PROJECT REPORT

IBM NALAIYATHIRAN

PROJECT NAME : IOT BASED child safety Gadget FOR CHILD SAFETY MONITORING AND NOTIFICATION

TEAM ID: PNT2022TMID01040

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TEAM MENTOR:MR.SHIBU

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1. INTRODUCTION

Internet of Things (IOT) is the latest technology that connects entire world. It establishes connectivity (through internet) among the various devices or services or systems in order to little by little make automation development in all areas.

Technology is the best way to solve this problem. That's the reason to develop this project that can act as a rescue device and protect at the time of danger. The motivation behind this project is an attempt to focus on a security system that is designed merely to serve the purpose of providing security to child so that they never feel helpless while facing such social challenges.

An advanced system can be built that can detect the location and health condition of child that will enable us to take action accordingly based on electronic gadgets like GPS receiver, GSM, pulse rate sensor, body temperature sensor. We can make use of number of sensors to precisely detect the real time situation of the children in critical situations. The heartbeat of a child in such situations is normally higher which helps make decisions to detect the abnormal motion of the children while she is victimized.

PROJECT OVERVIEW

The device has IoT monitoring and a GSM module that allows the child to be monitored at all times. 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. In the event of a power outage, the wearable serves as a backup. On the device, there is an additional panic button. The purpose of this button is to notify parents and the police of a child's current location whenever they are in a perilous scenario. A GPS module is utilized to access their present location, and a GSM module assists in transmitting the information via SMS to designated contacts. In this approach, the device tries to provide child safety while remaining unobtrusive.

PURPOSE

The major goal of this project is to use modern technology to create a gadget that provides **"Smart Child Safety"** to protect children, which will be far more effective than current methods in assisting victims.

LITERATURE SURVEY :

Literature Survey Based on Iot Based Safety Gadget for ChildSafety Monitoring and Notification

Date	21 October 2022
Team ID	PNT2022TMID01040
Project Name	Project – IoT based safety gadget for child safety-monitoring and notification
Maximum Marks	

Mirjami Jutila, Esko Strömmer, Mari Ervasti, Mika Hillukkala, Pekka Karhula Juhani Laitakari (2015) Safety services for children: a wearablesensor vest with wireless charging

Wearable sensors constitute an increasing market in providing various promising opportunities for improving and controlling safety issues for children in day care and schools. This paper presents the technological enablers and requirements for building a complete end-to-end energy-efficient safety system.Our work introducesa proof-of-concept for a wearable sensor vest with integrated wireless charging, designed to enhance the security of children. The wireless charging takes place in the ordinary repository for the vests, such as in a wardrobe or a coat rack, without requiring any specific actions from the user. The developed sensor vest provides information about the location and well-being of children, based on received signalstrength indication, global

positioning system, accelerometer, and temperature sensors. This paper also discusses the experiences of the “safety service for children” school pilot, which utilized various sensors with end-to-end applications.Piloting and technological implementations are based on a participatory study conducted among children, teachers,and parents, to gain important knowledge and understanding about the real user needs and service system usability requirements

N. Manjunatha , H. M. Jayashree , N. Komal , K. Nayana(2020) : IoT Based SmartGadget for Child Safety and Tracking

This paper is mainly streamed towards child safety solutions by developing a gadget which can be tracked via its GPS locations and also a panic button on gadget is provided to alert the parent via GSM module calling for help. Parental android app is developed to manage and track the device anytime. Smart gadget device is always connected to parental phone which can receive and make phone calls and also receive SMS on gadget via GSM module, also a wireless technology is implemented on device which is useful to bound the device within a region of monitoring range, if device is moving out of monitoring range then an alert will be triggered on binding gadget, this helps you keep a virtual eye on child. Health monitoring system on gadget checking for parameters like heart beat/pulse rate an temperature is included which can be monitored on parental app. Gadget also monitors whether it is plugged on hand or not using contact switch and alert the parent as soon as it is unplugged.

S. Rajalakshmi S. AngelDeborah G. SoundaryaV. Varshitha K. ShyamSundhar (2020) Safety Device for Children Using IoT and Deep Learning Techniques

The safety and security of children is a major problem in the current era. The children are too young to take care of themselves. We cannot monitor the children at all times in school,play area, and outside place.In this paper, we discuss the conceptof child safety device based on Internet of things. The aim of this device is to provide safety to the child by allowing the parent to locate the child and view their surroundings. This device can be used to monitor the temperature and motion of thechild. If any problem persists, the GSM mobile communication

module automatically sends a text message to the parent as SMS. The other features of the device are emergency light and alarm buzzer which are activated when the button ispressed by the child in a distress situation to seek the attention of the bystanders.

The accelerometer and vibration sensors are used to detect the motion of the child. The camera is used to capture the environment of the child. The image taken is processed using conventional neural network (CNN) which predicts the background like play area, railway station, beach, road, or classroom. The GPS module is used to record current location of the device which is used to track the device if the child is missing. Hence, this device provides a security cover to the child in today's time.

REFERENCE

Mirjami Jutila, Esko Strömmer, Mari Ervasti, Mika Hillukkala, Pekka Karhula Juhani Laitakari *Personal and Ubiquitous Computing*

N. Manjunatha H. M. Jayashree N. Komal K. Nayana International Journal of Research inEngineering, Science and Management Volume-3, Issue-6, June-2020.

S. RajalakshmiS. Angel Deborah G. Soundarya V. Varshitha K. Shyam Sundhar Advances in Intelligent Systems and Computing (AISC,volume 1163).

IDEA GATHERING

Date	21October 2022
Team ID	PNT2022TMID01040
Project Name	Project – IoT based safety gadget for child safety-monitoring and notification
Maximum Marks	

ABSTRACT :

The overall percentage of child abuse filed nowadays in the world is about 80%,out of which 74%are girl children and the rest are boys. For every 40 seconds, achild goes missing in this world. Children are the backbone of one's nation, if thefuture of children was affected, it would impact the entire growth of that nation.

Due to the abuse, the emotional and mental stability of the children gets affected whichin turn ruins their careers and future. These innocent children are not responsible for what happens to them. So, parents are responsible for taking care of their children. But, due to economic conditions and aims to focus on theirchild's future and career, parents are forced to crave money. Hence, it becomes difficult to cling to their children all the time. In our system,we provide an environment where this problem can be resolved efficiently. It makes parents easily monitor their children in real-time just by staying beside them as well as focusing on their careers without any manual intervention.

The history of wearable technology:

The origins of wearable technology date back to the 13th century when eyeglasses were first invented. In the 15th century, timepieces were created -- some of which were small enough to be worn -- but it was not until the 1960s that modern wearable technology came into exist.

The future of wearable technology

Wearable technology is becoming increasingly popular and is all set to revolutionize the future. While fitness trackers, smart devices, intelligent clothing,and VR and AR headsets have gained widespread approval, they are only the tip of the iceberg.

EXISTING SYSTEM:

Real-Time Child Abuse and Reporting System In the existing system, we use a voice recognition module in which the alert commands from the child are stored and kept for further reference. If the same child delivers the same command, it will compare with the alertcommand which was previously stored and set an emergency level according to the alert command. The GSM has a SIM which is used to send an alert message or an alert call to trusted peoples.GPS is used to track the live locationand it is used when needed.The serverwill search the respective device ID from the database and search for respective contacts according to that device ID and helps in alerting the registered guardians. The disadvantage of this project are ,

- The child could not produce the exact alert command during a panic condition.
- The command producedmay not match with the previously stored command.
- This project requires manual intervention.

Various forms of safety gadget :

The following is a brief history showcasing the various turns wearable technology has taken

over time :

Reference :

MirjamiJutila, Esko Strömmer, Mari Ervasti, Mika Hillukkala, PekkaKarhulaJuhani Laitakari*Personal and Ubiquitous Computing*

N. Manjunatha H. M. Jayashree N. Komal K. Nayana International Journal of Research inEngineering, Science and Management Volume-3, Issue-6, June-2020

S. RajalakshmiS. Angel DeborahG. SoundaryaV. Varshitha K. ShyamSundharAdvances inIntelligent Systems and Computing (AISC,volume 1163)

IDEATION & PROPOSED SOLUTIONS

EMPATHY MAP

User: End users/customers

Scenario: Child Safety Monitoring and Notification

BRAINSTORMING SESSION

1. DEFINING PROBLEM STATEMENT:

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.

BRAIN STORMING :

3 .GROUP IDEAS:

Based on location:

*GPS device is not very accurate in giving locations. Accuracy problem like sudden jumpsormovements even if the child is placed still.

*As with any GPS enabled device there is risk and concern of hacking which is insecureforthe child.

*The device should be built in such a way that the child’slocation access is only in the handsof the parent/guardian.

