and (Web user)	Registration	USN-1	As a user, I can register my account 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 a confirmation email once I have registered myself.	I can receive confirmation email & click confirm.	High	Sprint-1
		USN-3	As a user, I can register for the application through an apple account.	I can register & access the dashboard with apple account Login.	High	Sprint-2
	Login	USN-4	As a user, I can log into the application by entering user id & password.		High	Sprint-1
Customer Care Executive	Login		As I enter I can view the working of the application and scan for any glitches and monitor the operation and check if all the users are authorized.	I can login only with my provided credentials	Medium	Sprint - 3
Administrator	Login		Maintaining and making sure the database containing the locations are secure and accurate and updated constantly.	I can login only with my provided credentials	High	Sprint - 3

# DATA FLOW DIAGRAM

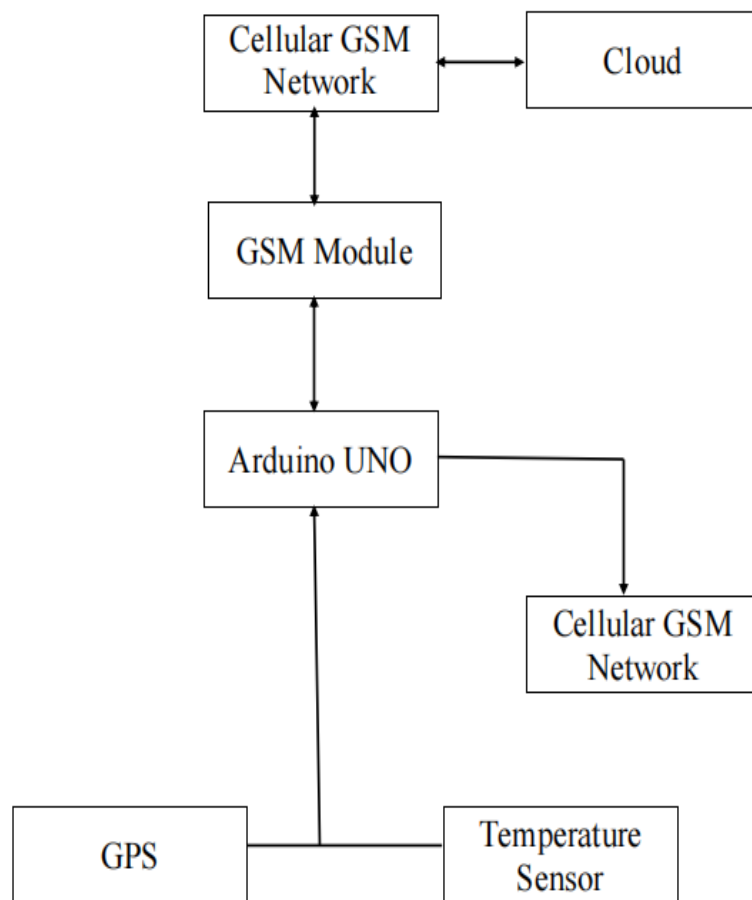




## Solution & Technical Architecture:

### Project Design Phase-1


#### Solution Architecture





# User Stories:


User journey



by the Design Team of Accusmart Interactive NL

People  
2-8

Time  
30 min

Difficulty  
Beginner

Creating a user journey is a quick way to help you and your team gain a deeper understanding of who you're designing for, aka the stakeholder in your project. The information you add here should be representative of the observations and research you've done about your users. 

<div><div>1 Phases</div><div>Highlevel steps your user needs to accomplish from start to finish</div></div>	INSTALLATION PHASE	TRACKING PHASE	MONITORING PHASE	NOTIFICATION PHASE
<div><div>2 Steps</div><div>Detailed actions your user has to perform</div></div>	Start the device	Enable the GPS/Bluetooth	To Check Health condition	Check the Notification
<div><div>3 Feelings</div><div>What your user might be thinking and feeling at the moment</div></div> <div><div>If this possible or not</div><div>Good for health or not</div></div>	If this possible or not	Is this possible in all areas	Monitor is possible in all time	Is this receive a notification at any time
		Not supported in urban areas	Is this possible in large distance	Does not receive a notification during a driver is off condition
<div><div>4 Pain points</div><div>Problems your user runs into</div></div>	High cost of installation	Affect the health	Traffic is difficult when the GPS is improper	Delay of receiving notification
<div><div>5 Opportunities</div><div>Potential improvements or enhancements to the experience</div></div>	Giving guidelines to follow	Provide faith by showing demo	Anytime anywhere	Should be noticed frequently

Accusmart

## PROJECT PLANNING & SCHEDULING:

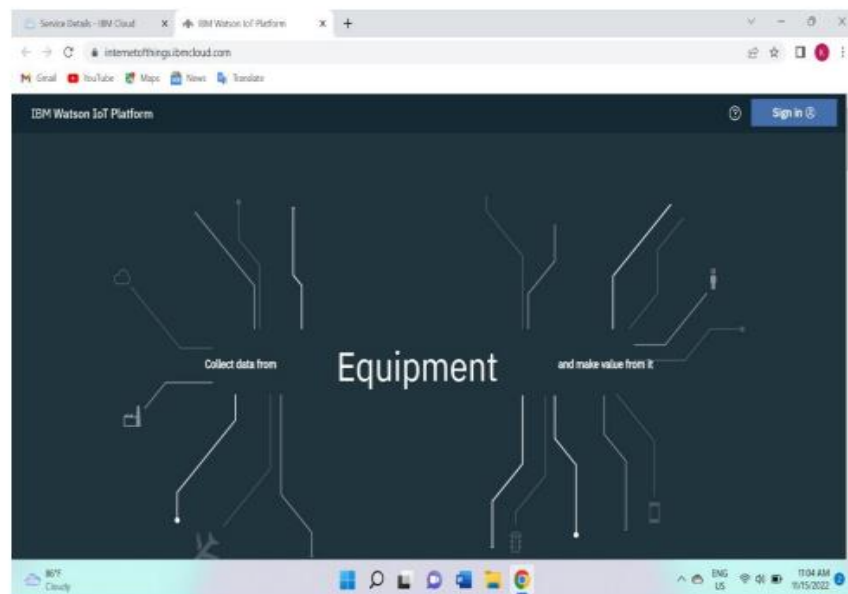
### Project Development –Delivery plan sprint-1

#### IoT Based Safety Gadget for Child Safety Monitoring & Notification

**TEAM ID:** PNT2022TMID33855

**Creating and Connecting IBM cloud for Project and Python Code**

**Creating IBM Cloud Service and creating the device:**



Service Details - IBM Cloud x IBM Watson IoT Platform x

1e5zwd.internetofthings.ibmcloud.com/dashboard/devices/browse

Gmail YouTube Maps News Translate New folder Node-RED: node-... Node-RED: node-... Service Details - BL IBM Watson IoT Pla... IBM Cloud

### IBM Watson IoT Platform

950819106030@smartinternz.com  
Itz.1e5zwd

Browse Action Device Types Interfaces **Add Device**

Device ID Status Device Type Class ID Date Added Descriptive Location Added By

12345	Disconnected	Testdevicetype	Device	Nov 15, 2022 11:24 AM		950819106030@smartinternz.com	...
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Identity Device Information Recent Events State Logs X

