

# **Project Report**

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# **1. INTRODUCTION**

## **a. PROJECT OVERVIEW**

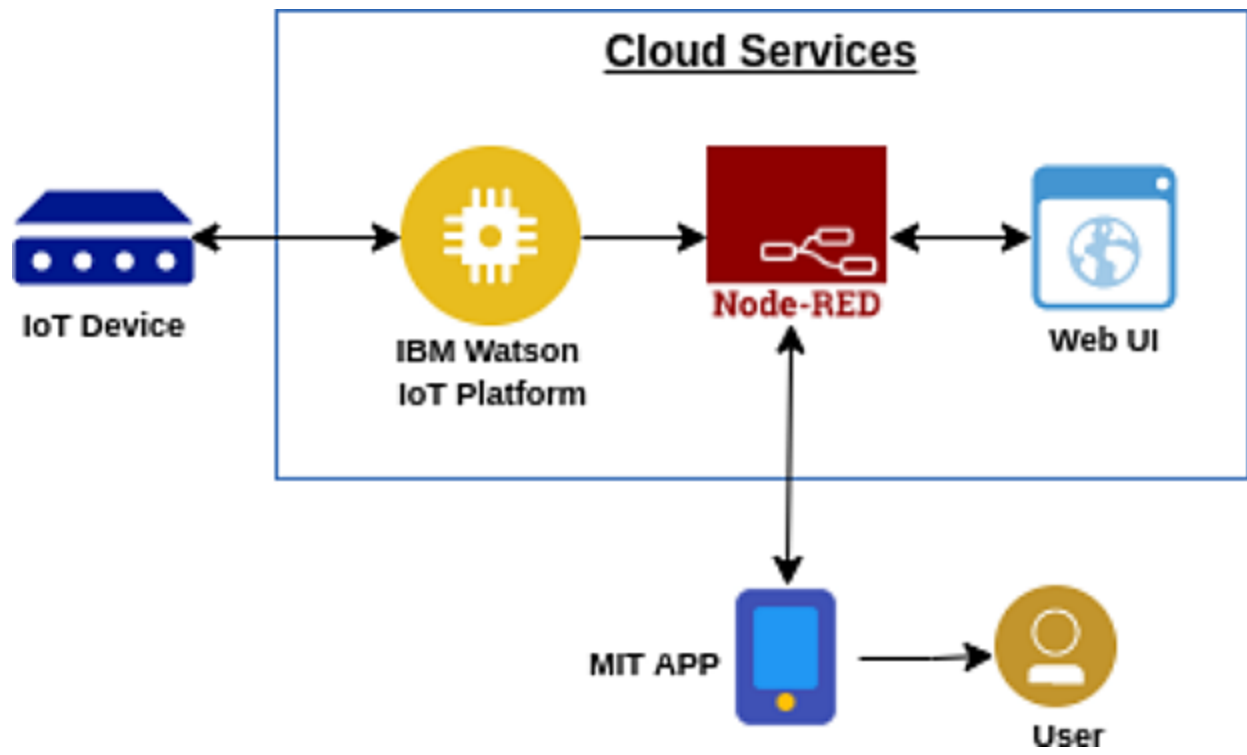
In general, kids cannot tell their parents about abuse they experience on a regular basis. They are too young to really comprehend what truly occurs to them. Parents find it challenging to recognise when their children are being abused. Every child should have access to an autonomous real-time monitoring system in order to protect them from attacks before they happen. This system uses the data gathered from each sensor, including the temperature sensor, pulse rate detection sensor, metal detection sensor, and GPS location data, to determine the condition of the child and then notifies the appropriate guardians through GSM.

## **b. PURPOSE**

The main objective of this project is to employ contemporary technology to develop a device that offers "Smart Child Safety" to safeguard children, which will be far more successful in helping victims than existing approaches.

The gadget provides for continuous child surveillance thanks to IoT monitoring and a GSM module. Additionally, it contains a large number of sensors that are linked to a CPU and utilised to identify precise signals like heart rate, temperature, and other risks and notify the parents. There is also a panic button on the gadget. This button's function is to alert parents and the police of a child's whereabouts anytime they are in a dangerous situation.

## Technical overview of IoT



## **2 LITERATURE SURVEY**

### **a. Existing problems**

1. This study focuses on designing a device that can track a child's whereabouts using GPS, as well as providing a panic button on the device to inform the parent calling for assistance over a GSM module. Android parental app is created to control and monitor the gadget at any moment. smart device gadget is constantly coupled to a parental phone that can and use a GSM device to send and receive SMS as well as phone calls. module, a wireless technology is also used on the apparatus which is advantageous to confine the gadget within a monitoring range, When a device leaves the monitoring area, an alert is generated.
2. Children's involvement in crime is on the rise today, which makes people more concerned about child protection. The goal of this research is to suggest an Internet of Things-based smart band for child safety. Data collection techniques include semi-structured interviews and online questionnaires. By providing questions electronically and requiring respondents to submit their responses online, the online survey collects feedback. In a semi-structured interview, the researcher meets the respondents and poses some preset questions while posing others that were not before thought of.
3. Approximately 80% of all child abuse cases reported now around the world involve girls, with the other 26% being boys. In this world, a child goes missing every forty seconds. Children are the foundation of any country, thus if their future was threatened, it would have an impact on that country's overall development nation. The emotional and mental stability of the children is impacted by the maltreatment, which in turn destroys their future and career.