Based on data:

*Maintain a record of the child's-location

*Ensure a secure database

*Geo fencing child's location

4. PRIORITIZE :

IdeationPhase

Define the Problem

Statements

Date	19 September 2022
Team ID	PNT2022TMID01040
Project Name	Project – Child Safety Gadget
Maximum Marks	2 Marks

Problem Statement (PS)	I am (Customer)	I'm trying to	But	Because	Which makesme feel
PS-1	A Parent	Monitor my child's condition	Information can't be tracked persistent	Device turned off(low battery)	concerned
PS-2	A Parent	Locate my child's location	Accuracy problem causes	GPS antenna do not have potential to send strong signals in that location	Tensed

Project Design Phase-I

Date	24 September 2022
Team ID	PNT2022TMID01040
Project Name	Project – IoT (Child safety gadget)
Maximum Marks	2 Marks

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	Child safety and tracking is major significant as number of crimes on children occurs. hence parents are more concerned on their kids.
2.	Idea / Solution description	A smart IoT device for child safety and tracking is developed to help the parents to locate and monitor their children. Device is interfaced with temperature, heartbeat, touch sensors and also GPS, GSM & digital camera modules. Using this device parents can easily observe their children.
3.	Novelty / Uniqueness	The system automatically alerts the parents via message whenever the child is out of safety zone and sends another notification if the child comes under the safety zone. Panic button is placed in the device in order to alerts the parents if the child is in danger;
4.	Social Impact / Customer Satisfaction	This mechanism makes parents confident on their child safety and makes children feel secured.
5.	Business Model (Revenue Model)	This device is weightless, accessible, compatible and is useful for the customers. so it increases the revenue of the business.
6.	Scalability of the Solution	The ability to support an increasing number of connected devices, users, application features, and analytics capabilities, without any degradation in the quality of

service.

proposed solution fit :

Project Title: IoT Based Safety Gadget for Child Safety Monitoring and Notification

Project Design Phase-I - Solution Fit Template **Team ID:** PNT2022TMID01040

Define CS, fit into

1.CUSTOMER SEGMENT(S) CS
Who is your customer?
Working parents of (0-5)years kids.

6. CUSTOMER CONSTRAINTS CC
What constraints prevent your customers from taking action or limit their choices of solutions?
limited CPU,memory and power resources,security constraints,health issues,accuracy problem,poor data

5. AVAILABLE SOLUTIONS AS
Which solutions are available to the customers when they face the problem or need to get job done that they have tried in past?Pros and cons?
Detecting and preventing machine failures,Standards and intelligent analysis of actions,improve security issues,

Explore AS, differ

Focus on J&P, tap into BE, understand RC

2. JOBS-TO-BE-DONE / PROBLEMS J&P
Which jobs-to-be-done (or problems) do you address for your customers?
IMPROVE SAFETY AND SECURITY,DON'T RELY ON CLOUD TECHNOLOGIES,UPDATE YOUR IoT DEVICE REGULARLY,consider security solution and tools

9. PROBLEM ROOT CAUSE RC
What is the real reason that this problem exists?what is the back story behind the need to this job?
Escalated cyberattacks,malware,vulnerabilities,complex environments,5G connectivity,heavy use of GPS.

7.BEHAVIOUR BE
What does your customer do to address the problem and get the job done?
Portable browsers and proxy sites to address the issues of the customers directly and develop a customer centric culture, collect feedback regularly to avoid problems

Focus on J&P, tap into BE, understand RC

Identify strong TR & EM

3. TRIGGERS TR
What triggers customers to act?
seeing their neighbour monitoring their child , need to be proactive

10. YOUR SOLUTION
By avoiding technical difficulties and data interrupt child can be located accurately and precise condition can be monitored SL

8.CHANNELS OF BEHAVIOUR CH
8.1 ONLINE
Contact the support team and they can use the functionality guideline video to correct the malfunction and by directly giving feedback

8.2 OFFLINE
Use the manual to effective use of gadget and correct the malfunctions

Identify strong TR & EM

4. EMOTIONS: BEFORE / AFTER EM
Anxious,worried,lost, insecure > confident, ease,calmness,relaxed.

Project Design Phase-II

REQUIREMENT ANALYSIS

Date	13 October 2022
Team ID	PNT2022TMID01040
Project Name	IoT Based Safety Gadget for Child Safety Monitoring and Notification
Maximum Marks	4 Marks

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	Registration through Form Registration through Gmail Registration through LinkedIN
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	App installation	Installation through link Installation through play store
FR-4	Location History	Used to detect the location precisely Point –to-point location can be seen in the app

FR-5	GPS tracking	In order to track the location, GPS module needs to be implemented.
FR-6	Battery Life	Since the gadget works on the basis of battery life, the life of the battery should be long lasting. So the main aim is to provide additional battery(spare),which is used when they forgot to charge the battery

Non-functional Requirements:

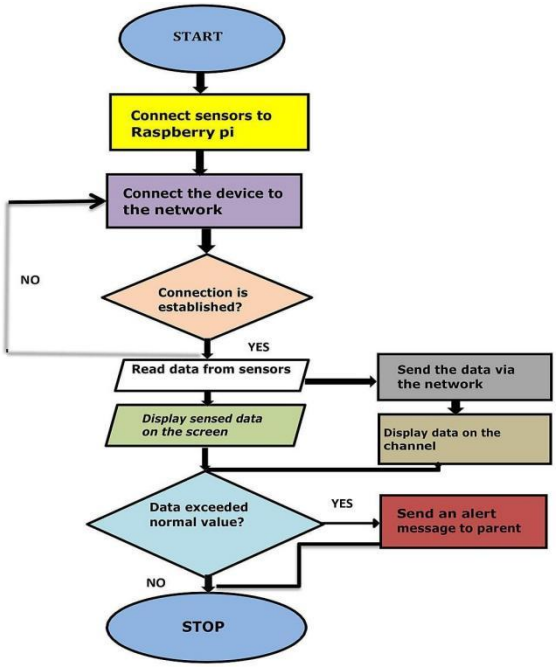
Following are the non-functional requirements of the proposed solution.

NFR No.	Non-Functional Requirement	Description
NFR-1	Usability	Since it uses GSM, which helps to inform the current situation and danger accurately and immediately to parents.
NFR-2	Security	Provides assurance to parents(specially working parents)about the security of their child Develop the parents to monitor and locate the location of the child
NFR-3	Reliability	Easy to access and to use Easy to handle Portable

NFR-4	Performance	Instance notification is sent to the child's parent immediately Location of the child is stored for the future use
NFR-5	Availability	Amber alert GPS Accessing of location
NFR-6	Scalability	Gives more confident to the parents about child safety Easily approaching the child with the help of GSM

PROJECT DESIGN
Data Flow Diagram

Date	20 October 2022
Team ID	PNT2022TMID01040
Team Leader	Ms.Keerthana.K
Team Member	Ms.Madhumitha.G MS. Durga Devi.T Ms. Kavya.M
Project Name	IoTased safety gadget child monitoring and notification
Maximum Marks	4

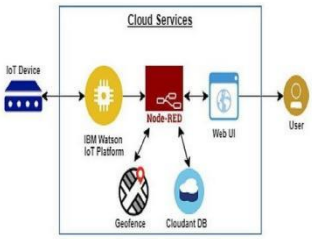


TECHNOLOGY ARCHITECTURE

Technology Stack(Architecture & Stack)

Date	20 October 2022
Team ID	PNT2022TMID01040
Project Name	Project – IOT based safety gadget for child safety monitoring and notification
Maximum Marks	4 Marks

TECHNICAL ARCHITECTURE :



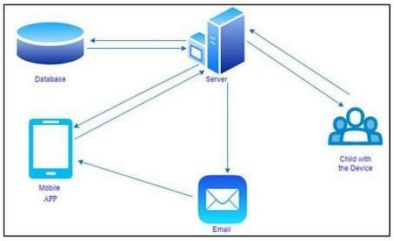


Table-1 : Components & Technologies:

S.No	Component	Description	Technology
1.	User Interface	The communication protocol being used in the proposed solution might act as an interface theway like WiFi, 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 thechild	IBM WatsonSTT service, pythonetc
3.	Database	Data to be segregated and secured in the form of relational DBMS	MySQL
4.	Cloud Database	IBM	IBM Cloud ant
5.	File Storage	File storage requirements	IBM Block Storage or Other StorageService or Local File system
6.	External API-1	To access the children location	GPS location monitoring etc
7.	Infrastructure (Server / Cloud)	Application Deployment on Local System / CloudLocal ServerConfiguration	Cloud Foundry

Table-2: 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 designdevelopement
2.	Security Implementations	The developed application should be accessible in the way it can only respond to the comments ofthe relevant users	Encryptions, IAM Controls.
3.	Scalable Architecture	The app format comes the way easier to handleand operate.	Yet to be done
4.	Availability	The developed solution tends to be available in themarket at any time	Yet to be done
5.	Performance	Highly proper and betterment functionalities are tobe ensured in the designed solution	Yet to be done

USER STORIES

User Stories

Use the below template to list all the user stories for the product.

