NALAIYA THIRAN PROJECT REPORT

TITLE : IoT Based Safety Gadget for Child Safety Monitoring & Notification.

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1.INTRODUCTION

1.1 Project Overview

Internet of Things (IoT) plays a major role in every day to day life.

The major difference between IoT and embedded system is that a dedicated protocol/software is embedded in the chip in case of embedded system, whereas, IoT devices are smart devices, which are able to take decisions by sensing the environment around the device.

The development of sensors technology, availability of internet connected devices; data analysis algorithms make IoT devices to act smart in emergency situations without human interventions.

So, IoT devices are applied in different fields such as agriculture, medical, industrial, security and communication applications[1]. IoT systems are useful within a system to do deeper automation, analysis, integration.

IoT contributes to technology by advances in software, hardware and modern tools. It even uses existing and upcoming technology in the fields of sensing, networking and robotics.

IoT brings global changes by its advanced elements in the social, economic, and political impact of the users.

Enable tracking of the child's location and capturing of data remotely such as temperature, pulse, respiratory rate, quality of sleep and many more.

To show the child's actual data with reference values.

1.2 Purpose

Approximately 80% of all reports of child abuse are made Nowadays,with 74% of the victims being girls and the remaining 20% being males .In this world, a child goes missing every forty seconds. Children are the foundation of a country; if there

Future was threatened, it would have an effect on foundation of a country.

The emotional and mental stability of the children is compromised as a result of the abuse, ruining their futures and careers. The things that happen to these defenseless kids are not their fault. Therefore, parents are in charge of raising their own children. However, parents are compelled to seek money because of the state of the economy and their desire to concentrate on their child's future and job. Consequently, it becomes challenging for them to constantly cling to their kids. We have created a setting in our system where this issue can be effectively solved. It enables parents to keep a close eye on their kids in real time while concentrating on their own careers without having to take any physical action. In essence, Kids cannot tell their parents about the abuse they experience on a regular basis. They are to young to really comprehend what their children are being abused.so. the main objective of this module is to help working parents to be free from worry about their children by tracking their movements at any time. An autonomous real-time monitoring system is required system is required for every child world wide in order to stop snacks on children.

2.LITERATURE SURVEY

2.1 Existing Problem

- It consists of inbuilt Wi-Fi, GSM, GPS and Bluetooth modules. The link it one board is similar to the Arduino board and it is termed as all-in-one prototyping board for safety and IoT devices. The link it one is a robust development board for the hardware and also used for industrial applications.
- Different components such as temperature sensor, heartbeat sensor, panic button, contact switch are connected to the link it ONE board along with built in GSM, GPS modules. Safety gadget consists of BEACON and BLE packet is transmitted through it, this packet is received by binding gadget which has BLE receiver module, the packet usually contains information such as identification number, signal strength etc.
- Temperature is one of the most commonly measured variables. For measuring body temperature of the child DS18B20 temperature sensor is used. The heartbeat sensor is used in the proposed system for measuring the pulse rate. There is a heartbeat/pulse sensor which is combined to simple optical heart rate sensor with amplification and nullification circuitry making it is fast and easy to get reliable pulse reading. The GSM/GPRS block is activated with a SIM card on the board.
- They mainly differ based on bandwidth and RF carrier frequency GSM network consists of mobile station, base station subsystem network and operation subsystem. The GPS module is provided for identifying the location of the child. GPS module receives the signals from satellites. The latitude and longitude of the location can be identified by the GPS module. The device sends the monitored parameters data such as temperature and pulse rate to cloud. If any abnormalities occurs in temperature or pulse rate readings, a SMS and call

triggers to the parent/caretaker mobile phone immediately and also updated to the mobile app only for the registries mobile no. We can use mobile application, cloud and database as the back end of storing and retrieving information and also a device for monitoring.

2.2 Reference

- M Nandini Priyanka, S Murugan, K. N. H. Srinivas, T. D. S. Sarveswararao, E. Kusuma Kumari, 'Smart IoT Device for Child Safety and Tracking' International Journal of Innovative Technology and Exploring Engineering, Volume 8, Issue 8, June 2019.
- Akash Moodbidri, Hamid Shahnasser (Jan. 2017) 'Child safety wearable device', International Journal for Research in Applied Science & Engineering Technology, Vol. 6 Issue 2, pp.438-444.
- Aditi Gupta, Vibhor Harit, 'Child Safety & Tracking Management System by using GPS, Geo-Fencing & Android Application: An Analysis,' 2016 Second International Conference on Computational Intelligence & Communication Technology.