## b. REFERENCE

**Author(s):** N. Manjunatha, H. M. Jayashree, N. Komal , K. Nayana

**Author(s):** Lai Yi Heng,Intan Farahana Binti Kamsin

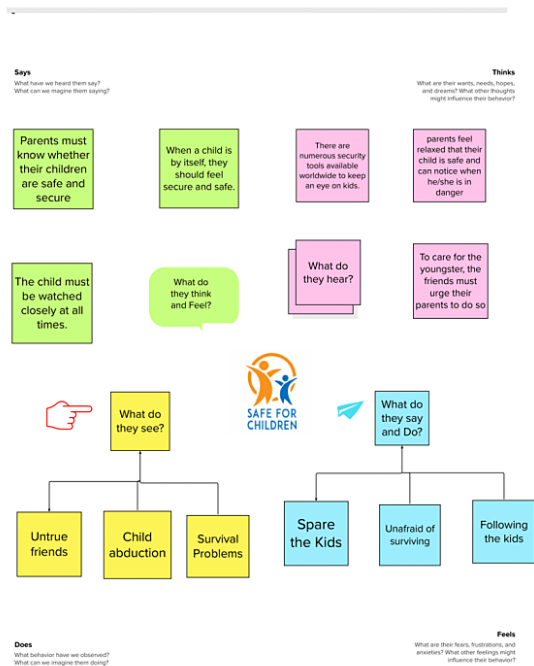
**Author(s):** N. Senthamilarasi

## 3. IDEATION & PROPOSED SOLUTION

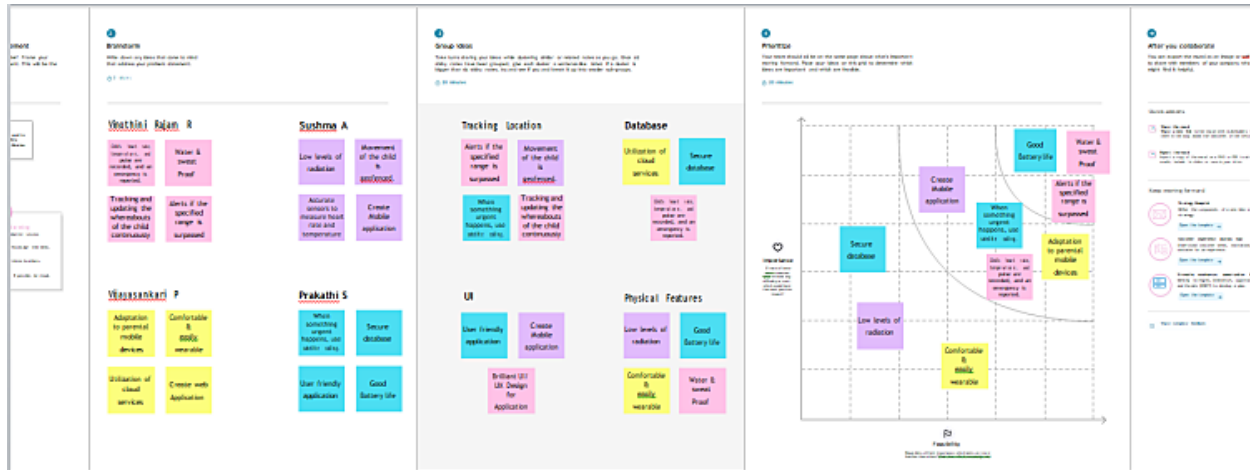
### a. Empathy Map Canvas



IoTbased safety gadget for child monitoring



## b. Ideation &Brainstorm

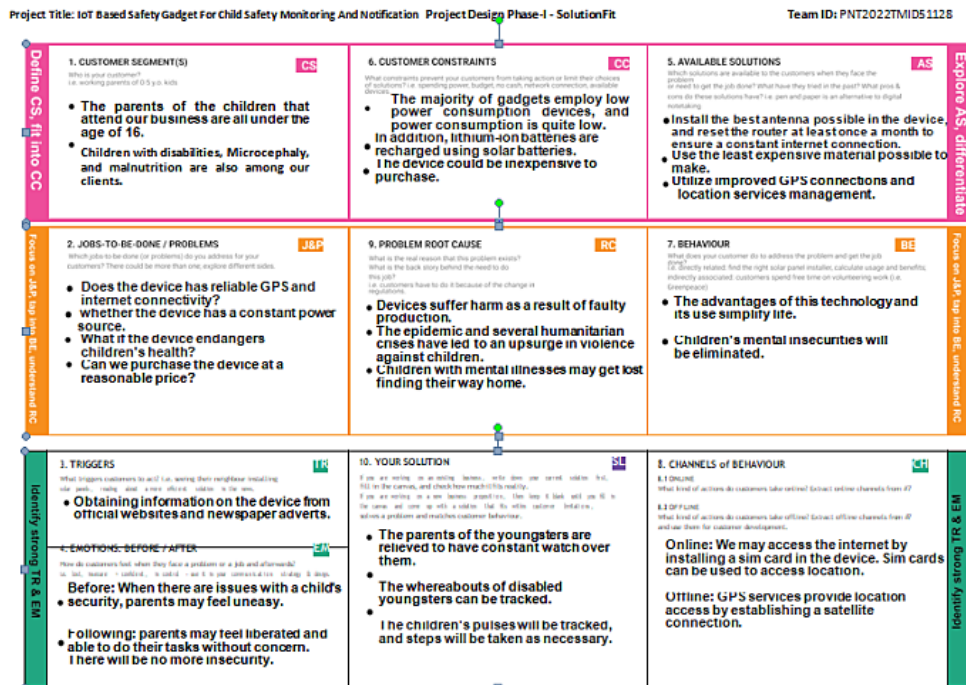


## C. Proposed solution

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	The increased number of recorded crimes against children nowadays raises serious concerns about kid safety and tracking. With this goal in mind, a smart Internet of Things (IoT) device for child safety and tracking was created to assist parents in finding and keeping an eye on their kids.
2.	Idea / Solution description	To track the child surroundings and monitor them on a daily basis in the form of web application. Users can get an analysis in graphical form.
3.	Novelty / Uniqueness	The work is innovative in that when a child is in need of rapid attention during an emergency, the system instantly notifies the

		parent or caregiver by sending an SMS.
4.	Social Impact / Customer Satisfaction	Reduces Time consumption. Prioritizes the safety of child.
5.	Business Model (Revenue Model)	The application is available on a subscription basis.
6.	Scalability of the Solution	Even when a big number of people visit the programme at once, performance and speed remain unaffected.

#### d. Problem solution fit





## 4 REQUIREMENT ANALYSIS

### a. Functional Requirements

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	<ul style="list-style-type: none"><li>• Signing up with Gmail</li><li>• Using a phone number to register</li></ul>
FR-2	User Confirmation	<ul style="list-style-type: none"><li>• Email confirmation required</li><li>• Reassurance via OTP</li></ul>
FR-3	App installation	<ul style="list-style-type: none"><li>• Installing through link</li><li>• Installing via the Play Store</li></ul>
FR-4	Settings geofence	<ul style="list-style-type: none"><li>• Sending by user to locate child</li></ul>
FR-5	Detecting child location	<ul style="list-style-type: none"><li>• App-based location detection</li><li>• SMS location detection</li></ul>
FR-6	User Interface	<ul style="list-style-type: none"><li>• User Login Form.</li><li>• Admin Login Form.</li></ul>

FR-7	Database	<ul style="list-style-type: none"> <li>• Cloud storage for constant connectivity.</li> <li>• The location and distance data from children's and parents' mobile devices are linked here.</li> <li>• Parent ID, child ID, distance, longitude, latitude, etc. are among the values.</li> </ul>
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FR No.	Functional Requirement	Sub Requirement
FR-8	Server	<ul style="list-style-type: none"> <li>• It links the front-end application and the database.</li> <li>• The backend server is installed on an IBM cloud instance and is designed to operate as a service.</li> <li>• The backend server is installed on an IBM cloud instance and is designed to operate as a service.</li> </ul>
FR-9	GPS tracking	<ul style="list-style-type: none"> <li>• The system is equipped with a GPS module that collects the user's location data and stores it in a database.</li> </ul>
FR-10	API	<ul style="list-style-type: none"> <li>• Using an API, the collected value is added to the database.</li> </ul>
FR-11	React JS	<ul style="list-style-type: none"> <li>• For our project, the front end is built using react js.</li> <li>• We are using node js on the back end.</li> </ul>
FR-12	GPS modules	<ul style="list-style-type: none"> <li>• It directly receives data from satellites.</li> </ul>

FR-13	Battery Life	<ul style="list-style-type: none"> <li>The device will still function if the youngster or parent forgets to charge it for an entire day. Because of this, we want this device to operate continuously from a single battery.</li> <li>It should be long-lasting.</li> </ul>
FR-14	Location on History	<ul style="list-style-type: none"> <li>The location history will make it easier to keep tabs on the child's whereabouts so that the system can be updated. For 30 days, the location history will be available.</li> <li>For instance, if a youngster goes missing, parents can use location data to trace down their child's whereabouts and activities.</li> </ul>

## b. Non-functional Requirements:

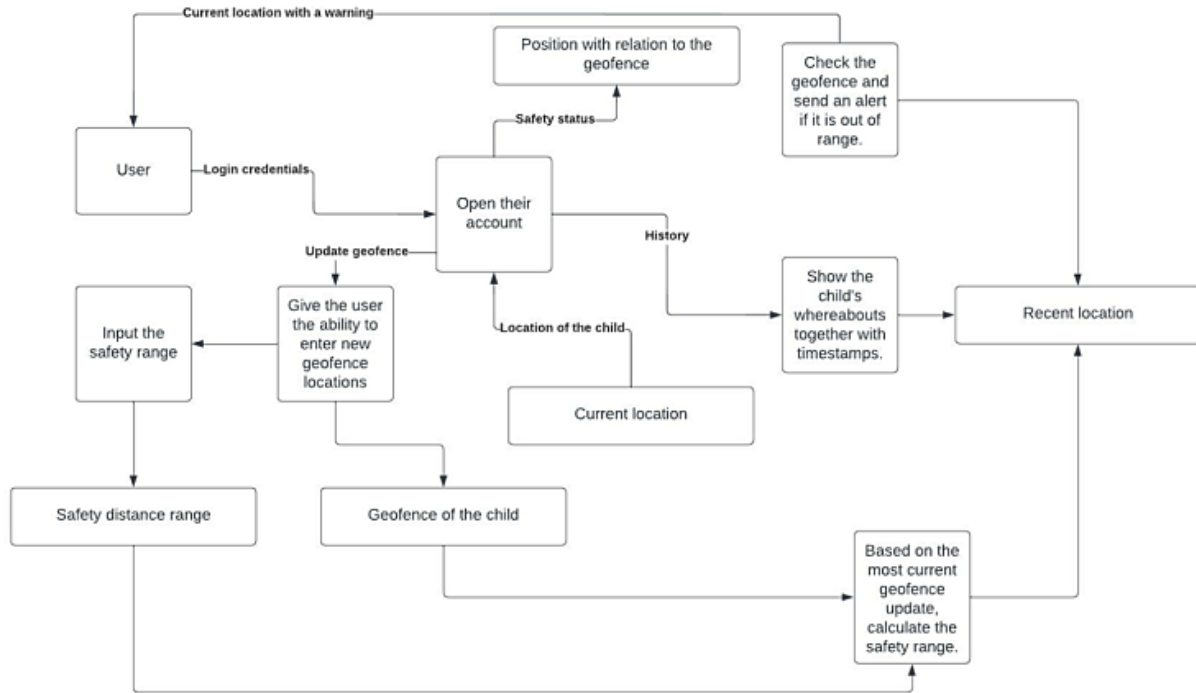
FR No.	Non-functional Requirements	Description
NFR-1	Usability	<ul style="list-style-type: none"> <li>Devices with GSM capabilities can assist in alerting parents or other family members of the child's existing circumstances and delivering the information quickly in order to save the child.</li> </ul>
NFR-2	Security	<ul style="list-style-type: none"> <li>With the help of a function on our smartphone called Geo-Fence, parents can feel more certain about the safety of their children.</li> <li>Your phone will immediately notify you whenever your youngster enters or leaves that area.</li> </ul>