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer (Mobile user)	Registration	USN-1 (FATHER)	As a user, I can register by entering my email, and password, and confirming my password. I can access the location of my children using the credentials provided as a Father.	I can access my account/dashboard and receive a confirmation email & click confirm	High	Sprint-1
		USN-2 (MOTHER)	As a user, I can register by entering my email, and password, and confirming my password. I can access the location of my children using the credentials provided as a Mother.	I can access my account/dashboard and receive a confirmation email & Clickconfirm	High	Sprint-1
		USN-3 (GUARDIAN/ CARETAKER)	As a user, I can also monitor the children's activities using a safety gadget monitoring system.	I can access my account/dashboard and receive confirmation email & click confirm	Medium	Sprint-1

	Login	USN-4	As a user, I can log into the application by entering My email & password.	I can access my account / dashboard.	Medium	Sprint-2
	Dashboard	USN-5	As a user, I can fix the geofence for my child's location so that I will receive alerts if my child crosses the geo-fence.	I can monitor the current location of my child.	High	Sprint-2
Customer (Web user)	Registration	USN-1 (FATHER)	As a user, I can register by entering my email, and password, and confirming my password. I can access the location of my children using the credentials provided as a Father.	I can access my account/dashboard and receive a confirmation email & click confirm	High	Sprint-1
		USN-2 (MOTHER)	As a user, I can register by entering my email, and password, and confirming my password. I can access the location of my children using the credentials provided as a Mother.	I can access my account/dashboard and receive a confirmation email & click confirm	High	Sprint-1
		USN-3 (GUARDIAN/ CARETAKER)	As a user, I can also monitor the children's activities using a safety gadget monitoring system.	I can access my account/dashboard and receive a confirmation email & Clickconfirm	Medium	Sprint-1

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User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
	Login	USN-4	As a user, I can log into the application by entering my email & password.	I can access my account/dashboard.	Medium	Sprint-2
	Dashboard	USN-5	As a user, I can fix the geofence for my child's location so that I will receive alerts if my child crosses the geofence.	I can monitor the current location of my child.	High	Sprint-2
Customer Care	Dashboard	USN-6	As a customer care service person, whenever I receive a complaint, I forward the complaint and ensure that the complaint is resolved.	I can keep track of all the complaints and the status of the complaints received.	Medium	Sprint-3
Administrator	Admin Dashboard	USN-7	As an administrator, I will take care of all the payment processes, queries and complaints, and login credentials.	I can access all the customer details, payment details, and complaints received.	High	Sprint-4

CUSTOMER JOURNEY MAP

IOT BASED SAFETY GADGET FOR CHILD SAFTEY MONITORING AND NOTIFICATION

SCENARIO

To continuously moniter the child's location and alert when the child is in danger

	Entice	Enter	Engage	Exit	Extend
	How does someone initially become aware of this process?	What do people experience as they begin the process?	In the core moments in the process, what happens?	What do people typically experience as the process finishes?	What happens after the experience is over?
Steps What does the person (or group) typically experience?	Searching for a gadget that accurately locate and monitor the child Visit website or app Choose a convenient device,age of child and other details Browse available features View detail on available resources	Start purchasing the gadget Complete payment information Confirm payment & buy gadget Contact details confirmation Gadget delivery details, guidance manual, reference video	Size at scheduled delivery date Read the guidelines Experience the gadget performance	Protect the gadget Permit for review Writing & submitting review	Personalized recommendations Alert parents
Interactions What interactions do they have at each step along the way? * **People:** Who do they see or talk to? * **Places:** Where are they? * **Things:** What digital touchpoints or physical objects would they use?	Interacting with child Parents can create safe zones by including all the usual places that the child visits everyday and gets an alert if the device is somewhere else	establish the geofence for child safety	The caretakers or the parents or the guardians conditions and requirements regarding the child safety are met	The application sends a notification stating the location of the child and the parents can utilize it to know the whereabouts of the child.	The location verification and constant monitoring are turned off when the GPS turns off or the internet is not available from the device user's side
Goals & motivations At each step, what is a person's primary goal or motivation? ("Help me..." or "Help me avoid...")	The purpose of this device is to help parents locate their children with ease	The parent can send a text with specific keywords such as "LOCATION", "TEMPERATURE" "UV", "BUZZ" etc. the device will reply back with a text containing the real time accurate location of the child	Frequent updates and bug fixes in order to provide the desired result	Notifies when child crosses geofence	The child's safety is ensured and the device is kept safe.
Positive moments What steps does a typical person find enjoyable, productive, fun, motivating, delightful, or exciting?	When a missing child is found.	Regular updates and user friendly	Upon successfully detecting the location of the child , the parents are tension-free and relaxed	Successful logout	Satisfied that the child is safe
Negative moments What steps does a typical person find frustrating, confusing, angering, costly, or time-consuming?	Alert sound is not given GPS location is not tracked properly	Message along with notification not sent	Regular updates not delivered	Unsuccessful logout	Parents or guardians find the process to be a little hassle as it is a long process
Areas of opportunity How might we make each step better? What ideas do we have? What have others suggested?	In absence of caretaker	Alternate options if message not sent	Automatically monitor the child in real time using Internet of Things with the help of GPS,GSM,Raspberry Pi	The gadget automatically alerts the parent/caretaker by sending SMS, when immediate attention is required for the child during emergency.	With the use of child safety GPS, there are features such as critical alerts, voice surveillance and instant communication via messages.

Project Planning Phase

Project Planning and scheduling (ProductBacklog, Sprint Planning, Stories, Story points)

Date	03 November 2022
Team ID	PNT2022TMID01040
Project Name	Project - IoT Based SafetyGadget for Child Safety Monitoring & Notification
Maximum Marks	8 Marks

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

Use the below template to create productbacklog and sprint schedule

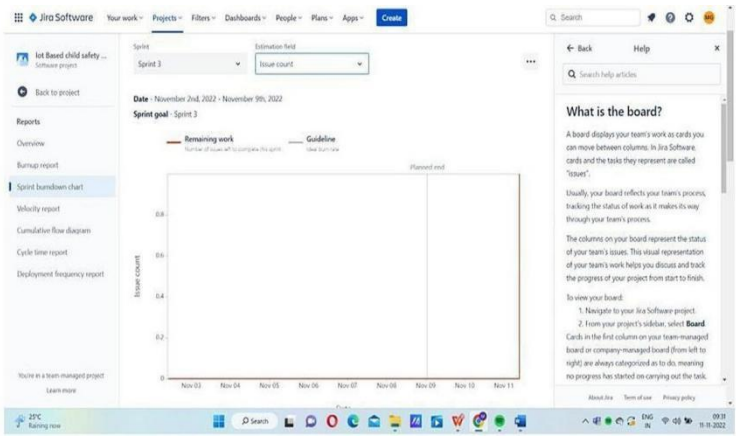
Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Registration	USN-1	As a parent/guardian, I can register for the application by entering my email, and password, and confirming my password.	2	High	Durga Devi.T
Sprint-1	User confirmation	USN-2	As a parent/guardian, I will receive a confirmation email once I have registered forthe application	1	High	Kavya.M
Sprint-2		USN-3	As a parent, I will receive the connection, andlocation in SMS/mail once I have entered the application.	1	High	Keerthana. K
Sprint-1		USN-4	As a parent/guardian, I can register for the application through Gmail	2	Medium	Madhumitha.G
Sprint-1	Login	USN-5	As a parent, I can log into the application byentering email & password	1	High	Keerthana.K

Project Tracker,Velocity & BurndownChart: (4 Marks)

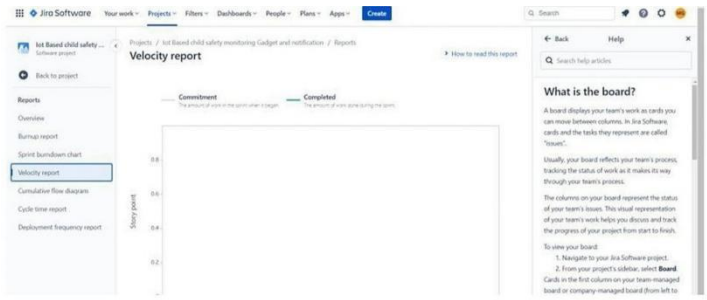
Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on PlannedEnd Date)	Sprint Release Date (Actual)
Sprint-1	20	4 Days	24 Oct 2022	27 Oct 2022	20	29 Oct 2022
Sprint-2	20	5 Days	28 Oct 2022	01 Nov 2022	20	04 Nov 2022
Sprint-3	20	8 Days	02 Nov 2022	09 Nov 2022	20	11 Nov 2022
Sprint-4	20	9 Days	10 Nov 2022	18 Nov 2022	20	19 Nov 2022

JIRA SOFTWARE :

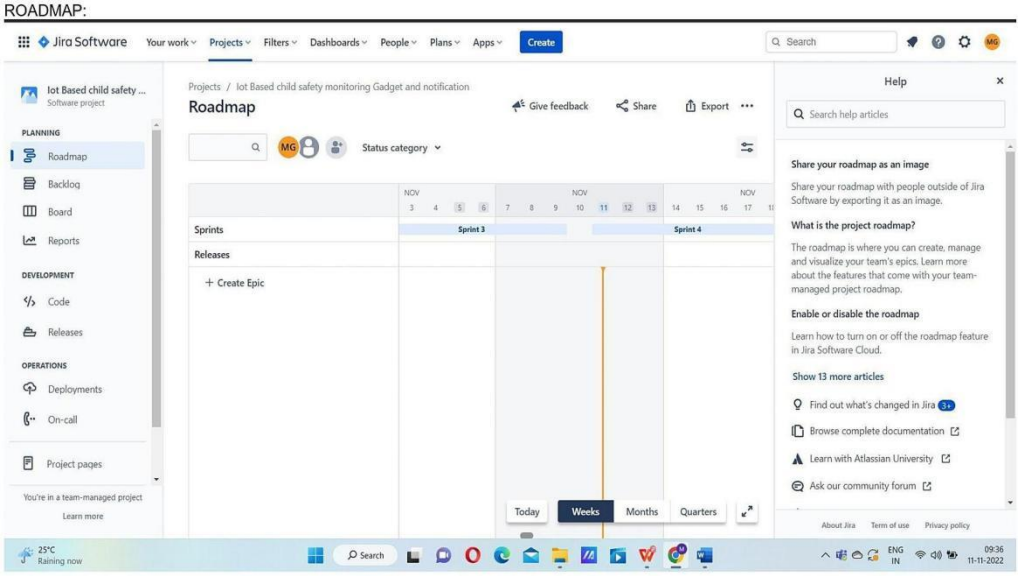
SPRINT BURNT REPORT :