Device ID: 12345

Device Type: Testdevicetype

Date Added: Nov 15, 2022 11:24 AM

Added By: 950819106030@smartinternz.com

Connection Status: **Disconnected**

Last Connected: Nov 16, 2022 1:31 AM

Client Address: 223.182.225.127 SecureToken

Duration: a few seconds

Data Transferred: 159 B

Items per page: 50 1 of 1 page 1 of 1 item

17°F Hazy 7:33 PM 11/18/2022

## Creating Python Code:

```
import json
import wiotp.sdk.device
import time
import random
myConfig = {
    "identity": {
        "orgId": "4o1qxb",
        "typeId": "TestDeviceType",
        "deviceId": "12345"
    },
    "auth": {
        "token": "pnhXvzN-sWMKv&hxyi"
    }
}
client = wiotp.sdk.device.DeviceClient(config=myConfig, logHandlers=None)
client.connect()

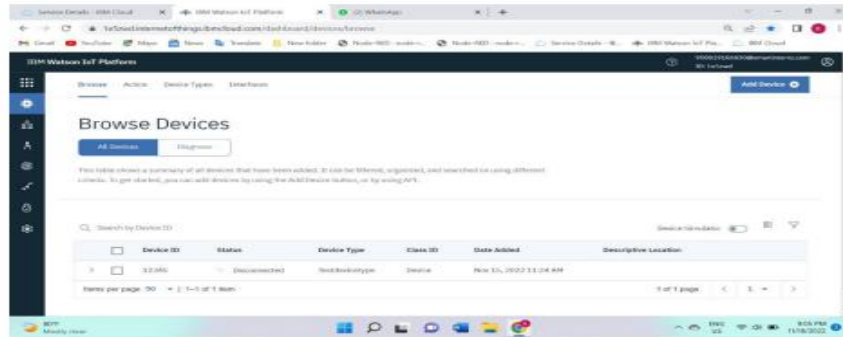
while True:
    name= "Smartbridge"
    #in area location

    latitude= 17.4225176
    longitude= 78.5458842

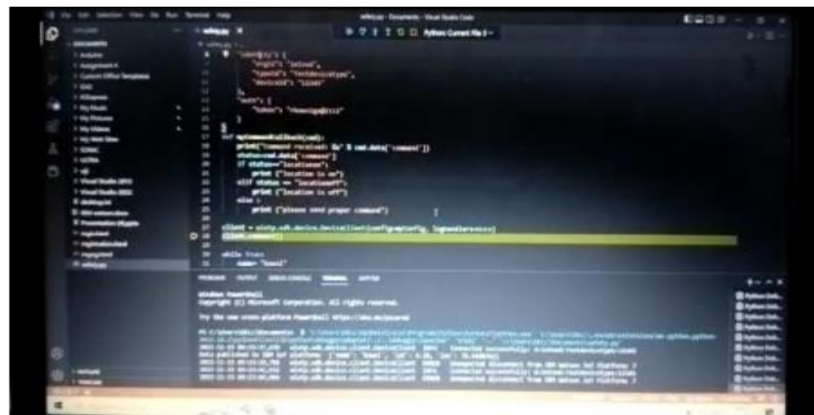
    #out area location

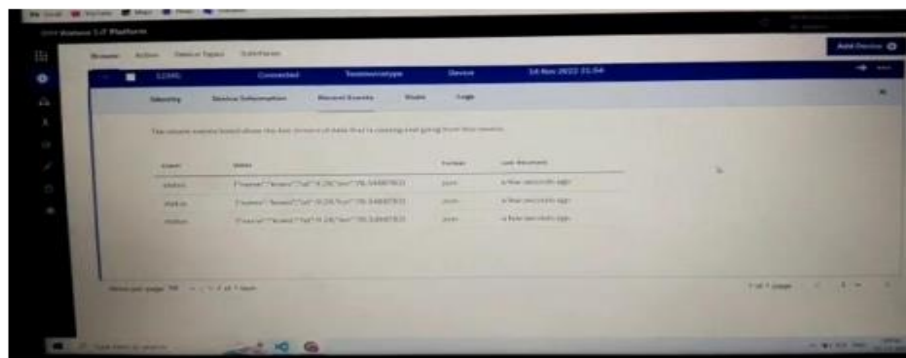
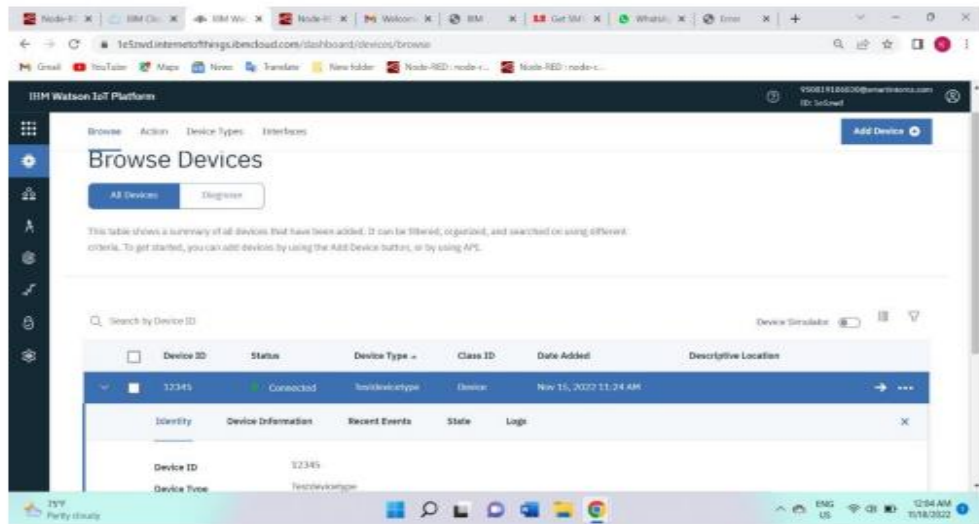
    #latitude= 17.4219272
    #longitude= 78.5488783
    myData={'name': name,'lat':latitude, 'lon' :longitude}
    client.publishEvent(eventId="status", msgFormat="json", data=myData,
qos=0, onPublish=None)
    print("Data Published to IBM IoT platfrom: ", myData)
    time.sleep(5)

client.disconnect()
```



## Connecting IBM Watson and python Code:





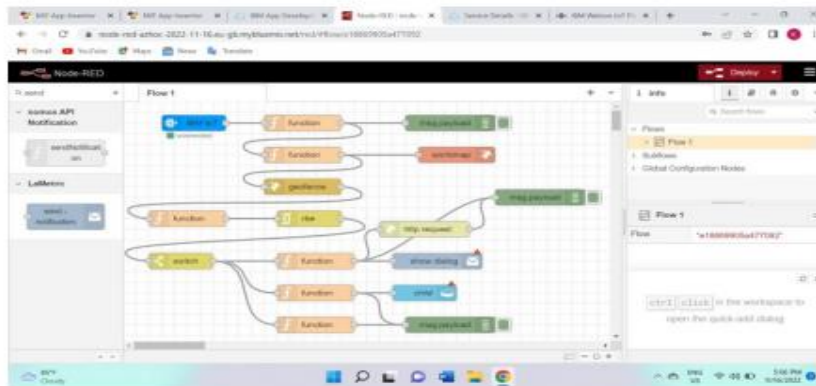
## Project Development - Delivery plan sprint-2