NFR-3	Reliability	<ul style="list-style-type: none"> <li>• Portable</li> <li>• Easy to use</li> <li>• Flexibility</li> </ul>
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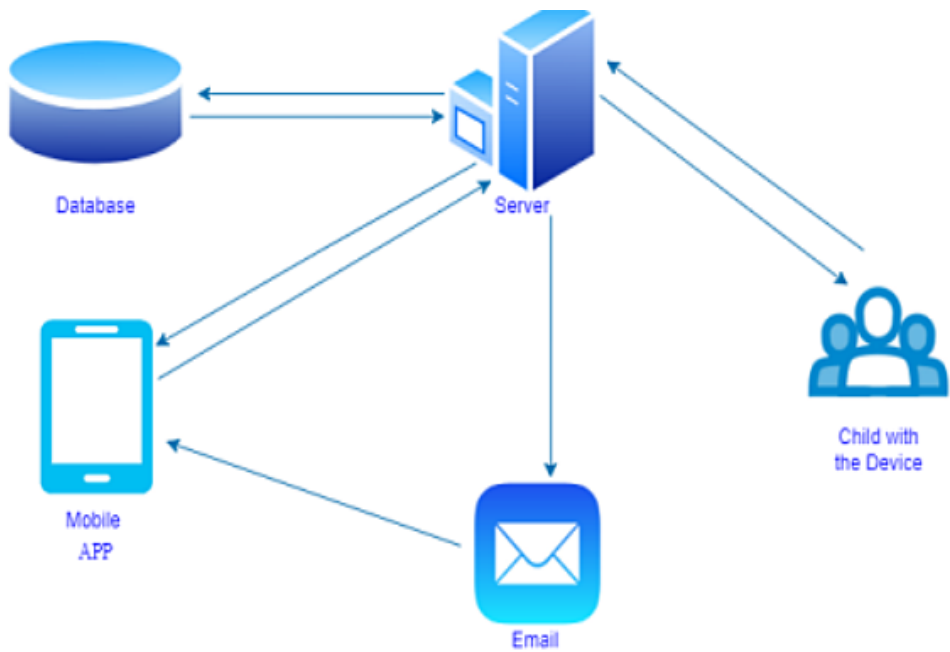
NFR-4	Performance	<ul style="list-style-type: none"> <li>• Create a child tracker to assist parents in tracking the whereabouts of their children at all times.</li> <li>• The child's parents or other caregivers will receive the notification in accordance with their location.</li> <li>• The database will contain all of the location information.</li> </ul>
NFR-5	Availability	<ul style="list-style-type: none"> <li>• Even in a crowd, keep an eye on your child.</li> <li>• Get children's travel information at any time</li> <li>• Recognize your present location</li> </ul>
NFR-6	Scalability	<ul style="list-style-type: none"> <li>• The use of a gadget ensures the children's security and monitoring.</li> <li>• Parents don't need to be concerned about their kids.</li> </ul>
NFR-7	Valuability	<ul style="list-style-type: none"> <li>• The system should be able to send the finance authority a timely delivery. The answer should be "advancing the mission" in the case of nonprofit organisations.</li> </ul>
NFR-8	Dynamicity	<ul style="list-style-type: none"> <li>• IoT devices might be able to modify and adapt dynamically in response to their environment</li> </ul>
NFR-9	Desirability	<ul style="list-style-type: none"> <li>• It should be simple to navigate.</li> <li>• The user should be able to easily search for and find the information he needs.</li> </ul>

## 5 PROJECT DESIGN

### a. Data Flow Diagrams



**b. Solution & Technical Architecture**



**c. 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 set up my account by providing my email, password, and password confirmation.	I can access my account / dashboard	High	Sprint-1

		USN-2	As a user, I will receive confirmation email once I have registered myself	I can receive conformation email & click confirm	High	Sprint-1
		USN-3	As a user, I can sign up for the application using my Apple ID.	I can register & accessthe dashboard with apple account Login	High	Sprint-2
	Login	USN-4	As a user, I can log into the applicationby entering user id & password		High	Sprint-1
Custom erCare Executi ve	Login		As I enter I can see how the application is doing, look for any bugs, keep an eye on things, and determine whether all users are permitted.	I can only use the credentials I've provided to log in	Medium	Sprint - 3

Administrat or	Login		Maintaining and ensuring that the database holding the locations is exact, up-to-date, and secure.	I can login only with my provided credentials	High	Sprint - 3
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## 6 PROJECT PLANNING AND SCHEDULING

### a. Sprint planning

**Product Backlog, Sprint Schedule, and Estimation:**

**on:**

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Installation	USN-1	As a user, I have the option of installing an online simulator.	1	Medium	Prakathi S
Sprint-1		USN-2	As a user, I can connect the necessary parameters in the device.	2	High	Vinothini Rajam R
Sprint-1	Activation	USN-3	As a user, I have the ability to activate the Device	2	medium	Vijayasankari P
Sprint-1	Simulation	USN-4	I will write the code in this simulation as a user.	3	high	Sushma A
Sprint-1		USN-5	As a user, I can run the programme to see if the error is present.	4	High	Prakathi S
Sprint-2	Cloud	USN-1	As a user, I build a cloud server.	2	Medium	Sushma A



Sprint-2		USN-2	As a user, I can enter the device specifications into the cloud that has been created.	2	Medium	Vinothi niRajam R
Sprint-2		USN-3	As a user, I can connect my device to the cloud.	3	high	Vijayasankari P
Sprint-2		USN-4	As a user, I can connect my device to the cloud via wifi.	5	high	Prakathi S
Sprint-3	Editor	USN-1	I can provide a browser-based editor as a programmer	2	low	Vinothi niRajam R
Sprint-3		USN-2	As an editor, I can easily connect flows using the palette's diverse nodes.	3	medium	Sushma A
Sprint-3		USN-3	With just one click, I can be set up for use at runtime.	5	high	Vijayasankari P
Sprint-3	Node.js	USN-1	I am able to use the Node.js platform as a programmer.	3	medium	Sushma A
Sprint-3	Geofence nodes	USN-2	I can add the geofence nodes to the palette as a user.	3	high	Prakathi S
Sprint-3	HTTP	USN-3	As a programmer, I can talk to the tool using HTTP.	2	medium	Vinothi niRajam R

Sprint-4	API	USN-1	I can create API tokens as a user using the cloud.	3	medium	Vijayasankari P
Sprint-4	API	USN-2	I use API keys as a user to incorporate the programming tool.	3	medium	Sushma A

Sprint-4	SMS	USN-3	I can sign up for SMS (Subscriber IdentityModule) services as a user.	2	high	Prakahti S
Sprint-4	API	USN-1	I can send messages to the client number as a user by using the API (Application Programming Interface).	2	high	Vijayasankari P
Sprint-4		USN-2	I can receive messages as a user through SMSinform (Subscriber Identity Module).	2	high	Vinothi niRajam R