- Dheeraj Sunehera, Pottabhatini Laxmi Priya, 'Children Location Monitoring on Google Maps Using GPS and GSM,' 2016 IEEE 6th InternationalConferenceon
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- Asmita Pawar, Pratiksha Sagare, Tejal Sasane, Kiran Shinde (March– 2017) 'Smart security solution for women and children safety based on GPS using IoT', International Journal of Recent Innovation in Engineering and Research, vol. 2, Issue 3, pp.85-94.

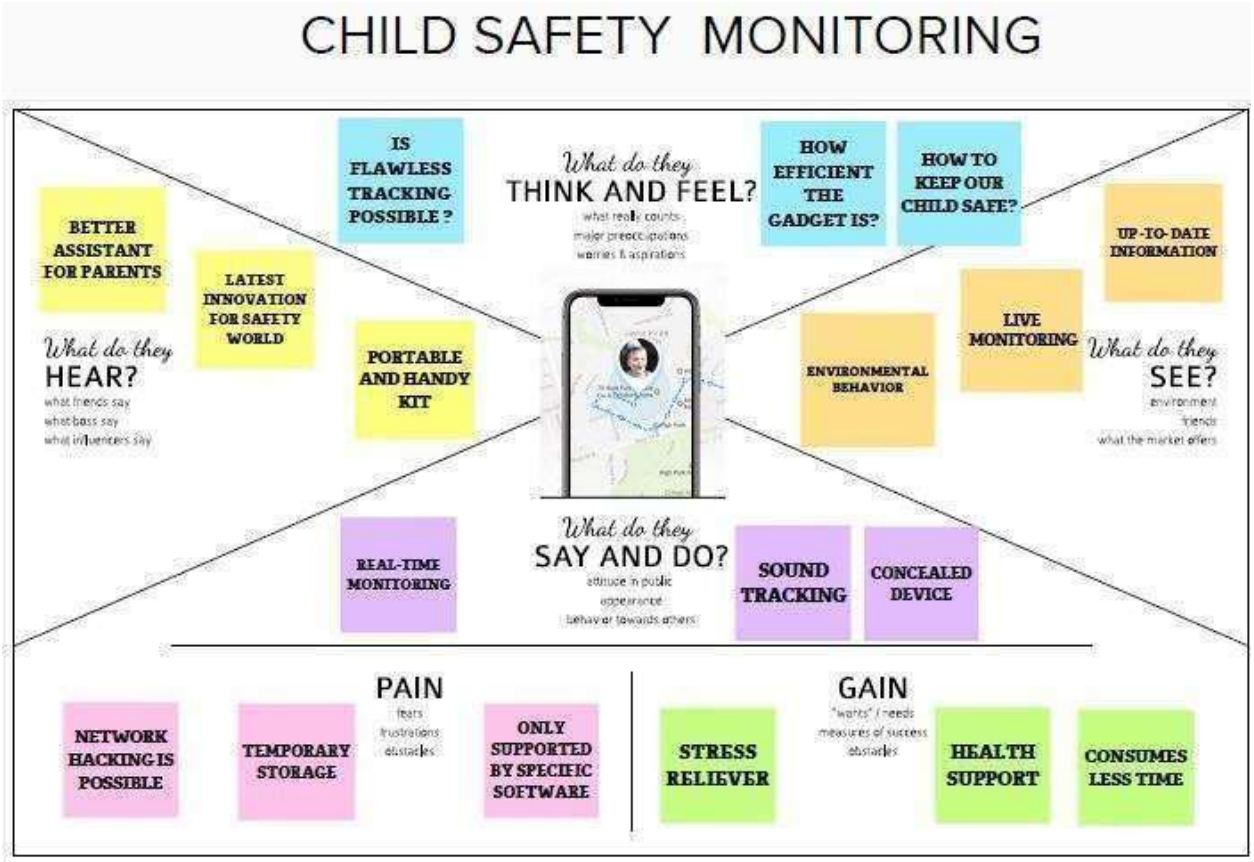
- Nitishree, (May-June, 2016) ‘A Review on IOT Based Smart GPS Device for Child and Women Safety’, International Journal of Engineering Research and General Science, Vol. 4, Issue 3, pp.159-164.
- Pramod, M Uday Bhaskar, Ch. V and Shikha, K. (January 2018) ‘IoT wearable device for the safety and security of women and girl’ International Journal of Mechanical Engineering and Technology, Vol. 9, Issue 1, pp.83-8.