VELOCITY REPORT :



ROADMAP:


Jira Software
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Dashboards
People
Plans
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Roadmap
Backlog
Board
Reports
DEVELOPMENT
Code
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What is the project roadmap?
The roadmap is where you can create, manage and visualize your team's epics. Learn more about the features that come with your team-managed project roadmap.
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11-11-2022

CODING AND SOLUTIONS

SPRINT 1 [REGISTRATION AND LOGIN]

```
<!DOCTYPE html>

<html lang="en">


<head>

   <meta charset="UTF-8">

   <meta http-equiv="X-UA-Compatible" content="IE=edge">

   <meta name="viewport" content="width=device-width, initial-scale=1.0">

   <link rel="stylesheet" href="/css/login.css">

   <title>Sign Up</title>

   <script>

      if (window.location.hostname !==

         "localhost") {if (location.protocol !==

         "https:") {

            location.replace(

               `https:${location.href.substrin
g(location.protocol.length
)}`

            )

       }
```

```
    }
  </scri
    pt>
  <script src="./localforage.js"></script>
</head>

<body>
  <div class="wrapper">
    <div class="loginContainer">
      <span>Don't have an account?Sign up</span>
      <divclass="traditionalLoginContainer">
        <form class="signupForm" action="/" method="post">
          <input type="text" name="firstName" placeholder="First Name" id="firstName"><br>
          <input type="text" name="lastName" placeholder="Last Name" id="lastName"><br>
          <input type="text" name="username" placeholder="User Name" id="username"><br>

          <input type="radio">male<br>
          <input type="radio">female<br>
          <input type="email" name="email" placeholder="Email" id="email"><br>
          <input type="password" name="password" placeholder="Password" id="password"><br>
          <input type="phone number" name="phone number" placeholder="Phone number"
id="phonenumber"><br>
          <input class="loginButton" type="submit" value="Sign Up">
        </form>
      </div>
      <div class="loginWithFireContainer">
```

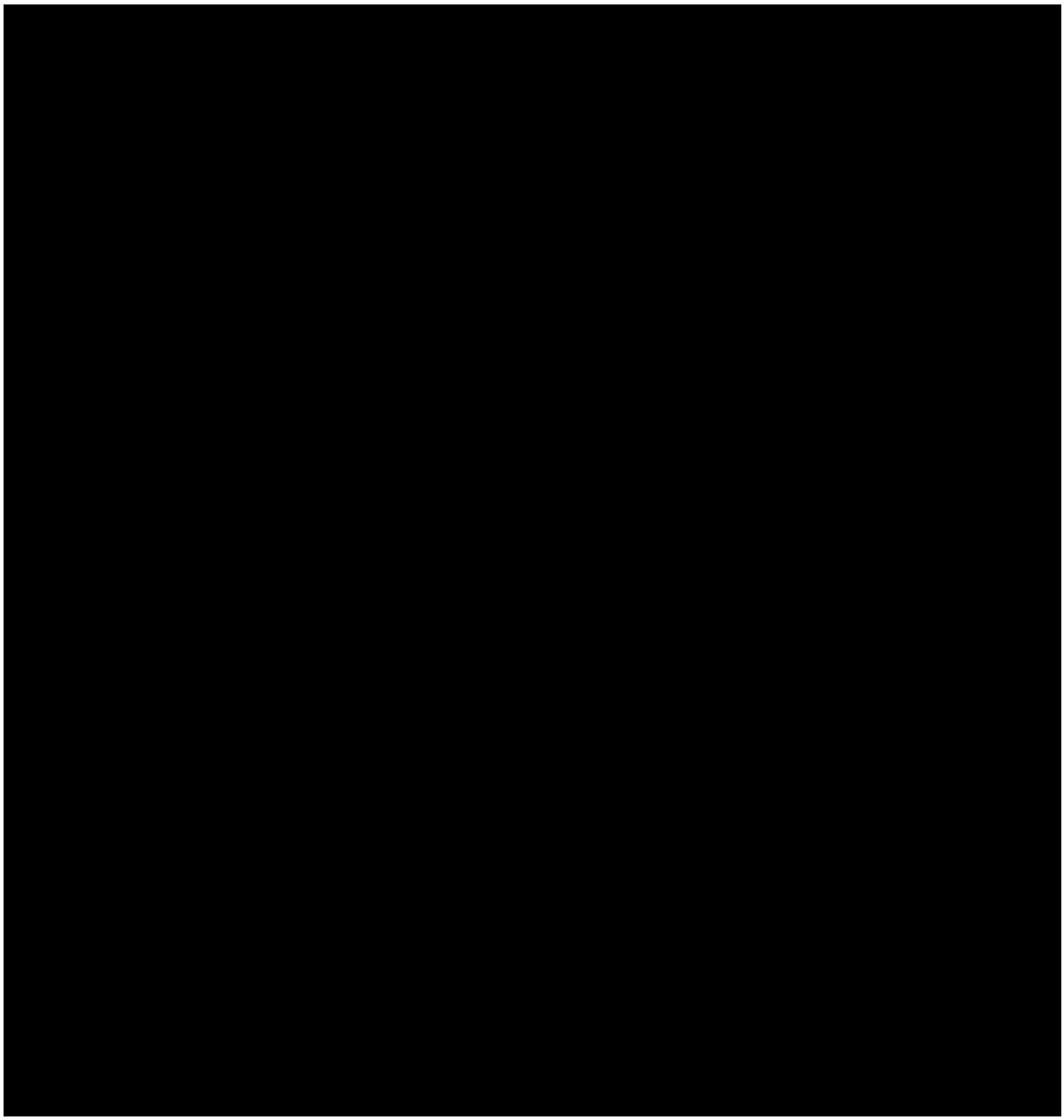
```
        </div>
        <aclass="hyperLink" href="<”https://appinventor.mit.edu/”>Account already exists? Login -></a>
    </div>
</div>
<script>
    // Necessary for Fire OAuth to Function
    const fireBroadcastingChannel = new
    BroadcastChannel('fireOAuthChannel');
    fireBroadcastingChannel.addEventListener('message', async event => {
        let data = event.data
        /**
1. @typedef {Object<string, any>}Data
2. @property {boolean} success - Whether the login was successful
3. @property {string} token - The data returned from the login i.e. Fire Token
         */
        // data.token is the messagesent from the fireOAuthChannel after verification
        // data.success is a booleanthat indicates whetherthe verification was successful
        // data.token is the fire token
        // What to do with the Fire Token?
        // * Fire Token is an unique token which uniquely identifies the user who authorized your login
        attemptwith Fire
        // * You can use this token ONLY ONCE as it will be destroyed after the first use
        // 1. Send the fire token to the Fire Server to verify the user
        // - You can do that client sided or server sided
        // - You need to send a POST Request to the Fire Server with the fire token
```

```
// at the URL: http://localhost:3003/api/tokens/verify
// - The Fire Server will verify the fire token and return a response
// - If the verification was successful - CODE (200), the Fire Server will return a response with
theuser 's data
// - If the verification was unsuccessful - CODE (400) or CODE (401), the Fire Server will
return aresponse with an error 'message'
// - You can use the data returned from the Fire Server to create a new user in your database
// This example will send the token to Fire Servers and console.log the response
console.log("%c" + `Fire Token: ${data.token}`, `color: #f1c40f; font-weight:
bold;`);constresponse =
awaitfetch('https://fire.adaptable.app/api/tokens/verify', {
   method:
   'POST',
   headers: {
      'Content-Type': 'application/json'
   },
   body:
      JSON.stringify({t
      oken: data.token
   })
})
// get the response
const responseData = await response.json()
// console.log the
response
console.log(responseDat
a)
```

```
    await localforage.setItem('userData', {
        ...responseData,isFire:true
    })
    // Adding the user data to the user Database
    let database = await
    localforage.getItem("userDatabase")if (database ==
    null) {
        database = []
    }
    database.push(responseData)
    awaitlocalforage.setItem("userDatabase", database)
    // redirect to the home
    pagewindow.location.href
    = '/'

})


function popupwindow(url, title, w,
    h) {var left = (screen.width / 2) - (w
    / 2); var top = (screen.height / 2) -
    (h / 2);
    return window.open(url, title, 'toolbar=no, location=no, directories=no, status=no, menubar=no,
        scrollbars = no, re-sizable = no, copyhistory = no, width= '+w+', height= '+h+', top = '+top+', left =
        '+left);
    }
    document.getElementById("fire").addEventListener("click",
        function() {popupwindow("/fireoauth.html", "Fire OAuth", 450,
```

```
            600)
        })
    </script>
    <script>
        // this.Website's Scripts / App Logic
        document.querySelector(".signupForm").addEventListener("submit", async(e) => {
            e.preventDefault()
            let firstName =
            document.getElementById("firstName").valuelet lastName
            = document.getElementById("lastName").value let
            username = document.getElementById("username").value
            let email = document.getElementById("email").value
            let password= document.getElementById("password").value
            let profilePic =
`https://avatars.dicebear.com/api/adventurerneutral/${firstName}${lastName}.svg?backgroundColor=variant0
            1` let data = {
                firstNa
                me,
                lastNam
                e,
                userna
                me,ema
                il,
                passwo
                rd,
                profileP
                ic
            }
```

```
        awaitlocalforage.setItem("userData", data)
        let database = await
        localforage.getItem("userDatabase")if (database ==
        null) {
           database = []
        }
        database.push(data)
        await localforage.setItem("userDatabase",
        database)window.location.href = "/"
      })
    </script>
 </body>
</html>
```