#### b. Sprint delivery schedule

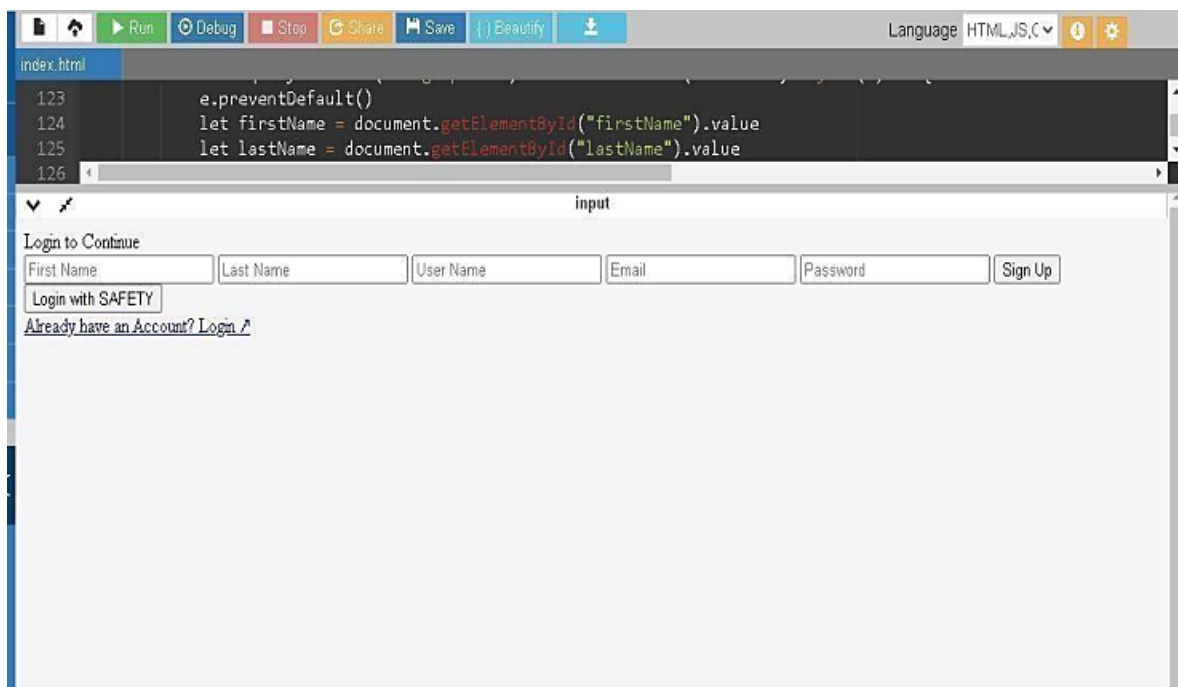
Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-1	12	6 Days	24 Oct 2022	29 Oct 2022	12	29 Oct 2022
Sprint-2	12	6 Days	31 Oct 2022	05 Nov 2022	12	31 Oct 2022
Sprint-3	18	6 Days	07 Nov 2022	12 Nov 2022	18	12 Nov 2022
Sprint-4	12	6 Days	14 Nov 2022	19 Nov 2022	12	19 Nov 2022

## 7. Coding and Solutioning

### a. Feature 1

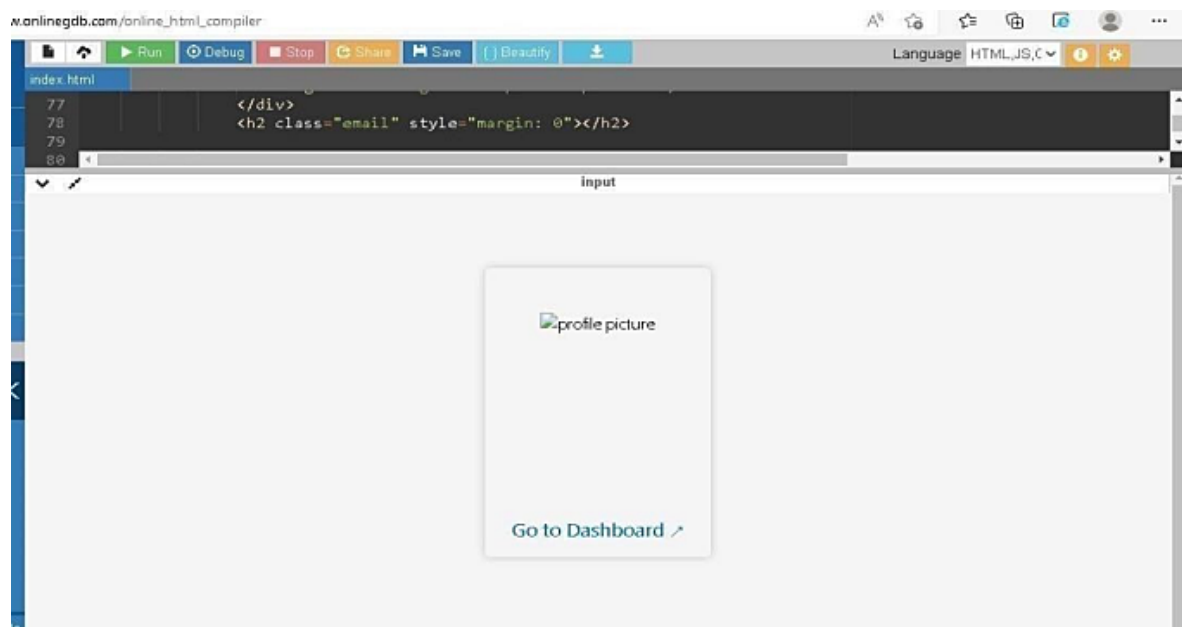
**REGISTRATION:**

**HTML:**



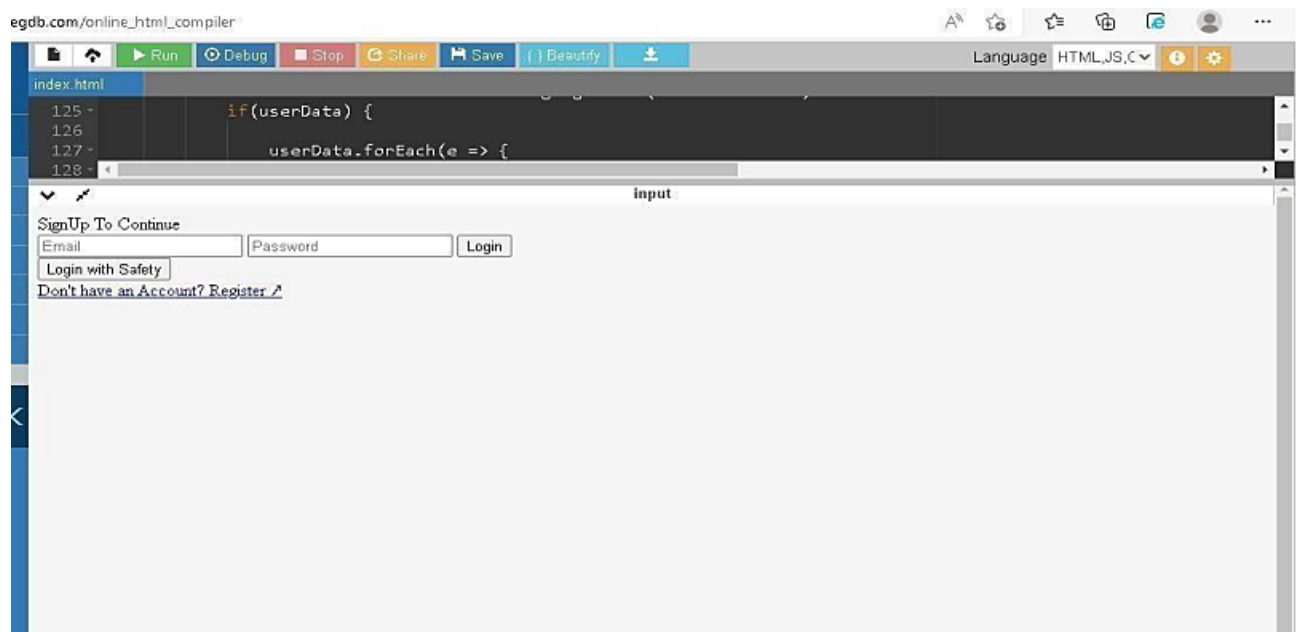
## CONFIRMATION EMAIL:

### INDEX:

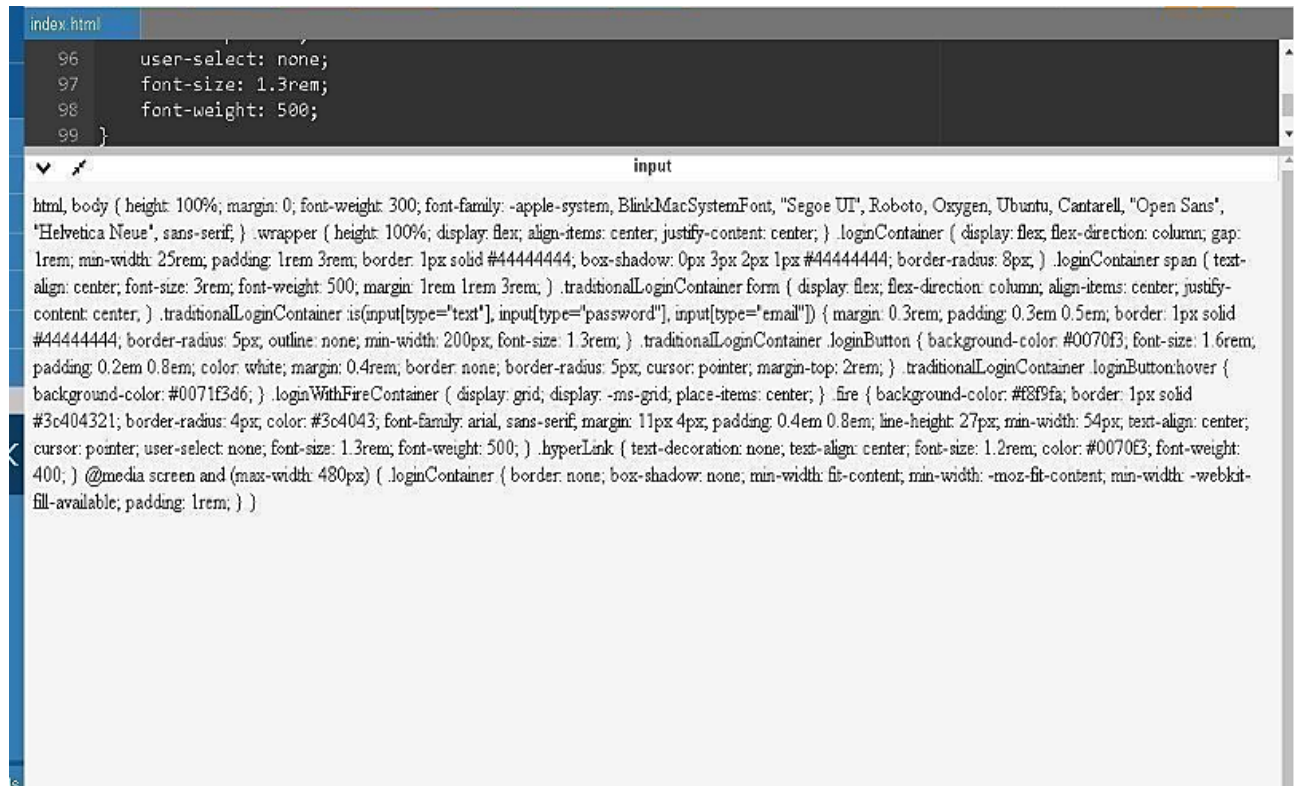


## LOGIN:

### HTML:

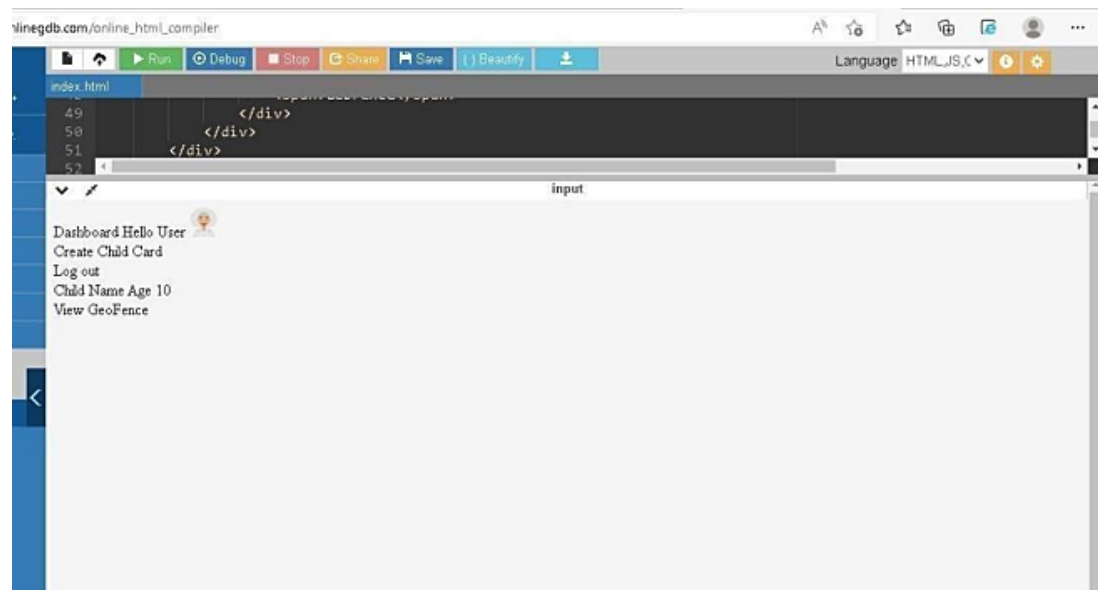


## CSS:



## DASHBOARD:

## HTML:



## CSS:

jdb.com/online\_html\_compiler

Run Debug Stop Share Save Beautify

Language: HTML,JS,C

index.html

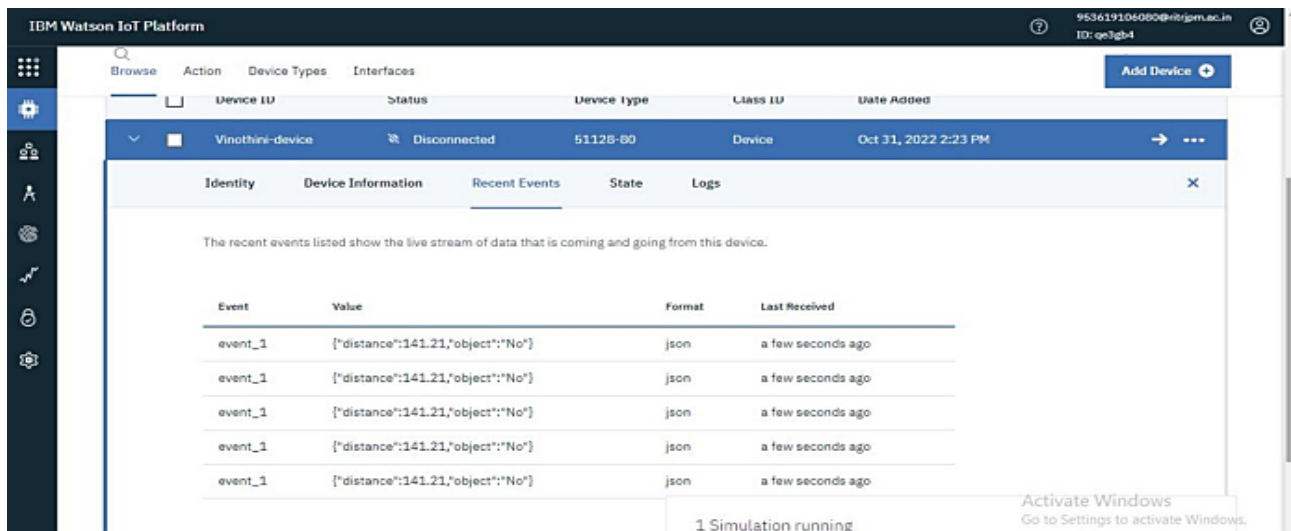
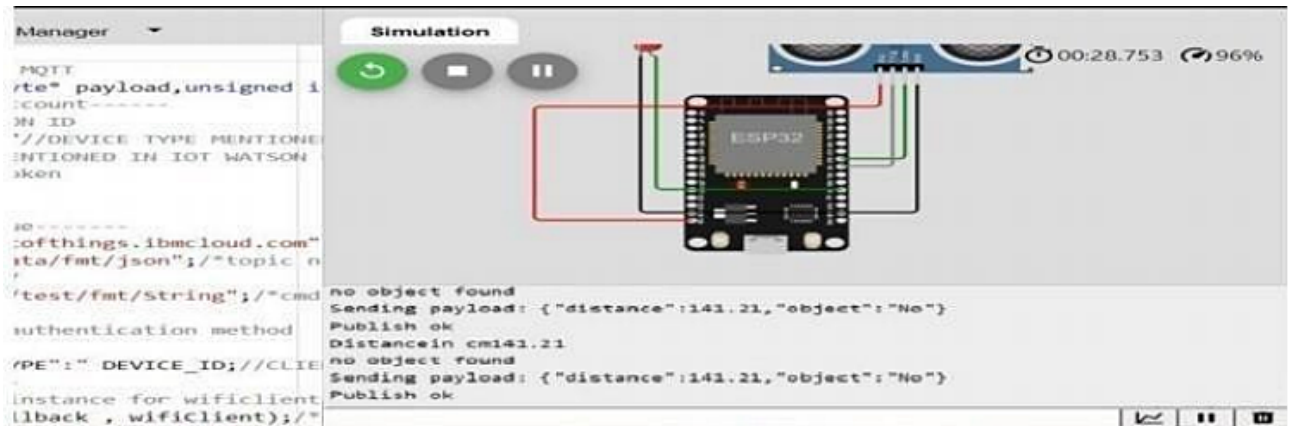
```
75 margin: 0.1rem 0.1rem 0.8rem;
76 padding: 1rem 0.8rem 0;
77 }
78
```