IOT Based Safety Gadget for Child Safety Monitoring & Notification

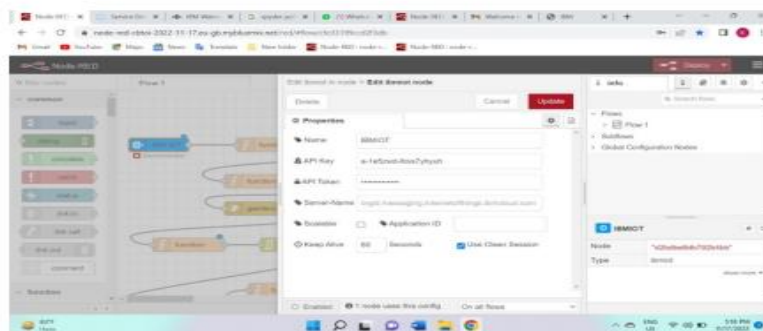
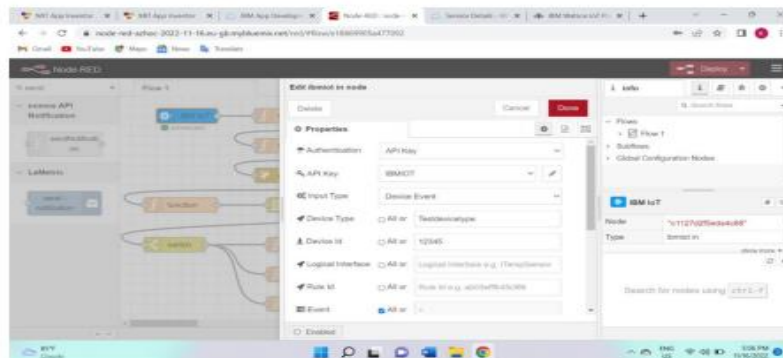
TEAM ID : PNT2022TMID33855

Creating Node - Red service and connecting with IBM cloud

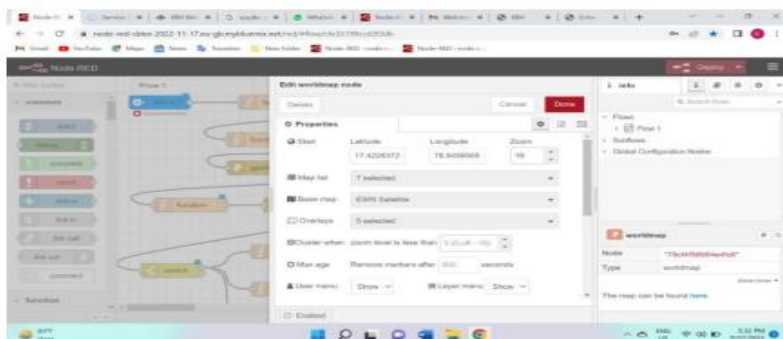
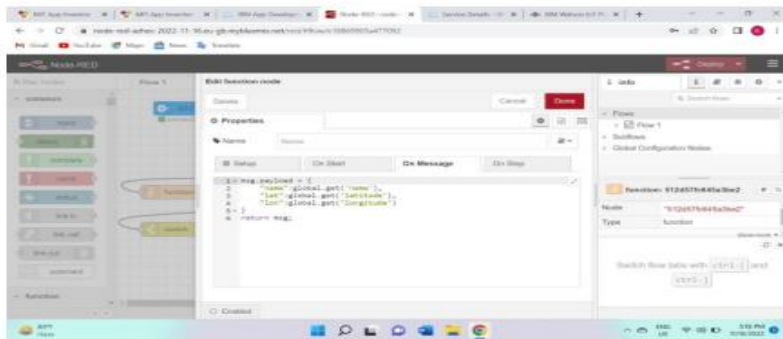
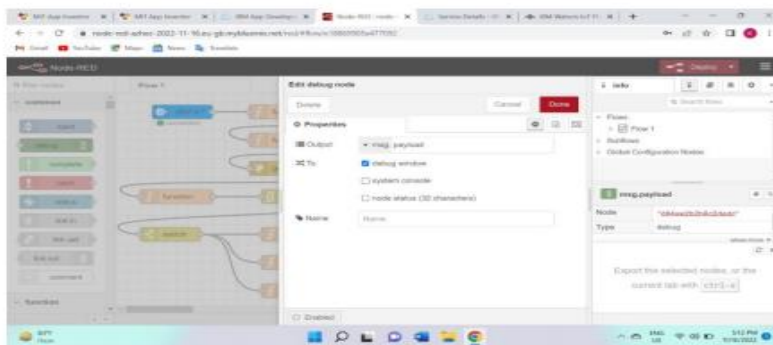
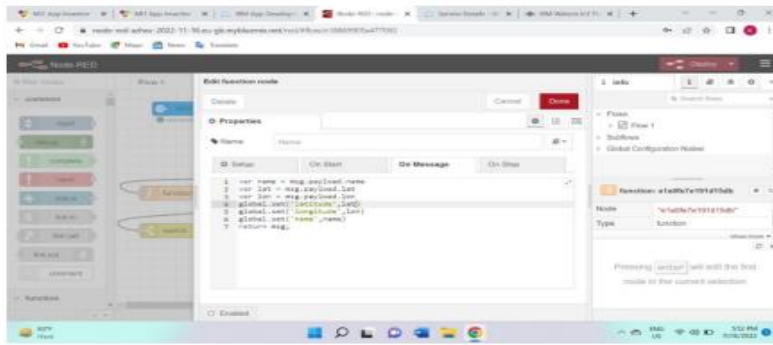
Creating Node-Red service:

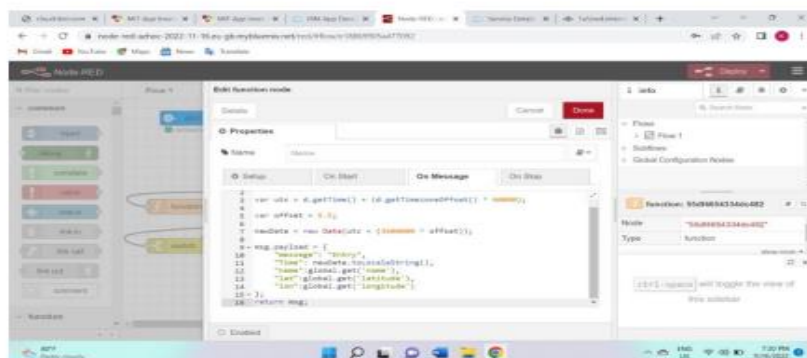
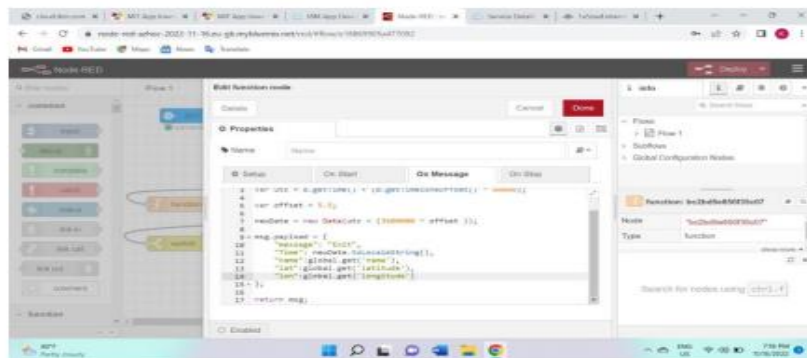
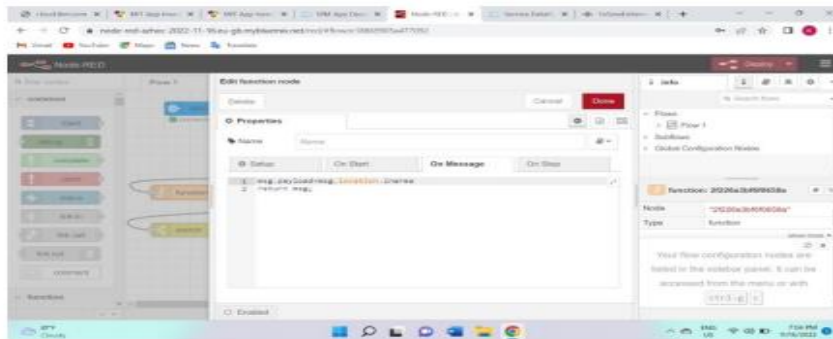
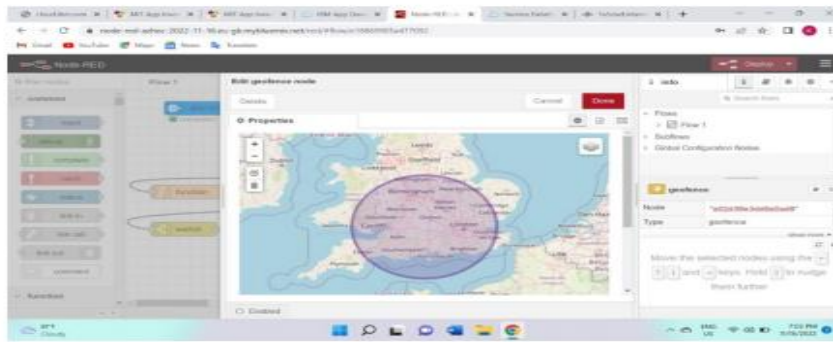