TEAM ID	PNT2022TMID01040
PROJECT NAME	IOT based safety gadget for child safety monitoring and notification
TEAM MEMBERS	K.KEERTHANA T.DURGA DEVI G.MADHUMITHA M.KAVYA

DELIVERY OF SPRINT 2

Creating IBM Cloud Service and IBM WATSON IoT PLATFORM:

Creating and Connecting IBM cloud for Project and Python Code

```
import

timeimport

sys

importibmiotf.application

import ibmiotf.device

import random

#Provide your IBM WatsonDevice Credentialsorganization =

"0pycss"

deviceType = "weather_Device1"

deviceId= "weather_deviceid"

authMethod = "token"


authToken = "(j!jK*nvh9OKQD9!dJ"

#api  key  {a-illza1-mbdxqo6z0s} #api

token {zSYzISuAWF&F_x7GkT}try:

 deviceOptions = {"org": organization, "type": deviceType, "id": deviceId, "auth-method":authMethod,
"auth-token": authToken}

 deviceCli  =  ibmiotf.device.Client(deviceOptions)

#.....

except Exceptions e:

 print("Caughtexception connecting device:%s" %
```

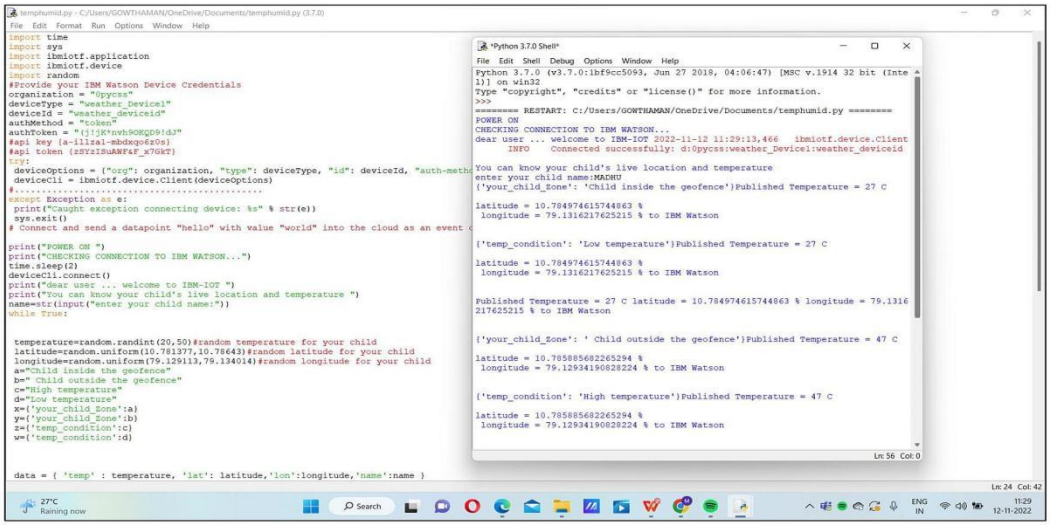
```
 str(e))sys.exit()

# Connect and send a data point "hello" with value "world" into the cloud as an event oftype



print("POWERON ")

print("CHECKING CONNECTION TO IBM WATSON. ")

time.sleep(2)

deviceCli.connect()

print("dear user….. welcome to IBM-IOT ")

print("You can know your child's live location and temperature

")name=str(input("enter your child name:"))

while True:



 temperature=random.randint(20,50)#random temperature for your child

 latitude=random.uniform(10.781377,10.78643)#random latitude for your child

 longitude=random.uniform(79.129113,79.134014)#random longitudefor your childa="Child inside

 the geofence"

 b=" Child outside the geofence"

 c="High temperature"
```

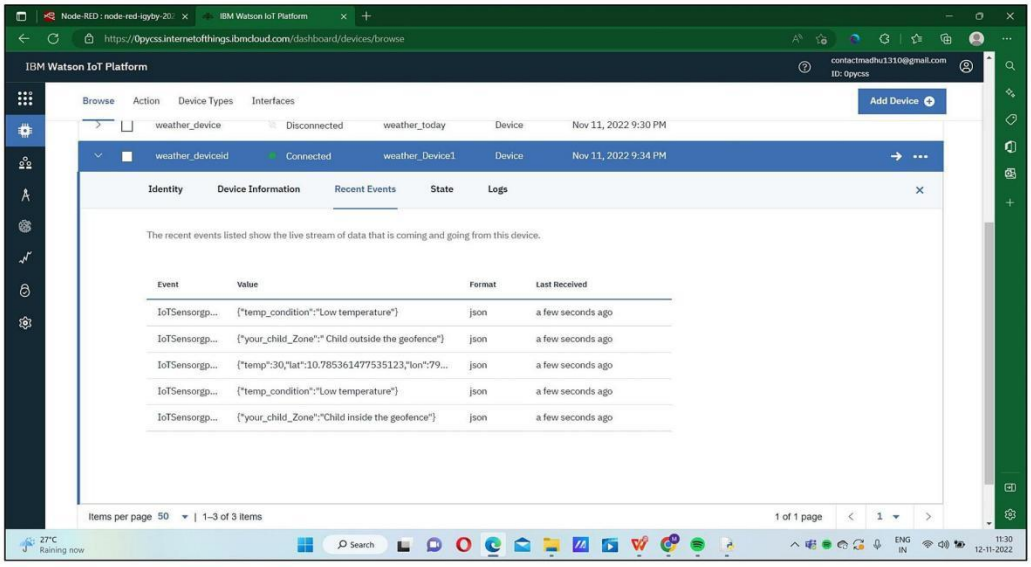
```
 d="Low temperature"

 x={'your_child_Zone':a}

 y={'your_child_Zone':b}

 z={'temp_condition':c}

 w={'temp_condition':d}




 data = { 'temp' : temperature, 'lat':latitude,'lon':longitude,'name':name}#print

 data

 def  myOnPublishCallback():

   print ("Published Temperature = %s C"% temperature, "latitude = %s %%"% latitude,"longitude =
%s %%" % longitude,"to IBM Watson")

   print("\n")

 success = deviceCli.publishEvent("IoTSensorgpsdata", "json", data, qos=0,
on_publish=myOnPublishCallback)

 if latitude>=10.78200 and latitude<=10.786000 and longitude >=79.130000 andlongitude
<=79.133000:


deviceCli.publishEvent("IoTSensorgpsdata","json",data=x,qos=0,on_publish=myOnPublis hCallback)

   print(x)

   print("\n
```

```
    ")
  else:


deviceCli.publishEvent("IoTSensorgpsdata","json",data=y,qos=0,on_publish=myOnPublis hCallback)
   print(y)
   print("\n
   ")


  if (temperature>35):


deviceCli.publishEvent("IoTSensorgpsdata","json",data=z,qos=0,on_publish=myOnPublis hCallback)
       print(z)
       print("\n
       ")
  else:


deviceCli.publishEvent("IoTSensorgpsdata","json",data=w,qos=0,on_publish=myOnPublis hCallback)
```

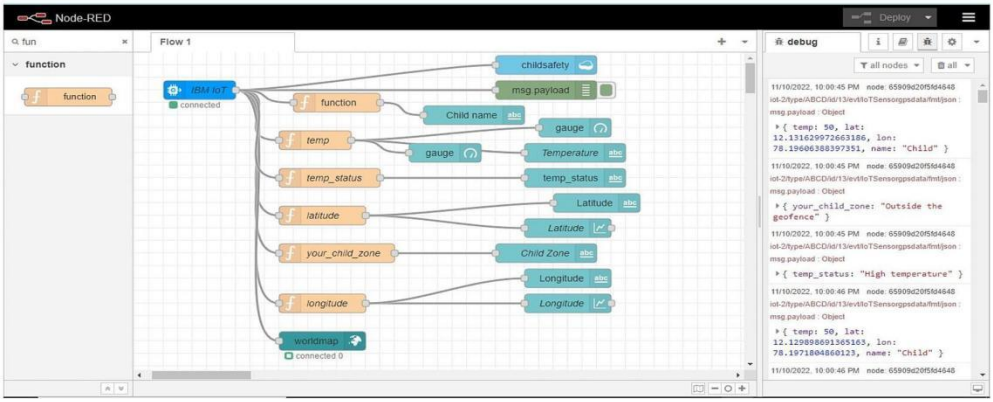
```
        print(w)
        print("\n
        ")


    if not success:
        print("Not connected to IoTF")
        print("\n")
    time.sleep(3)
# Disconnect the device and application from the
clouddeviceCli.disconnect()
```

CONNECTING IBM WATSON AND PYTHON CODE :