input

```
html, body { margin: 0; padding: 0; font-family: system-ui, -apple-system, BlinkMacSystemFont, 'Segoe UI', Roboto, Oxygen, Ubuntu, Cantarell, 'Open Sans', 'Helvetica Neue', sans-serif; }
.wrapper { display: flex; flex-direction: column; height: 100vh; margin: 0 auto; }
.header { display: flex; justify-content: space-between; align-items: center; padding: 1rem; background-color: #f1f1f1; }
.heading { font-size: 1.3rem; }
.right { display: flex; align-items: center; gap: 0.5rem; }
.actionCenter { display: flex; justify-content: flex-end; align-items: center; gap: 1rem; padding: 0.5rem 0; }
.actionCenter .action { padding: 0.5rem 0.8rem; border: 1px solid #44444444; border-radius: 12px; margin-right: 0.5rem; cursor: pointer; }
.actionCenter .action:hover { background-color: #0070f3; color: white; }
.childCardContainer { display: flex; flex-wrap: wrap; padding: 0.5rem 1rem; }
.childCardContainer .childCard { display: flex; flex-direction: column; border: 1px solid #44444444; border-radius: 12px; max-width: 300px; font-size: 1.4rem; }
.childCardContainer .childCard .childCardHeader { display: flex; gap: 3rem; margin: 0.1rem 0.1rem 0.8rem; padding: 1rem 0.8rem 0; }
.childCardContainer .childCard .actions { background-color: #0070f3; padding: 2rem 0.5rem 1rem; color: white; display: flex; justify-content: space-around; border-radius: 12px; border-top-left-radius: 0; border-top-right-radius: 0; }
.childCardContainer .childCard .actions span { border: 1px solid #0070f3; background-color: white; color: #0070f3; padding: 0.3rem 0.9rem; border-radius: 12px; cursor: pointer; }
```

### b. Feature 2

### Output:



### c. Feature 3

```
package com.example.geofence;

import android.app.PendingIntent

import android.content.Context;
import android.content.ContextWrapper;
import android.content.Intent;
import android.widget.Toast;

import com.google.android.gms.common.api.ApiException;
import com.google.android.gms.location.Geofence;
import com.google.android.gms.location.GeofenceStatusCodes;
import com.google.android.gms.location.GeofencingRequest;
import com.google.android.gms.maps.model.LatLng;

public class GeofenceHelper extends ContextWrapper {

    private static final String TAG = "GeofenceHelper";
    PendingIntent pendingIntent;

    public GeofenceHelper(Context base)
    {super(base);
    }

    public GeofencingRequest getGeofencingRequest(Geofence geofence)
    {return new GeofencingRequest.Builder()
        .addGeofence(geofence)
        .setInitialTrigger(GeofencingRequest.INITIAL_TRIGGER_ENTER)
        .build();
    }

    public Geofence getGeofence(String ID, LatLng latLng, float radius, int transitionTypes) {
        return new Geofence.Builder()
            .setCircularRegion(latLng.latitude, latLng.longitude,
radius)
```



```

    }

    .setRequestId(ID)
    .setTransitionTypes(transitionTypes)
    .setLoiteringDelay(5000)
    .setExpirationDuration(Geofence.NEVER_EXPIRE)
    .build();

    public PendingIntent getPendingIntent()
    {
        if (pendingIntent != null)
        {
            return pendingIntent;
        }

        Intent intent = new Intent(this, GeofenceBroadcastReceiver.class);
        pendingIntent = PendingIntent.getBroadcast(this, 2607, intent,
        PendingIntent.FLAG_IMMUTABLE);

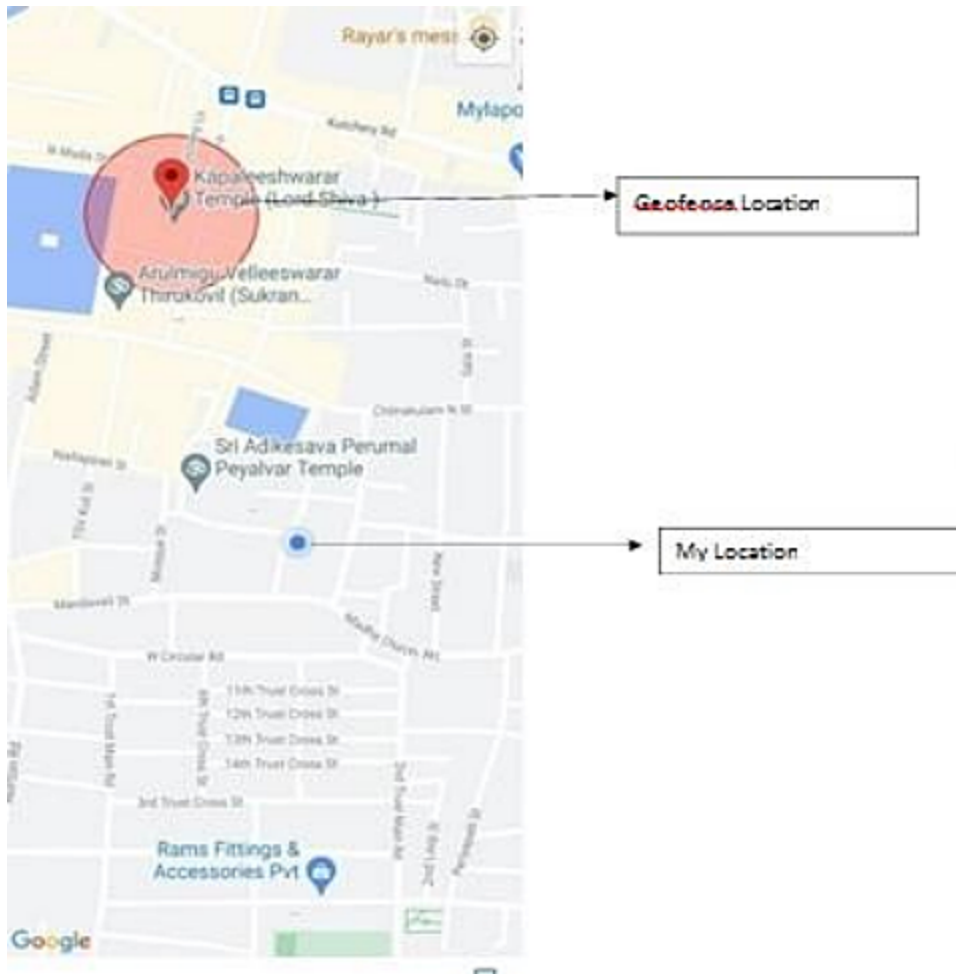
        return pendingIntent;
    }

    public String getErrorString(Exception e)
    {
        if (e instanceof ApiException) {
            ApiException apiException = (ApiException) e;
            switch (apiException.getStatusCode()) {
                case GeofenceStatusCodes
                    .GEOFENCE_NOT_AVAILABLE: return
                    "GEOFENCE_NOT_AVAILABLE";
                case GeofenceStatusCodes
                    .GEOFENCE_TOO_MANY_GEOFENCES: return
                    "GEOFENCE_TOO_MANY_GEOFENCES";
                case GeofenceStatusCodes
                    .GEOFENCE_TOO_MANY_PENDING_INTENTS: return
                    "GEOFENCE_TOO_MANY_PENDING_INTENTS";
            }
        }
        return e.getMessage();
    }
}