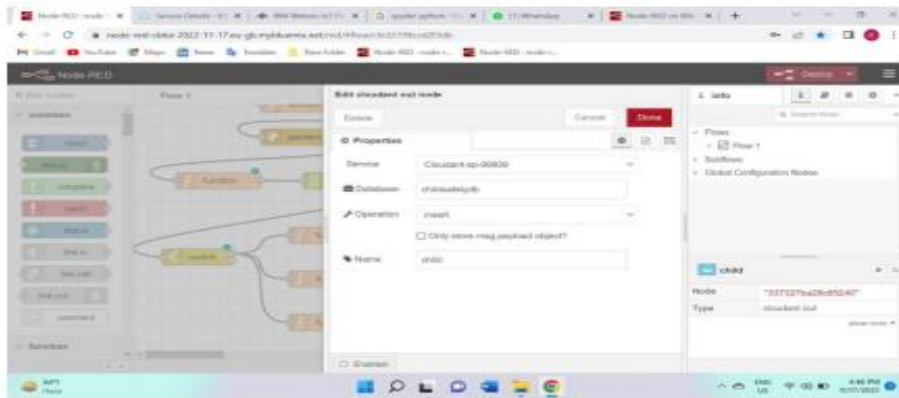
Codes in each Node :



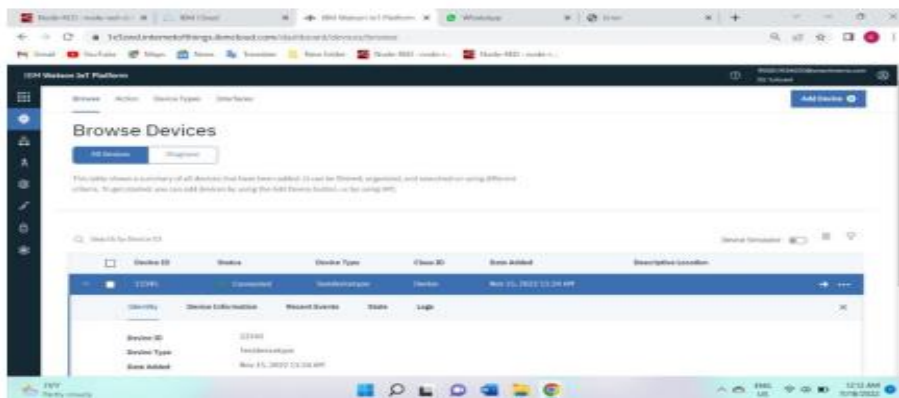








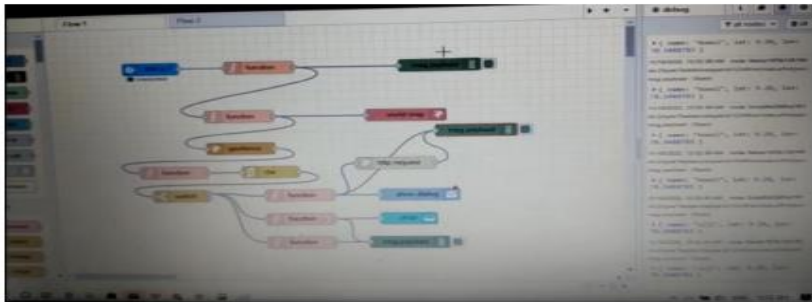
## Connecting with IBM IOT node through the API key



## Transferring values from Python Code:



## Node-Red



## Sprint Planning & Estimation

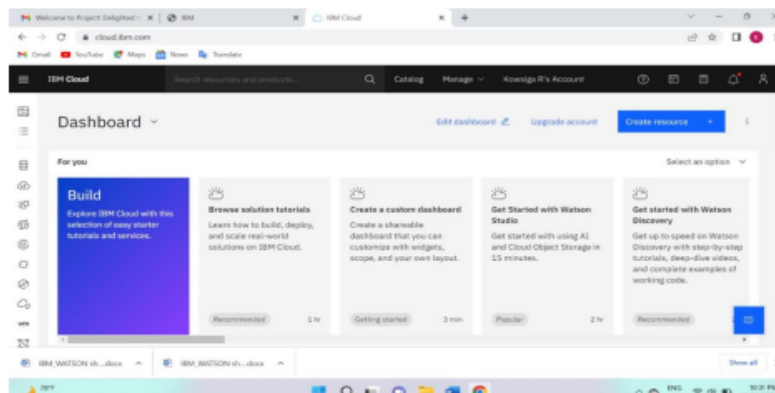
# Project Development –Delivery plan sprint-3

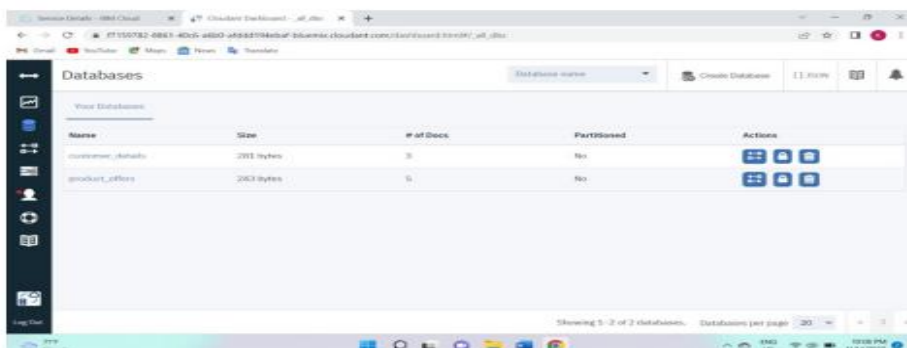
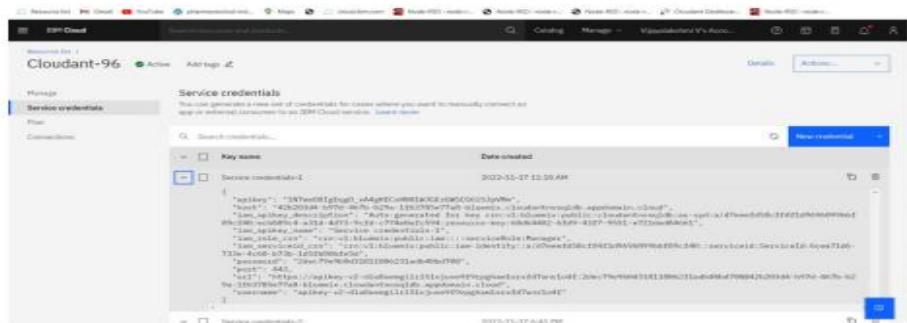
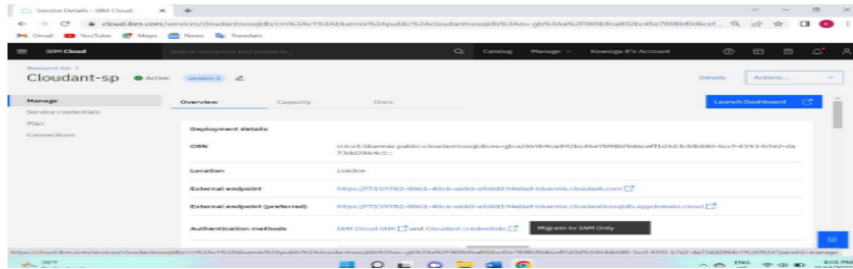
**IoT Based Safety Gadget for Child Safety Monitoring & Notification**