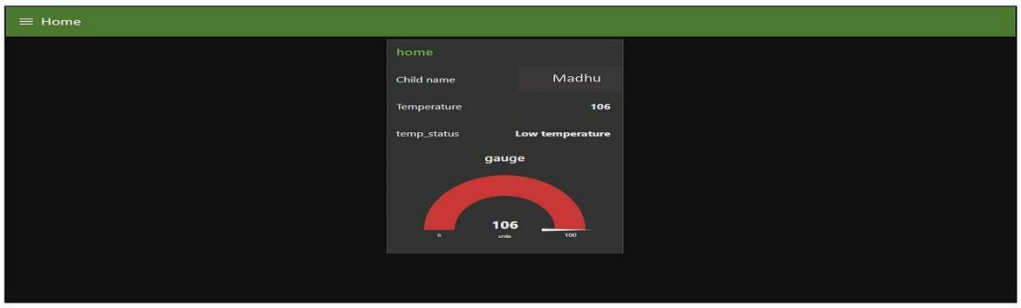

temphumid.py - C:/Users/GOWTHAMAN/OneDrive/Documents/temphumid.py (3.7.0)
File Edit Format Run Options Window Help
import time
import sys
import ibmiotf.application
import ibmiotf.device
import random
#Provide your IBM Watson Device Credentials
organization = "0pycss"
deviceType = "weather_Device1"
deviceId = "weather_deviceid"
authMethod = "token"
authToken = "(j!jK*nvh9OKQD9!dJ"
#api key (a-illzal-mbdxgo6z0s)
#api token (zSYzISuAWf4f_x7GKT)
try:
deviceOptions = {"org": organization, "type": deviceType, "id": deviceId, "auth-meth
deviceCli = ibmiotf.device.Client(deviceOptions)
#..
except Exception as e:
print("Caught exception connecting device: %s" % str(e))
sys.exit()
# Connect and send a datapoint "hello" with value "world" into the cloud as an event
print("POWER ON ")
print("CHECKING CONNECTION TO IBM WATSON...")
time.sleep(2)
deviceCli.connect()
print("dear user ... welcome to IBM-IOT ")
print("You can know your child's live location and temperature ")
name=str(input("enter your child name:"))
while True:
temperature=random.randint(20,50)#random temperature for your child
latitude=random.uniform(10.781377,10.78643)#random latitude for your child
longitude=random.uniform(79.129113,79.13414)#random longitude for your child
a="Child inside the geofence"
b=" Child outside the geofence"
c="High temperature"
d="Low temperature"
x={'your_child_Zone':a}
y={'your_child_Zone':b}
z={'temp_condition':c}
w={'temp_condition':d}
data = { 'temp' : temperature, 'lat': latitude,'lon':longitude,'name':name }
Ln: 24 Col: 42
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:06:47) [MSC v.1914 32 bit (Inte
l)] on win32
Type "copyright", "credits" or "license()" for more information.
>>>
======== RESTART: C:/Users/GOWTHAMAN/OneDrive/Documents/temphumid.py ========
POWER ON
CHECKING CONNECTION TO IBM WATSON...
dear user ... welcome to IBM-IOT 2022-11-12 11:29:13,466 ibmiotf.device.Client
INFO Connected successfully: d:0pycss:weather_Device1:weather_deviceid
You can know your child's live location and temperature
enter your child name:MADHU
{'your_child_Zone': 'Child inside the geofence'}Published Temperature = 27 C
latitude = 10.784974615744863 %
longitude = 79.1316217625215 % to IBM Watson
{'temp_condition': 'Low temperature'}Published Temperature = 27 C
latitude = 10.784974615744863 %
longitude = 79.1316217625215 % to IBM Watson
Published Temperature = 27 C latitude = 10.784974615744863 % longitude = 79.1316
217625215 % to IBM Watson
{'your_child_Zone': ' Child outside the geofence'}Published Temperature = 47 C
latitude = 10.785885682265294 %
longitude = 79.12934190828224 % to IBM Watson
{'temp_condition': 'High temperature'}Published Temperature = 47 C
latitude = 10.785885682265294 %
longitude = 79.12934190828224 % to IBM Watson
Ln: 56 Col: 0
27°C
Raining now
Search
ENG
IN
11:29
12-11-2022

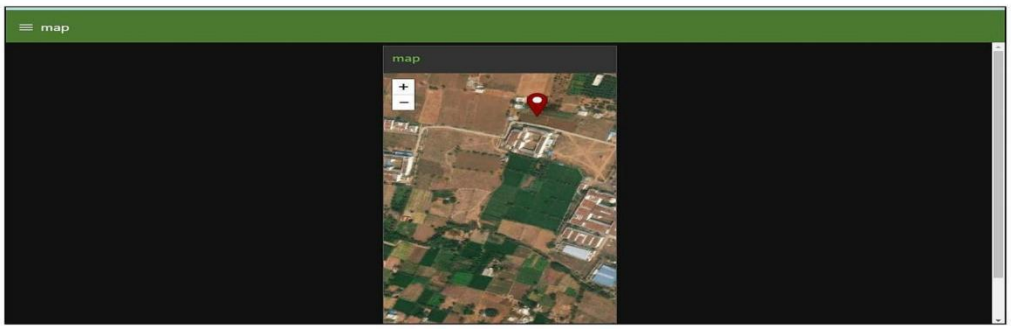


NODE RED CONNECTIONS:

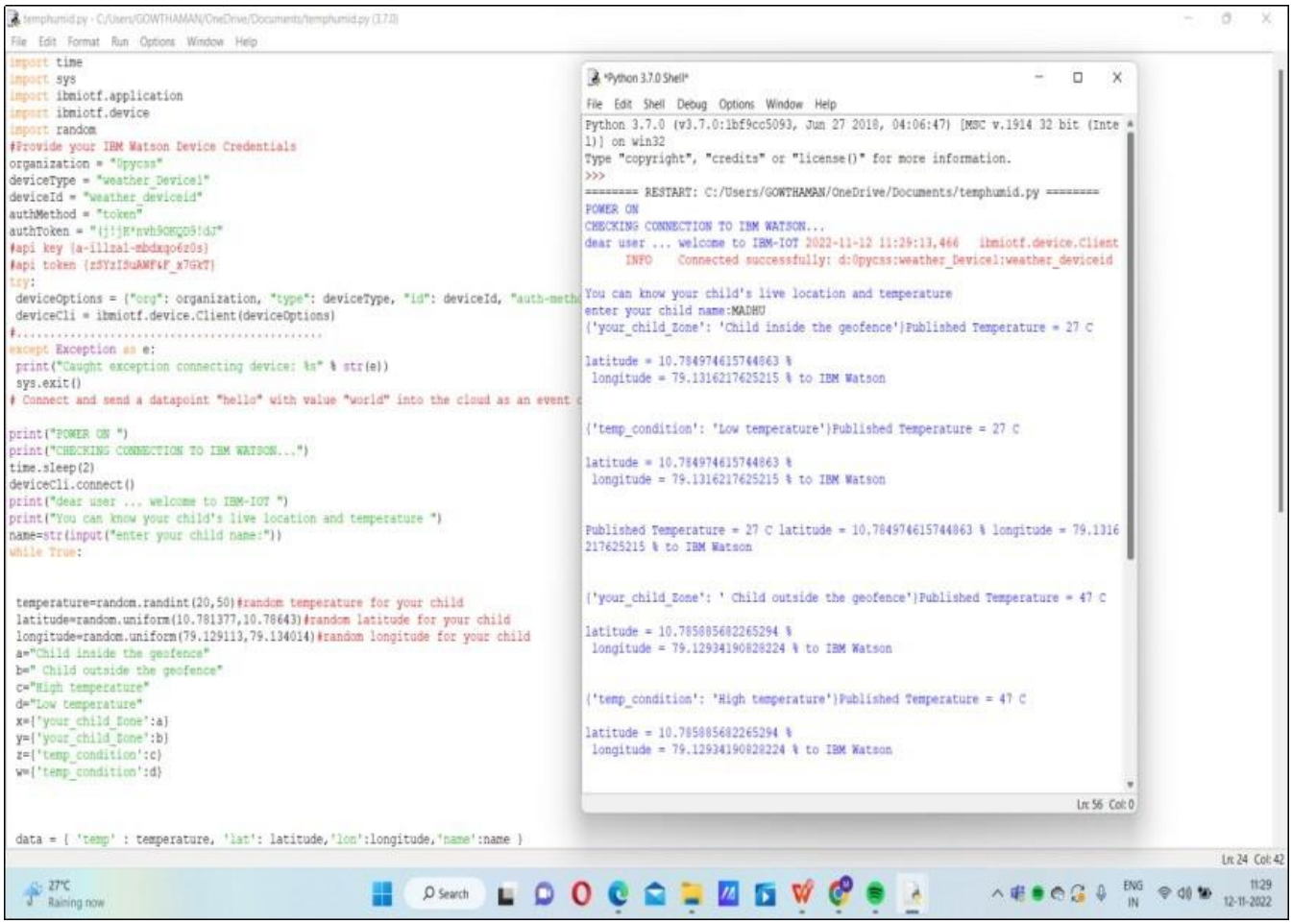


NODE-RED OUPUT:





RESULTS :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import sys
import ibmiotf.application
import ibmiotf.device
import random
#Provide your IBM Watson Device Credentials
organization = "0pycss"
deviceType = "weather_Device1"
deviceId = "weather_deviceid"
authMethod = "token"
authToken = "(j!jR'nvh9OKQD9!dJ"
#api key (a-illzal-mbdxqo6z0s)
#api token (z5YzISuAWF&F_x7GkT)
try:
deviceOptions = {"org": organization, "type": deviceType, "id": deviceId, "auth-meth
deviceCli = ibmiotf.device.Client(deviceOptions)
#.....
except Exception as e:
print("Caught exception connecting device: %s" % str(e))
sys.exit()
# Connect and send a datapoint "hello" with value "world" into the cloud as an event
print("POWER ON ")
print("CHECKING CONNECTION TO IBM WATSON...")
time.sleep(2)
deviceCli.connect()
print("dear user ... welcome to IBM-IOT ")
print("You can know your child's live location and temperature ")
name=str(input("enter your child name:"))
while True:
temperature=random.randint(20,50)#random temperature for your child
latitude=random.uniform(10.781377,10.78643)#random latitude for your child
longitude=random.uniform(79.129113,79.134014)#random longitude for your child
a="Child inside the geofence"
b=" Child outside the geofence"
c="High temperature"
d="Low temperature"
x={'your_child_Zone':a}
y={'your_child_Zone':b}
z={'temp_condition':c}
w={'temp_condition':d}
data = { 'temp' : temperature, 'lat': latitude,'lon':longitude,'name':name }
Ln: 24 Col: 42
Python 3.7.0 Shell
File Edit Shell Debug Options Window Help
Python 3.7.0 (v3.7.0:1bf9cc5093, Jun 27 2018, 04:06:47) [MSC v.1914 32 bit (Inte
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dear user ... welcome to IBM-IOT 2022-11-12 11:29:13,466 ibmiotf.device.Client
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latitude = 10.785805682265294 %
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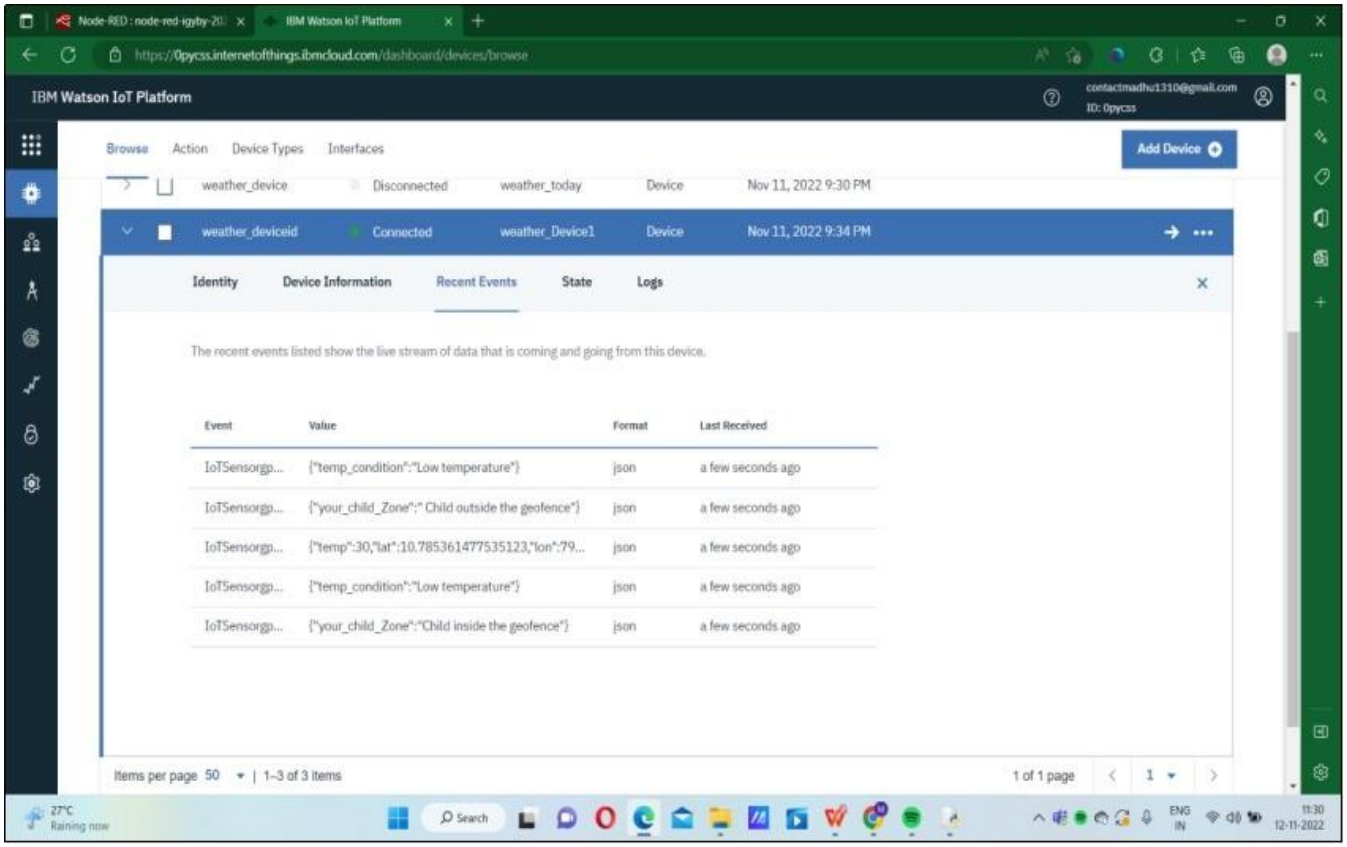
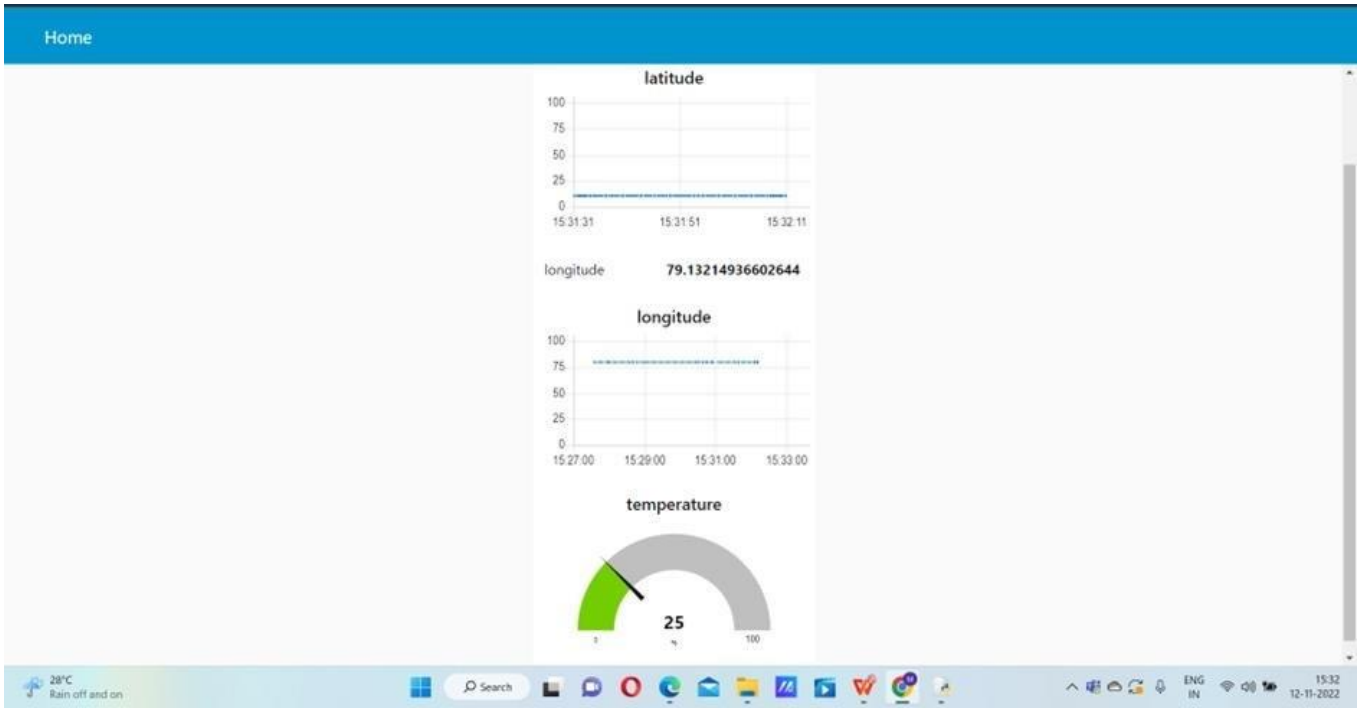
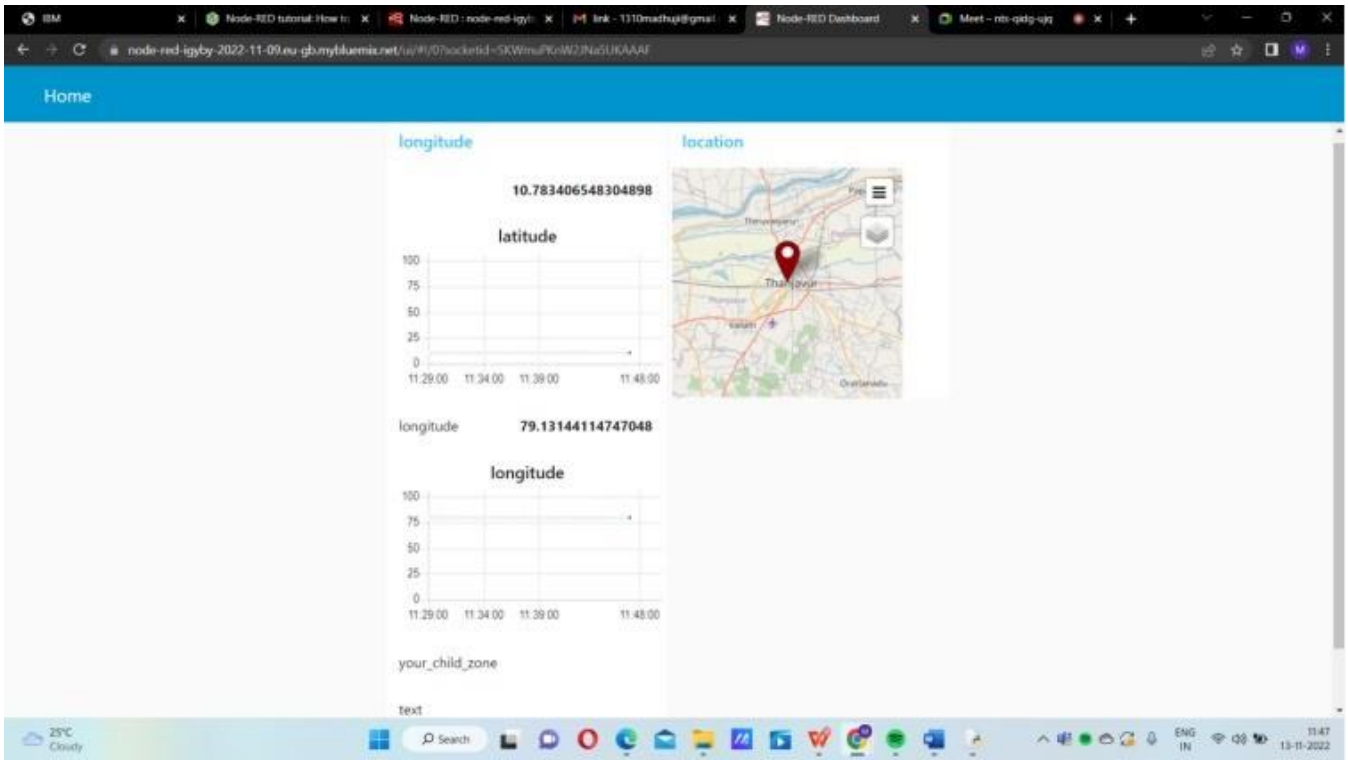
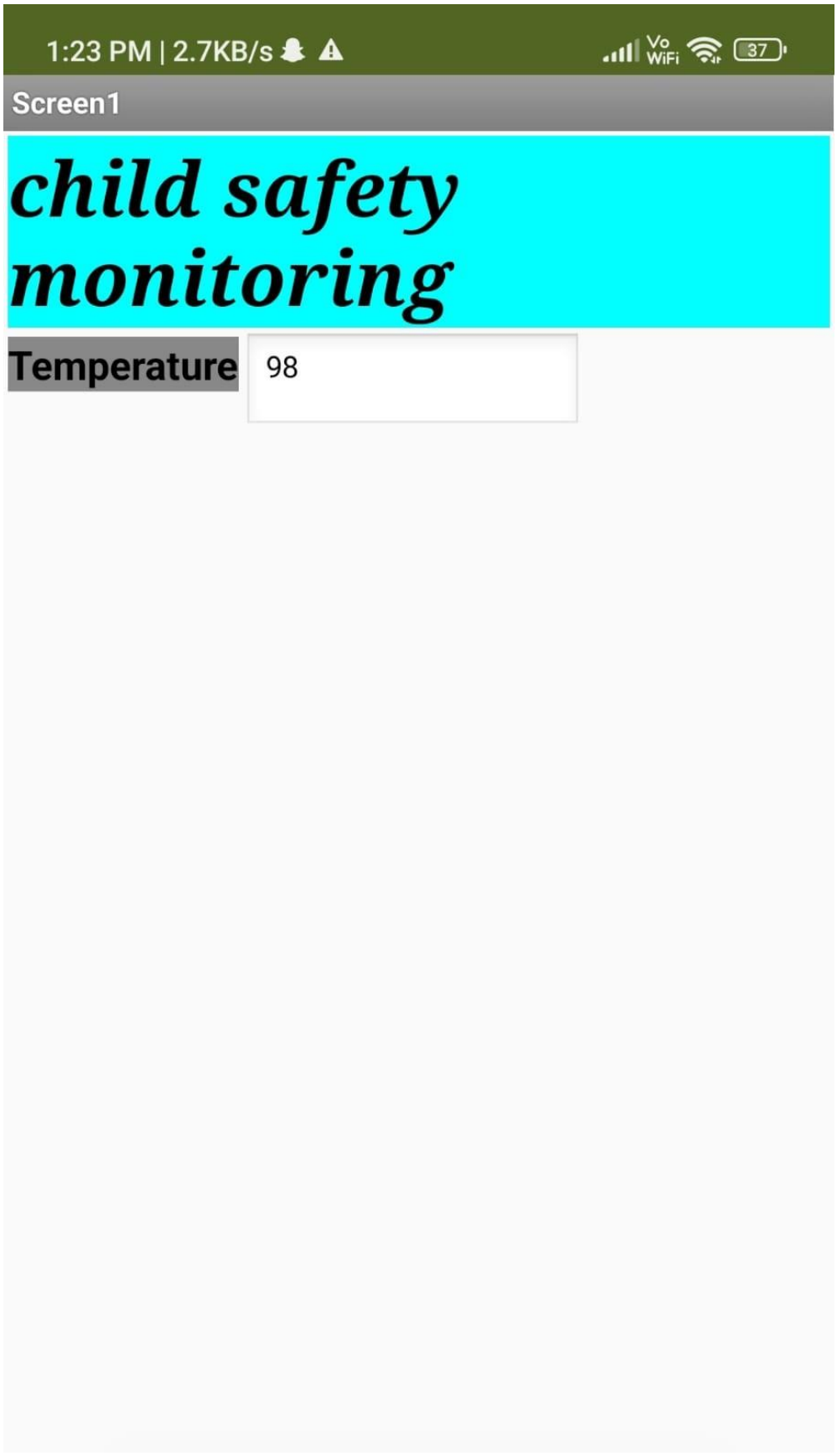
Ln: 56 Col: 0
27°C
Raining now
Search
ENG
IN
11:29
12-11-2022