```

**Output :**

## Adding Geofence page



#### d. Feature 4

```
<!DOCTYPE
PE html> <html lang="en">
<head>
<meta charset="UTF-8">
<meta name="viewport" content="width=device-
width,initial-scale=1.0">
<link rel="stylesheet" href="/FIREOAUTH.css">
<link rel="stylesheet"
href="https://cdnjs.cloudflare.com/ajax/libs/nprogress/0.2.0/
nprogress.min.css">
<link rel="shortcut icon"
href="https://raw.githubusercontent.com/tharunoptimus-
pd/firepwa/main/favicon.ico?token=GHSAT0AAAAAABR
46 HVJ5M5L3QGFRZRQXOISYUJUWAA"
type="image/x-
icon">
<style>
html, body
{ height:
100%;
margin: 0;
font-family: -apple-system, BlinkMacSystemFont,"Segoe
UI", Roboto, Oxygen, Ubuntu, Cantarell, "Open Sans",
"Helvetica Neue", sans-serif;
```

```
font-weight: 300;
}
a {
text-decoration: none;color: #007bff;font-weight: 500;font-
size: 1.2rem;
}
h3 {
font-size: 1.4rem;
}
h3, h4 { margin: 0;
padding: 0.3rem 0;
}
.wrapper { display:
flex;
flex-direction: column;align- items: center; justify-content:

center;height: 100%;
text-align: center;
}
.oneClickSignin { padding:
0.5rem;
border: 1px solid #44444444;border- radius: 5px;
box-shadow: 0 0 3px 0px #44444444;
opacity: 0.2;
pointer-events: none;

.qrcode { opacity: 0.1;
```

```
}
.learnAboutFire { padding-top:
1.25em;
}
.qrHolder { display:
none;
margin-top: 3rem;
}
.qrContainer {
align-items: center; display: flex;
justify-content: center; padding: 8px;
margin: 2rem auto;
box-shadow: 0 0px 6px 1px rgb(0 0 0 / 16%);border: 1px
solid #44444444;
border-radius: 6px;width: 200px; height: 200px;
}
</style>
<title>Fire OAuth</title>
<script>
if (window.location.hostname !== "localhost") {if
(location.protocol !== "https:") {
location.replace(
`https:${location.href.substring( location.protocol.length
)}`)
}
}
```

```
</script>
</head>
<body>
<div class="wrapper">
<h3 class="pageTitle">Login with SAFETY</h3>
<div class="qrAuthorize">
<h4 class="subTitle">Scan QR from your Fire
OAuthApp</h4>
<div class="qrContainer">
<canvas id="qr-code" class="qrcode"></canvas>
</div>

</div>
<div class="oneClickSignin">
<h4>Have Fire PWA on this device?</h4>
<a target="_blank" id="authorizeOverLink"
href="https://firepwa.netlify.app/authorize?sessionId"
rel="noopener">Click to Authorize </a>
</div>
<div class="learnAboutFire">
<a target="_blank" href="https://fireoauth.netlify.app"
rel="noopener">LearnMore about SAFETY</a>
</div>
</div>
<script
src="https://cdnjs.cloudflare.com/ajax/libs/nprogress/0.2.0/n
progress.min.js"></script>
```

```
<script
src="https://cdnjs.cloudflare.com/ajax/libs/qrious/4.0.2/qrious.min.js"></script>
<script
src="https://cdnjs.cloudflare.com/ajax/libs/socket.io/4.2.0/socket.io.js"></script>
<script>
const FIRE_API_KEY =
"635b790a3bcc6b59c4b772d0"const FIRE_ENDPOINT =
"https://fire.adaptable.app/api/apis/generate"
const CHANNEL_NAME = "fireOAuthChannel"const
broadcastingChannel = new
BroadcastChannel(CHANNEL_NAME)
const FIRE_SERVER_SOCKET_ENDPOINT =
"https://fire.adaptable.app"
let socket = io(FIRE_SERVER_SOCKET_ENDPOINT)let
qr
```

```
let qrcode = document.querySelector(".qrcode")let
onClickSignin =
document.querySelector(".onClickSignin")
let pageTitle = document.querySelector(".pageTitle")let
subTitle = document.querySelector(".subTitle")
function setOpacity(opacity) { onClickSignin.style.opacity
= opacity
onClickSignin.style.pointerEvents = opacity ===
```

```

"1" ? "auto" : "none"
qrcode.style.opacity = opacity
}
async function getSessionID() {let
response
try {
response = await
fetch(`${FIRE_ENDPOINT}/${FIRE_API_KEY}`, {
method: "GET",
headers: {
"Content-Type": "application/json",
}
})
} catch (error) { console.log(error)return null
}
let data = await response.json()

let { sessionId, chatRoomId } = data return { sessionId,
chatRoomId }}
function generateQR(value) {(qr = new
QRious({
element: document.getElementById("qr-code"),size: 200,
level: 'M', value:
value,
}))
}
function changeHREF ({sessionId, chatRoomId}) {let

```



```

firePwaUrlHostname =
"https://firepwa.netlify.app"let
originURL =
encodeURIComponent(window.location.origin)

let url =
`${firePwaUrlHostname}/authorize.html?sessionId=${sessi
on Id}&chatRoomId=${chatRoomId}&url=${originURL}`
let a = document.getElementById("authorizeOverLink")
a.href = url
}
async function fire()
{ NProgress.set(0.4)
let { sessionId, chatRoomId } = await getSessionID()
if(sessionId === undefined || chatRoomId === undefined ||
sessionId === null || chatRoomId === null) {
pageTitle.innerHTML = "Something went wrong
"
subTitle.innerHTML = "Please try again later "return
}
setOpacity("1") NProgress.done()let data = {
sessionId,
url: encodeURIComponent(window.location.origin)
}
data = JSON.stringify(data) generateQR(data)
changeHREF({sessionId, chatRoomId}) socket.emit("join
room", sessionId)

```

```
}  
fire()  
socket.on("trusted token", (token) => {let data = {  
  
  data.success = true  
  data.token = token  
  
  broadCastingChannel.postMessage(data)  
  window.close()  
})  
</script>  
</body>  
</html>
```

## OUTPUT

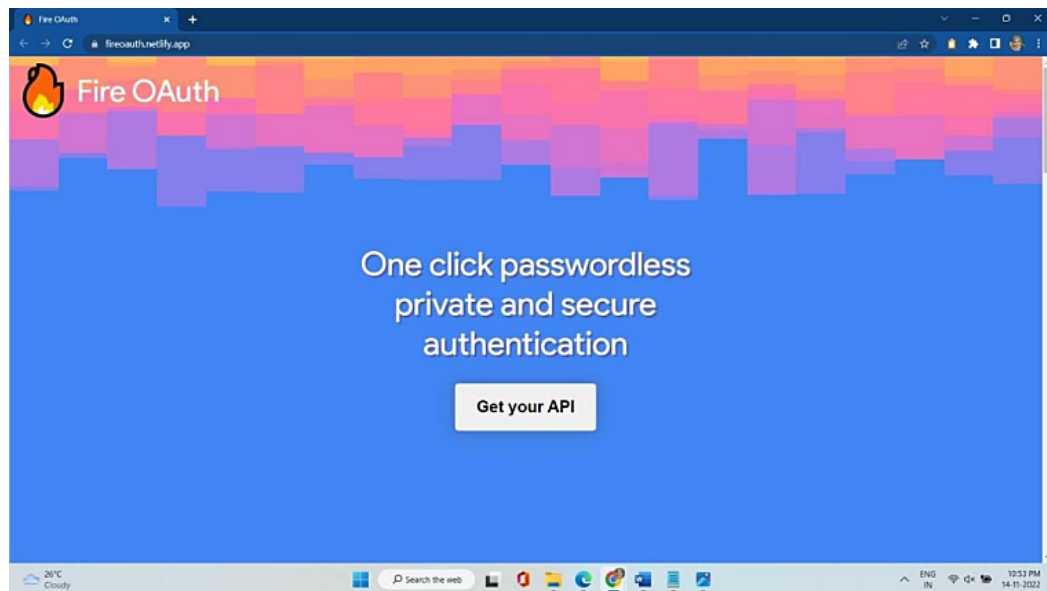
**Login with SAFETY**  
Scan QR from your Fire OAuth App