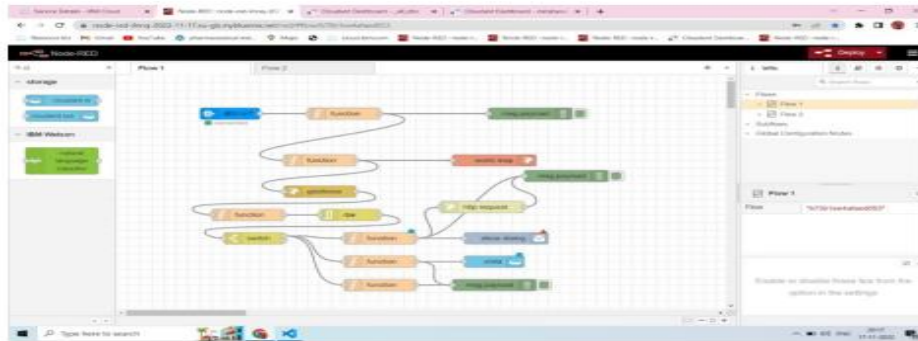
**TEAM ID: PNT2022TMID33855**

Creating Cloudant DB and integrating Node-Red with the Web UI

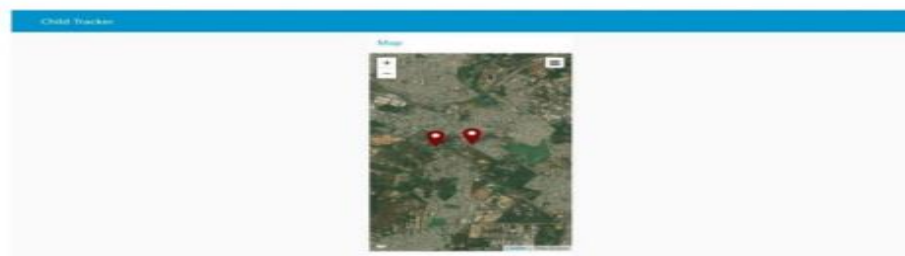
Create Cloudant DB:







## Node-Red Dashboard(Web ui):



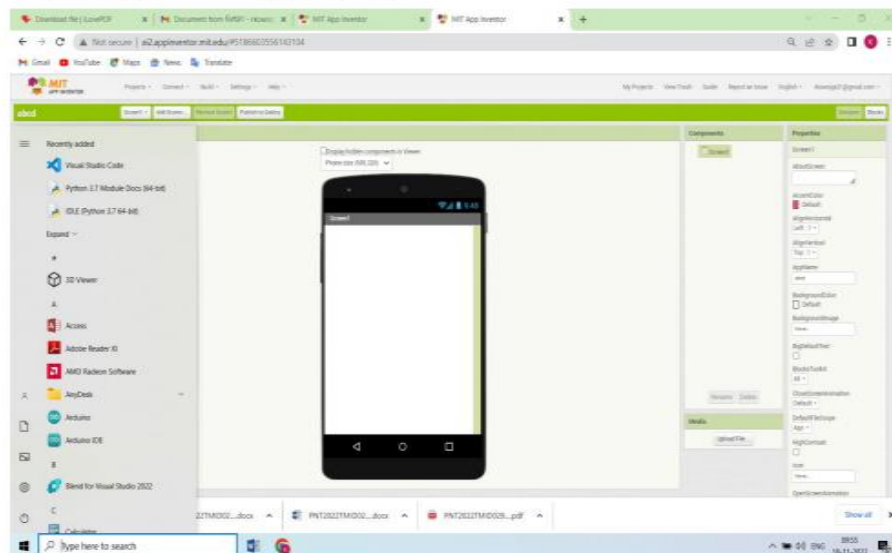
## Project Development – Delivery plan sprint-4

IoT Based Safety Gadget for Child Safety Monitoring & Notification

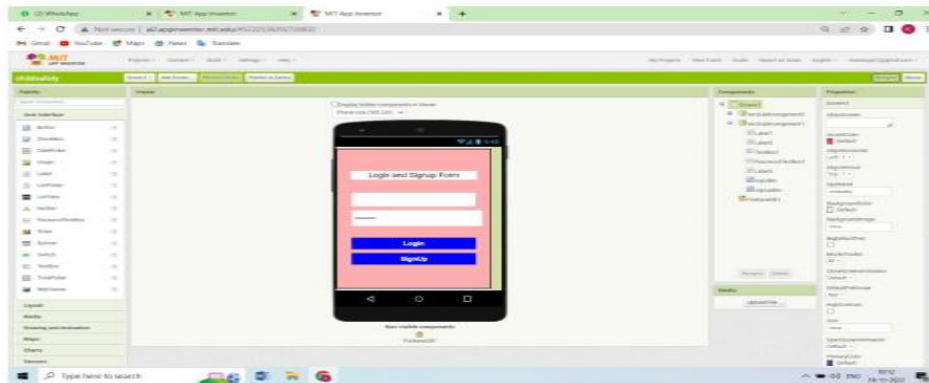
TEAM ID: PNT2022TMID33855

### Creating the MIT app and Showing the child's location

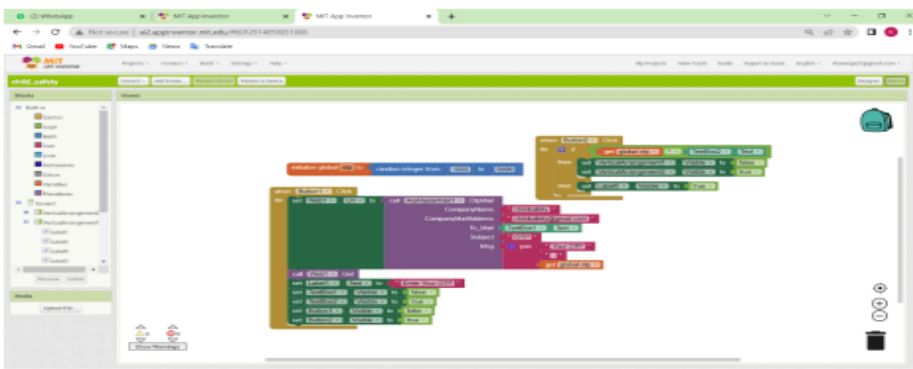
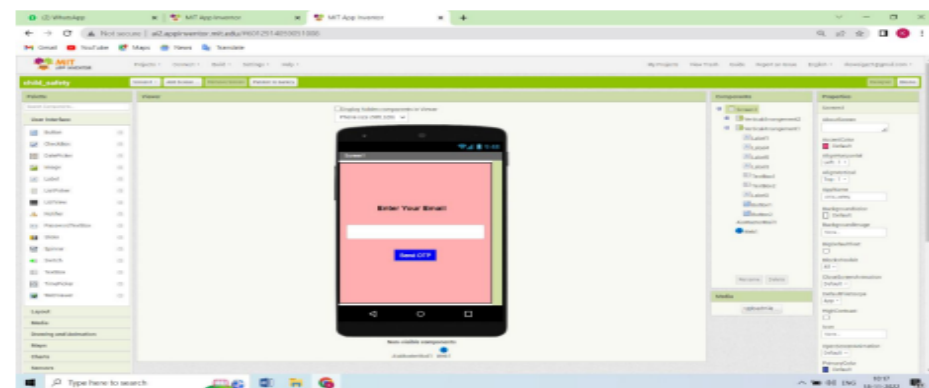
#### Create App in MIT App inventor:

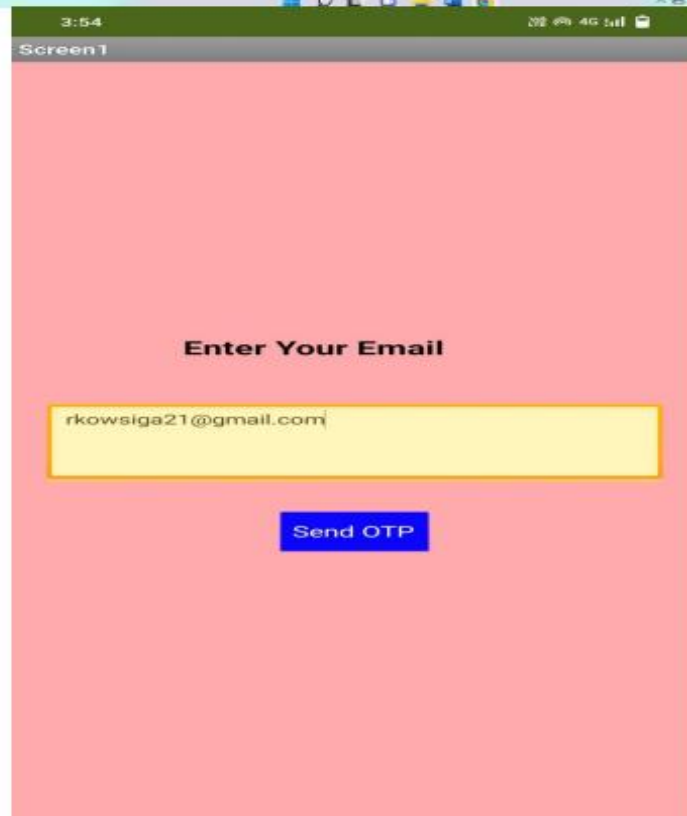
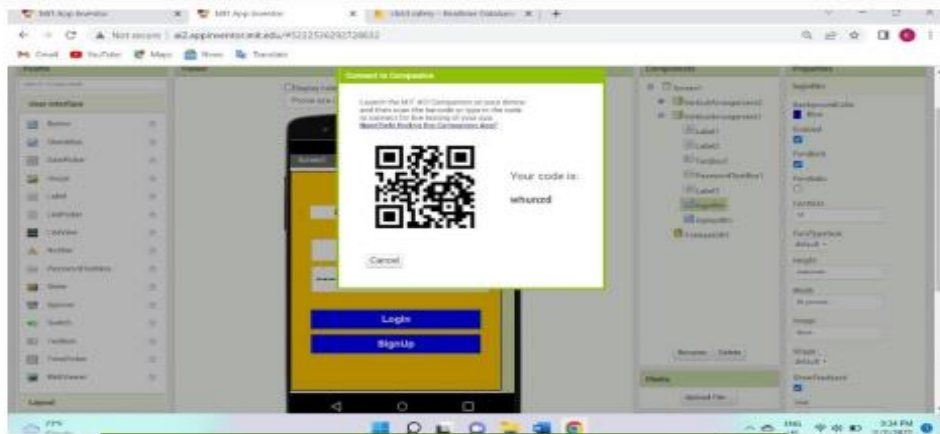






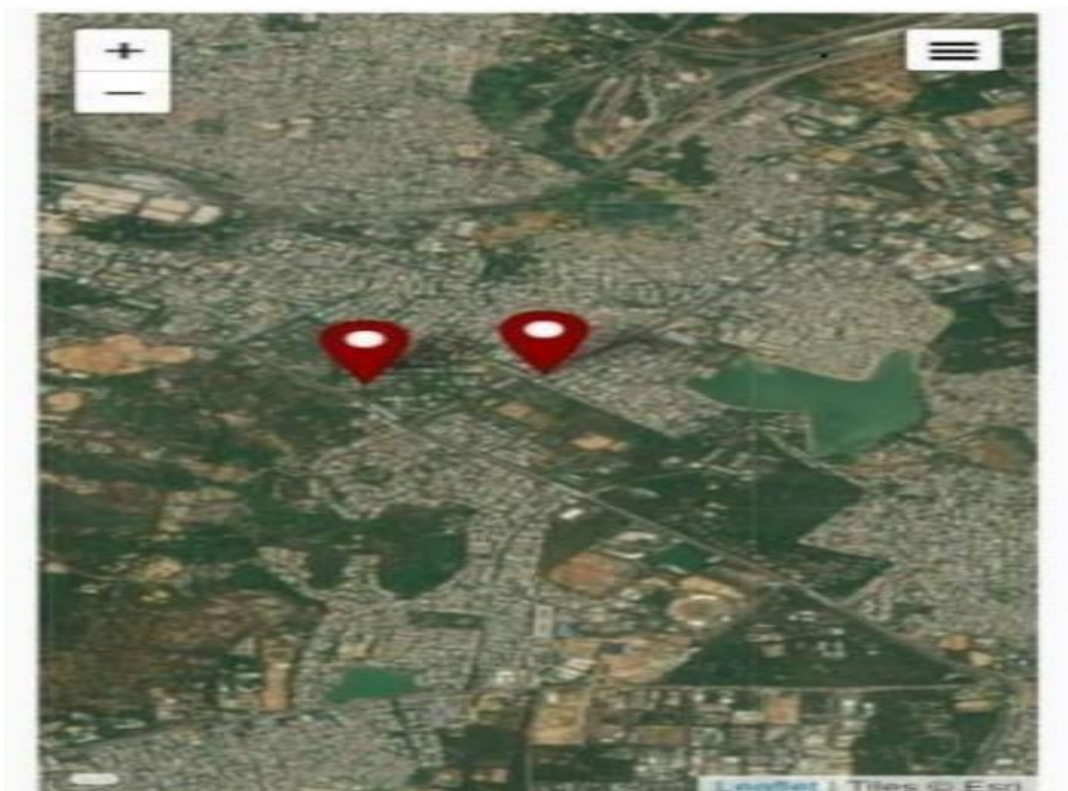
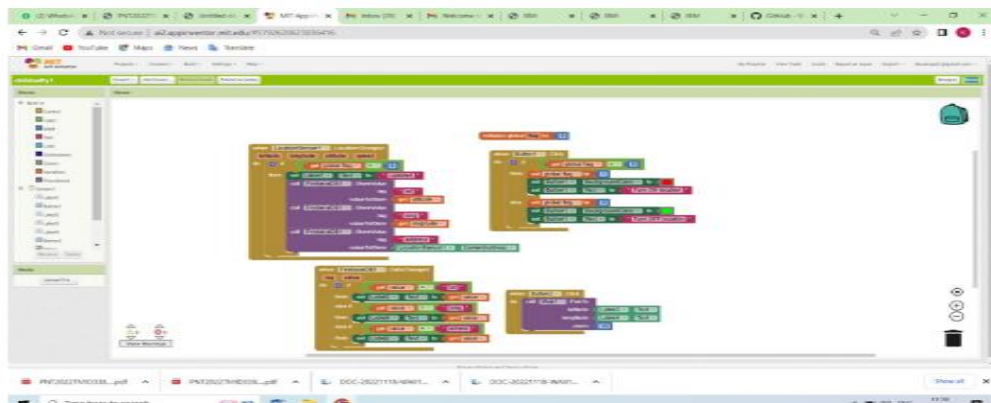
## Block Configuration:



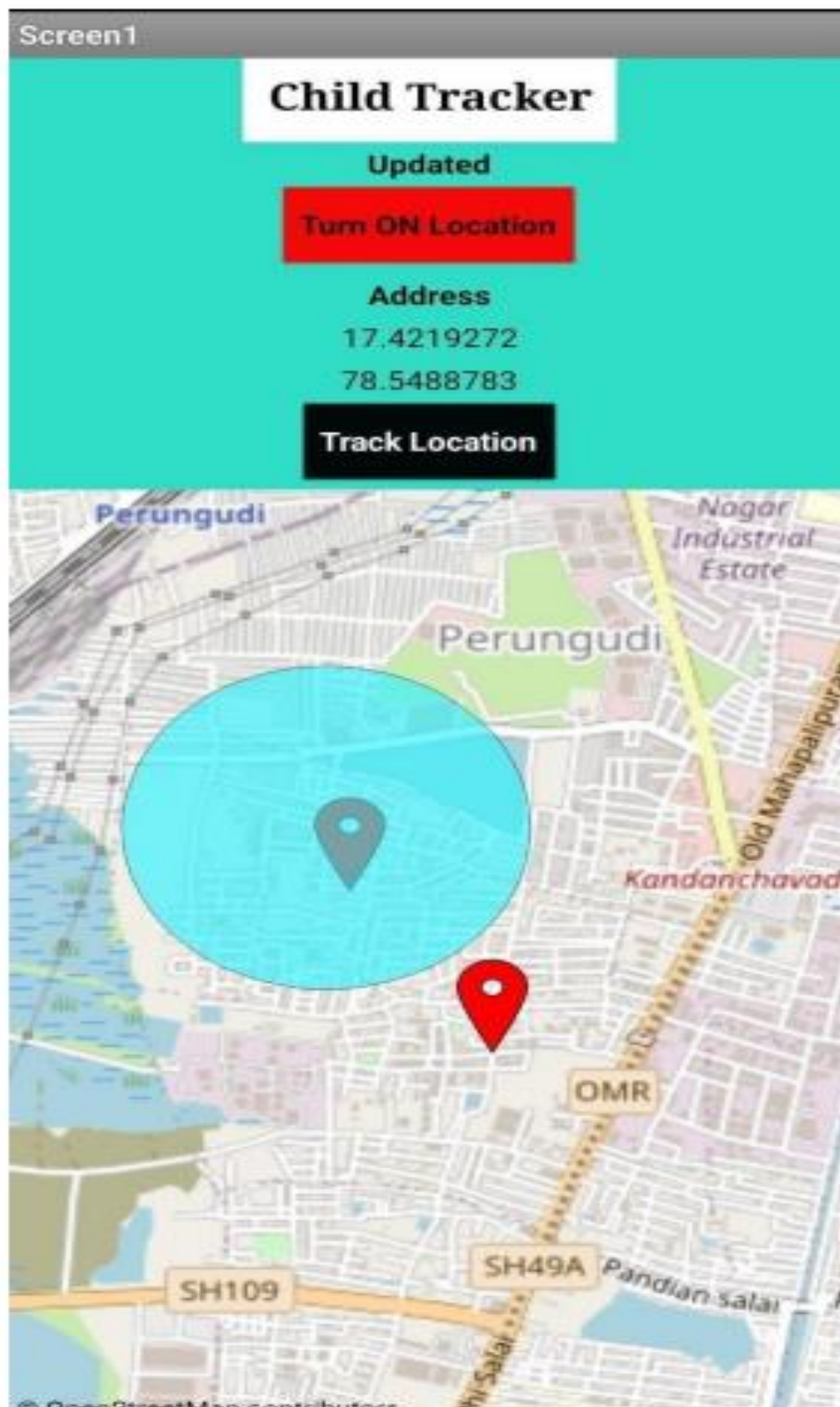








## Location Status:



## Sprint Delivery Schedule:

### Project Planning Phase Project Planning Template (Product Backlog, Sprint Planning, Stories, Story points)

Date	24 Oct 2022
Team ID	PNT2022TMID33855
Project Name	Project - IOT-Based Safety Gadget for Child Safety Monitoring and Notification
Maximum Marks	8 Marks

### Product Backlog, Sprint Schedule, and Estimation (4 Marks)

Use the below template to create product backlog and sprint schedule

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	4	High	R.Kowsiga
Sprint-1	Confirmation Email	USN-2	As a user, I will receive confirmation email and SMS once I have registered for the application	3	High	P.Madhumitha
Sprint-2	Authentication	USN-3	As a user, I can register for the application through Email ID and Mobile App.	2	Low	M.Niffa Meriya
Sprint-1	Login	USN-4	As a user, I can log into the application by entering email & password.	2	Medium	B.E Dharani
Sprint-1	Dashboard	USN-5	As a user, I can monitor, measure, analyze relevant data in key areas.	8	High	R.Kowsiga
Sprint-2	Notification	USN-1	As a user, I should be able to receive notification when the child is in emergency situations.	9	High	P.Madhumitha
Sprint-2	Store data	USN-2	As a user, I need to store the location data and child information into the database.	10	High	M.Niffa Meriya
Sprint-2	Communication	USN-3,1	The child and the parent should be able to communicate.	7	Medium	B.E Dharani

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-3	IoT Device	USN-1,4	We automatically monitor the child in real time using Internet of Things, with the help of GPS, GSM, and Arduino.	6	Medium	R.Kowsiga
Sprint-3	Node RED	USN-5,2	The data stored in IBM Cloud should be integrated properly.	8	High	P.Madhumitha
Sprint-4	User Interface	USN-1,4	The point of human-computer interaction and communication in a device.	7	Medium	M.Niffa Meriya
Sprint-4	Geofencing	USN-2,3,5	Based on the geographical coordinates, the geofence of the child can be done.	8	High	B.E Dharani

**Project Tracker, Velocity & Burndown Chart: (4 Marks)**

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

## Reports from JIRA:



### Project Planning Phase

#### Project Planning (Milestones & Activity list)

Date	29 October 2022
Team ID	PNT2022TMID3 3855
Project Name	IoT Based Safety Gadget for Child Safety Monitoring and Notification

#### Remaining tasks (Milestones & Activities) to be completed

Milestones	Activities
Project development phase	Delivery of sprint- 1,2,3,4
Create and configure and IBM cloud services	Create IBM cloud account
	Create IBM Watson
Create and access deep learning	Create v1 to interact with app deploy
	Create IBM and connect with python
Create & database in cloudant DB	Launch the cloudant DB and Create database
Develop the python flask	Install the python software
	Develop python code
Create the web application	Develop the web application
	To intensity and showcase on open CV window

#### Finished Tasks (Milestones & Activities)

Milestones	Activities	Description
Ideation phase	literature	Literature survey on the selected project & information gathering
	Empathy Map	Prepare empathy map to capture the user pains & gains, prepare list of problem statement



	<u>Ideation</u>	Organizing the brainstorming session and priorities the top 3 ideas based on feasibility & importance
Project design phase I	Proposed solution	Prepare proposed solution document which includes novelty, feasibility of ideas, business model, social impact, scalability of solution
	Problem solution fit	Prepare solution fit document
	Solution Architecture	Prepare solution architecture document
Project Design Phase II	Customer journey	Prepare customer journey map to understand the user interaction & experience with the application
	Functional requirement	Prepare functional & non functional requirement document
	Data flow diagram	Prepare Data flow Diagram
	Technology Architecture	Draw the technology architecture diagram
Project planning phase	<u>Milestones &amp; Activity list</u>	Prepare milestones and activity list of the project
	Sprint delivery plan	Prepare sprint delivery plan