Node-RED : node-red-igyby-20
IBM Watson IoT Platform
https://0pycss.internetofthings.ibmcloud.com/dashboard/devices/browse
IBM Watson IoT Platform
contactmadhu1310@gmail.com
ID: 0pycss
Browse
Action
Device Types
Interfaces
Add Device
weather_device
Disconnected
weather_today
Device
Nov 11, 2022 9:30 PM
weather_deviceid
Connected
weather_Device1
Device
Nov 11, 2022 9:34 PM
Identity
Device Information
Recent Events
State
Logs
The recent events listed show the live stream of data that is coming and going from this device.
Event
Value
Format
Last Received
IoTSensorgp...
{"temp_condition":"Low temperature"}
json
a few seconds ago
IoTSensorgp...
{"your_child_Zone":" Child outside the geofence"}
json
a few seconds ago
IoTSensorgp...
{"temp":30,"lat":10.785361477535123,"lon":79...
json
a few seconds ago
IoTSensorgp...
{"temp_condition":"Low temperature"}
json
a few seconds ago
IoTSensorgp...
{"your_child_Zone":"Child inside the geofence"}
json
a few seconds ago
Items per page 50
1–3 of 3 items
1 of 1 page
1
27°C
Raining now
Search
ENG
IN
11:30
12-11-2022


Home
latitude
100
75
50
25
0
15:31:31
15:31:51
15:32:11
longitude
79.13214936602644
longitude
100
75
50
25
0
15:27:00
15:29:00
15:31:00
15:33:00
temperature
25
0
100
28°C
Rain off and on
Search
ENG
IN
15:32
12-11-2022


Home
longitude
10.783406548304898
latitude
100
75
50
25
0
11:29:00
11:34:00
11:39:00
11:48:00
longitude
79.13144114747048
longitude
100
75
50
25
0
11:29:00
11:34:00
11:39:00
11:48:00
your_child_zone
text
location


1:23 PM | 2.7KB/s
Screen1
child safety monitoring
Temperature
98

ADVANTAGES :

Easy availability and affordability

Tracking is easy

Watch your kids

Guarantees piece of minsd to caretakers.

Conclusion

This wearable device has a superior mode for viewing and locating the children\'s whereabouts with correct latitude and longitude, which is especially useful when using Google maps. This could assist to reduce the number of attacks on children while also making them feel protected and secure. The major goal of this project is to create a device that protects youngsters from risky circumstances while also assisting them in combating them.

FUTURE SCOPE :

A camera module for surveillance of the child's surrounds can be added to improve the system's performance. It's also possible to do it with a Raspberry Pi and Lilypad. It is possible to develop a more energy-efficient type that can keep the battery for a longer period of time .

APPENDIX :

Github:

https://github.com/IBM-EPBL/IBM-Project-2086-1658428018

project demo link:

https://drive.google.com/file/d/1DzC88MJGTQnbWntEJPQRcafwIR6YSwID/view?usp=share_link .