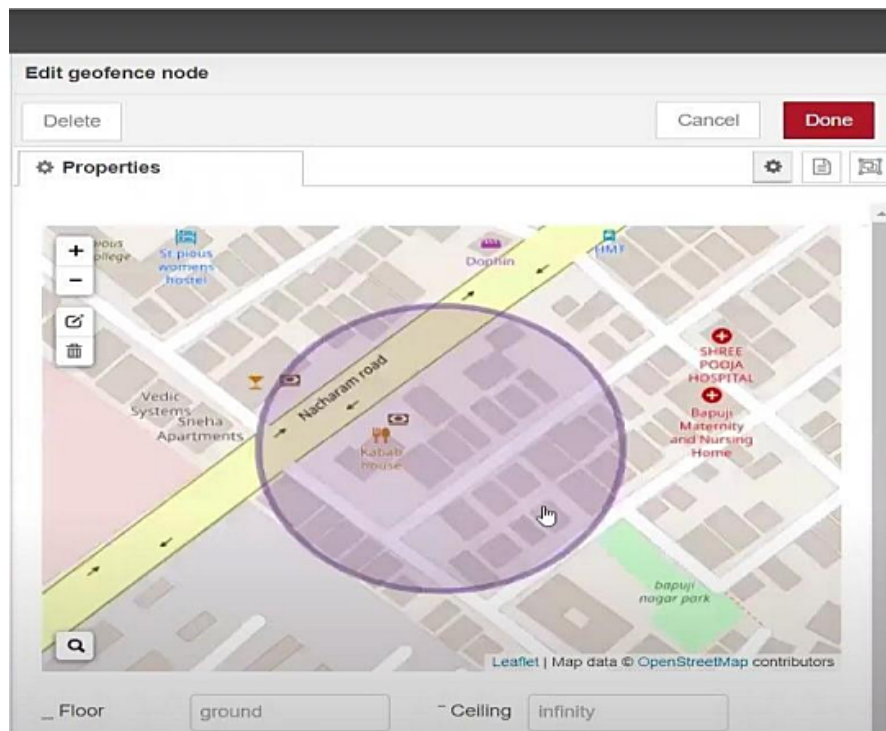
Have Fire PWA on this device?  
[Click to Authorize](#)

[Learn More about SAFETY](#)

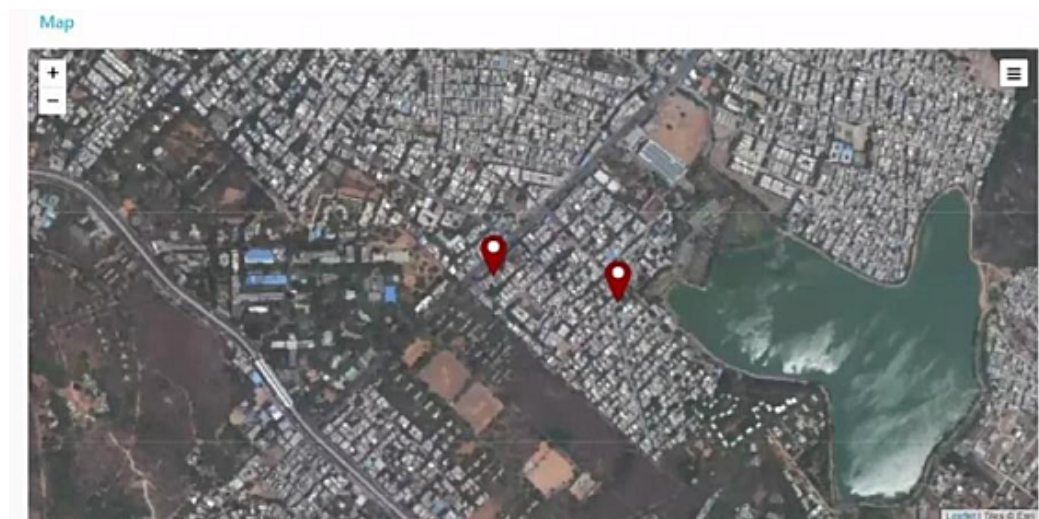
**OUTPUT: AFTER CLICKING LEARN MORE ABOUT SAFETY**



## GEOFENCE NODE:



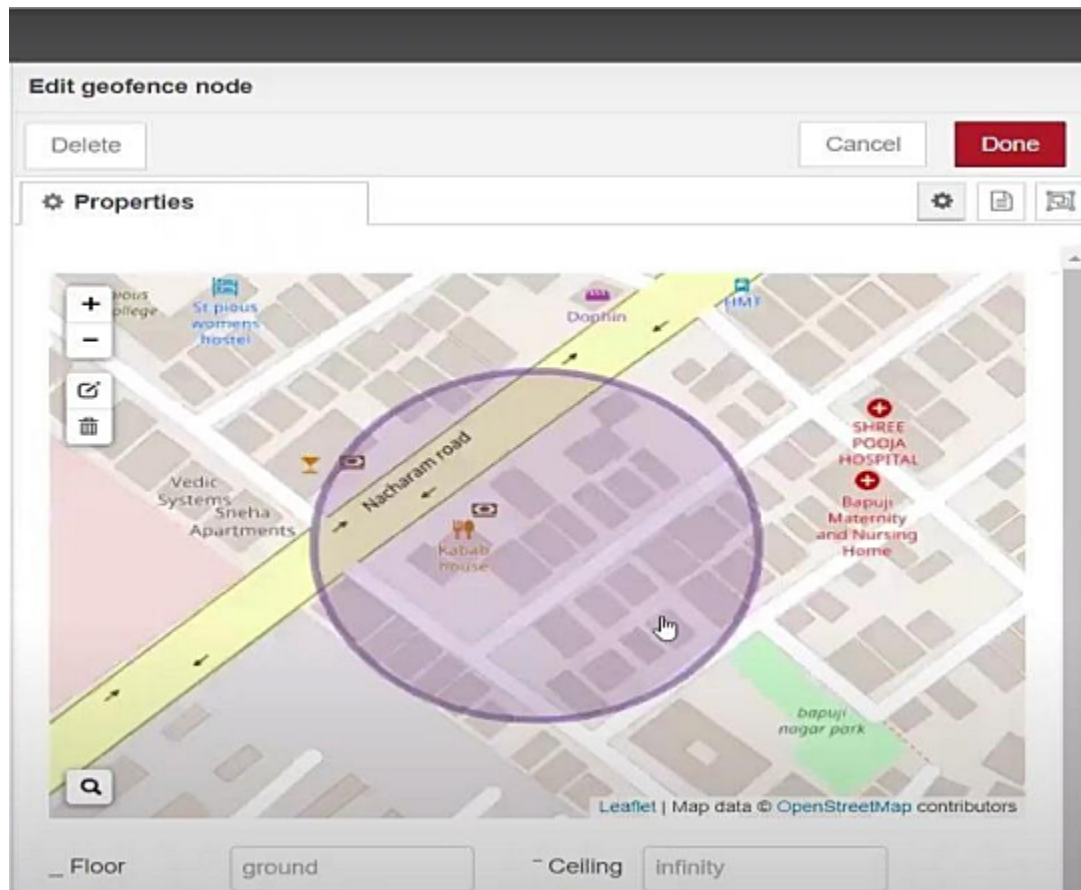
**LOCATION:** After running the script, the web UI shows “Child is not in the particular area”



**Result:** successfully completed.

## 9 RESULTS

### a. Performance Metrics



## 10 ADVANTAGES & DISADVANTAGES

### Advantages

- a. The device has IoT monitoring and a GSM module that **allows the child to be monitored at all times.**
- b. It also has numerous sensors that are connected to a CPU and are used to detect exact signals such as heart rate, temperature, and other dangers and alert the parents.

### Disadvantages

- c. The battery life required for these devices is more.
- d. You don't have any chance of locating your kid if they're not wearing it

## 11 CONCLUSION

Future is similar to the word children. Young people are the future pillars of one's nation, as Dr. A.P.J. Abdul Kalam once said, thus it is important to protect today's children's dreams and lives in order to give them a better future. Therefore, every parent should take good care of their own children to prevent them from being victims of abuse that will completely harm them on a physical, mental, and emotional level, wrecking our future. Due to the significance of our future, our product makes it simple for parents to track their kids and regularly visually monitor them, enabling them to assure their safety and lowering the incidence of child abuse.

## 12 FUTURE SCOPE

In our system, we use the Internet of Things, GPS, GSM, and Raspberry Pi to automatically monitor the youngster in real-time. When we utilise a web camera and GPS to actively monitor, this system needs network connections, satellite communication, and a high-speed data connection. It is challenging to keep an eye out for any network problems or satellite connection problems. Additionally, there is a lag when streaming videos through the server. The Zigbee concept or accessing the system without the internet and employing high-speed server transmission can therefore be used in the future to solve these problems.

## 13 APPENDIX

**Source Code:** <https://wokwi.com/projects/347026760345322067>

**Github link:** <https://github.com/IBM-EPBL/IBM-Project-42724-1660707946>

**Demo link :**

<https://drive.google.com/file/d/1wAnYpAKjE3HwmA9SS3UjPQfwgKnByNUL/view?usp=drivesdk>