**CODING & SOLUTIONING (Explain the features added in the project along with code):**

```
import json
```

```
import wiotp.sdk.device
```

```
import time
```

```
import random
```

```
myConfig = {

    "identity":{

        "orgId": "4o1qxb",

        "typeId": "TestDeviceType",

        "deviceId": "12345"

    },

    "auth": {

        "token": "pnhXvzN-sWMKv&hxyi"

    }

}

client = wiotp.sdk.device.DeviceClient(config=myConfig, logHandlers=None)

client.connect()

while True:

    name= "Smartbridge"

    #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", msgFormat="json", data=myData,
```

```
qos=0, onPublish=None)
```

```
print("Data Published to IBM IoT platfrom: ", myData)
```

```
time.sleep(5)
```

```
client.disconnect()
```

### **Feature 1:**

- From mobile cellular GSM network is send, and this network is given to GSM module, it is given to Arduino UNO and to SOS Light and alarm, GPS Sensor and Temperature Sensor is detected by Arduino UNO.

### **Feature 2:**

- Parents and kids link with the distance and the location values obtained from the mobile devices are stored here.
- The values include parent id,kid id,distance,longitude,latitude etc.

## Performance Testing:

**WPS Office**    Performance Testing.xlsx    +

Menu ▾ | Paste ▽ | Copy ▽ | Format Painter | Font: Calibri 12 | Bold B | Italic I | Underline U | Paragraph: Center | Orientation ▾ | Merge and Center ▾ | Wrap Text ▾ | General ▾ | Conditional Formatting ▾ | Format as Table ▾ | AutoSum ▾ | AutoFilter ▾ | Sort ▾ | Fill ▾

J23    fx

S.No	Project Name	Scope/feature	Functional Changes	Hardware Changes	Software Changes	Impact of Downtime	Load/Volumen Changes	Risk Score	Justification
1	IOT Based Safety Gad	Existing	Moderate	No Changes	Moderate	23-12-2030	>50 to 70%	ORANGE	New a days many children and kidnapped and abused t

S.No	Project Overview	NFT Test approach	Assumptions/Dependencies/R	Approvals/SignOff
1	In our project we are using a python	Done	Our assumption is using low ra	Approved

S.No	Project Overview	NFT Test approach	NFR - Met	Test Outcome	GO/NO-GO decision	Recommendations	Identified Defects (Detected/Closed/Open)	Approvals/SignOff
	In our project we are Approved	Done		Here we are using python code and Go		Always monitor and keep an e-Detected		Approved

**Acceptance Testing  
UAT Execution & Report Submission**

Date	17November 2022
Team ID	PNT2022TMID33855
Project Name	Project - IOT Based Safety Gadget For Child Safety And Notification
Maximum Marks	4 Marks

**1. Purpose of Document**

The purpose of this document is to briefly explain the test coverage and open issues of the [Child Safety] project at the time of the release to User Acceptance Testing (UAT).

**2. Defect Analysis**

This report shows the number of resolved or closed bugs at each severity level, and how they were resolved

Resolution	Severity 1	Severity 2	Severity 3	Severity 4	Subtotal	
By Design	10	5	3	2	20	
Duplicate	6	6	5	1	18	
External	7	6	7	2	22	
Fixed	5	4	3	2	14	
Not Reproduced	2	0	1	0	3	
Skipped	2	1	0	0	3	
Won't Fix	0	2	1	0	3	
Totals	32	24	18	7	83	

### 3. Test Case Analysis

This report shows the number of test cases that have passed, failed, and untested

Section	Total Cases	Not Tested	Fail	Pass
Print Engine	12	2	1	9
Client Application	45	2	5	38
Security	7	1	0	6

Outsource Shipping	6	1	1	4
Exception Reporting	9	3	0	7
Final Report Output	5	0	0	5
Version Control	2	0	0	2

## Test Case:

WPS Office

Performance Testing.xlsx

Project DLT-rlmat (2) (1) (1)

Testcases Report 1.xls

FileEditViewInsertPage LayoutFormulasDataReviewViewTools

Home

Click to find commands

CutCopyPaste

Calibri11

B

I

U

Table Border

Text Color

Background Color

Font Color

Font Style

Orientation

Merge and Center

Wrap Text

General

Conditional Formatting

Format as Table

Cell Style

AutoSum

AutoFilter

Sort

Fill

N10fxR.Kowsiga

	Test Case ID	Test Case Description	Expected Result	Actual Result	Status	Comments	IC for Automation (%)	MSR ID	Executed By
1	1. Login with valid email and password	1. Enter valid email and password in the login form	1. User is redirected to the dashboard	Pass	Pass	Y		R.Kowsiga	
2	2. Login with invalid email and password	2. Enter invalid email and password in the login form	2. User is redirected to the login form with an error message	Working as expected	Pass	Y		MARIN MARIJA	
3	3. Login with valid email and password	3. Enter valid email and password in the login form	3. User is redirected to the dashboard	Pass	Pass	Y		R.Kowsiga	
4	4. Login with valid email and password	4. Enter valid email and password in the login form	4. User is redirected to the dashboard	Pass	Pass	Y		R.Kowsiga	
5	5. Login with valid email and password	5. Enter valid email and password in the login form	5. User is redirected to the dashboard	Pass	Pass	Y		R.Kowsiga	
6	6. Login with valid email and password	6. Enter valid email and password in the login form	6. User is redirected to the dashboard	Pass	Pass	Y		R.Kowsiga	
7	7. Login with valid email and password	7. Enter valid email and password in the login form	7. User is redirected to the dashboard	Pass	Pass	Y		R.Kowsiga	
8	8. Login with valid email and password	8. Enter valid email and password in the login form	8. User is redirected to the dashboard	Pass	Pass	Y		R.Kowsiga	
9	9. Login with valid email and password	9. Enter valid email and password in the login form	9. User is redirected to the dashboard	Pass	Pass	Y		R.Kowsiga	
10	10. Login with valid email and password	10. Enter valid email and password in the login form	10. User is redirected to the dashboard	Pass	Pass	Y		R.Kowsiga	

## Github link

<https://github.com/IBM-EPBL/IBM-Project-30611-1660150636/tree/main/Project%20Development%20Phase>

### Project Demo Link:

[https://drive.google.com/file/d/1eHTFe92\\_lh2OWY2QT9-3YxyvcUfak5kT/view?usp=drivesdk](https://drive.google.com/file/d/1eHTFe92_lh2OWY2QT9-3YxyvcUfak5kT/view?usp=drivesdk)

## Source Code:

---

### Creating Python Code:

```
import json
import wiotp.sdk.device
import time
import random
myConfig = {
    "identity": {
        "orgId": "4o1qxb",
        "typeId": "TestDeviceType",
        "deviceId": "12345"
    },
    "auth": {
        "token": "pnhXvzN-sWMKv&hxyi"
    }
}
client = wiotp.sdk.device.DeviceClient(config=myConfig, logHandlers=None)
client.connect()

while True:
    name= "Smartbridge"
    #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", msgFormat="json", data=myData,
qos=0, onPublish=None)
    print("Data Published to IBM IoT platfrom: ", myData)
    time.sleep(5)

client.disconnect()
```

## CONCLUSION:

Children are powerful agents of change and should be included during the development and implementation of child injury prevention projects at local,national and international levels.Tell your child to avoid talking to people they don't known when you're not around.Make sure your child knows never to walk away with strangers.Make sure your

child understands that they should always tell you if a stanger approaches,and never to keep this secrets.The children must byheart their address and telephone number .