2.3 Problem Statement Definition

- Current Child safety monitoring System is a manual with a monotonous process and is very time consuming
- Real time data access can be done by using remote monitoring and IOT technology
- Proposed paper is to obtain the child safety monitoring.

3.IDEATION & PROPOSED SOLUTION

3.1 Empathy Map Canvas



3.2 Ideation & Brainstorming

Define your problem statement? What problem are you trying to solve?

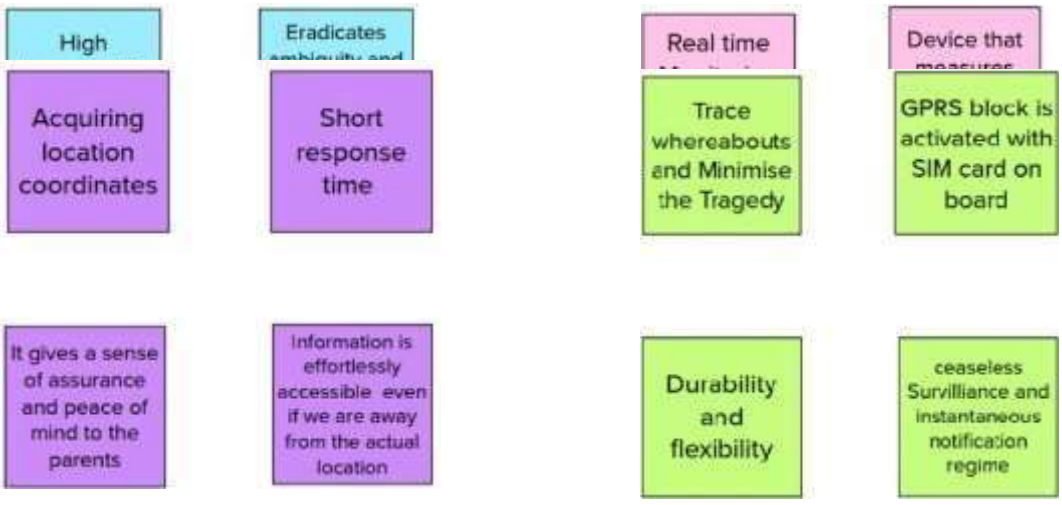
Frame your problem as a How Might We statement. This will be the focus of your brainstorm.

PROBLEM

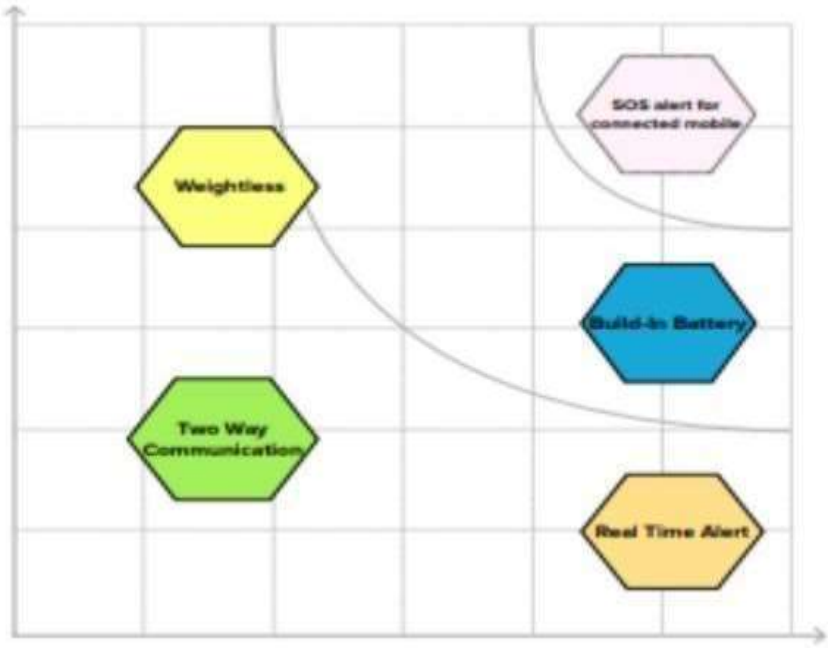
IoT-Based Safety Gadget for Child Safety Monitoring and Notifcation[

IoT-Based Child safety monitoring system helps the parents in monitoring critical situation]

Brainstorming



Idea prioritization

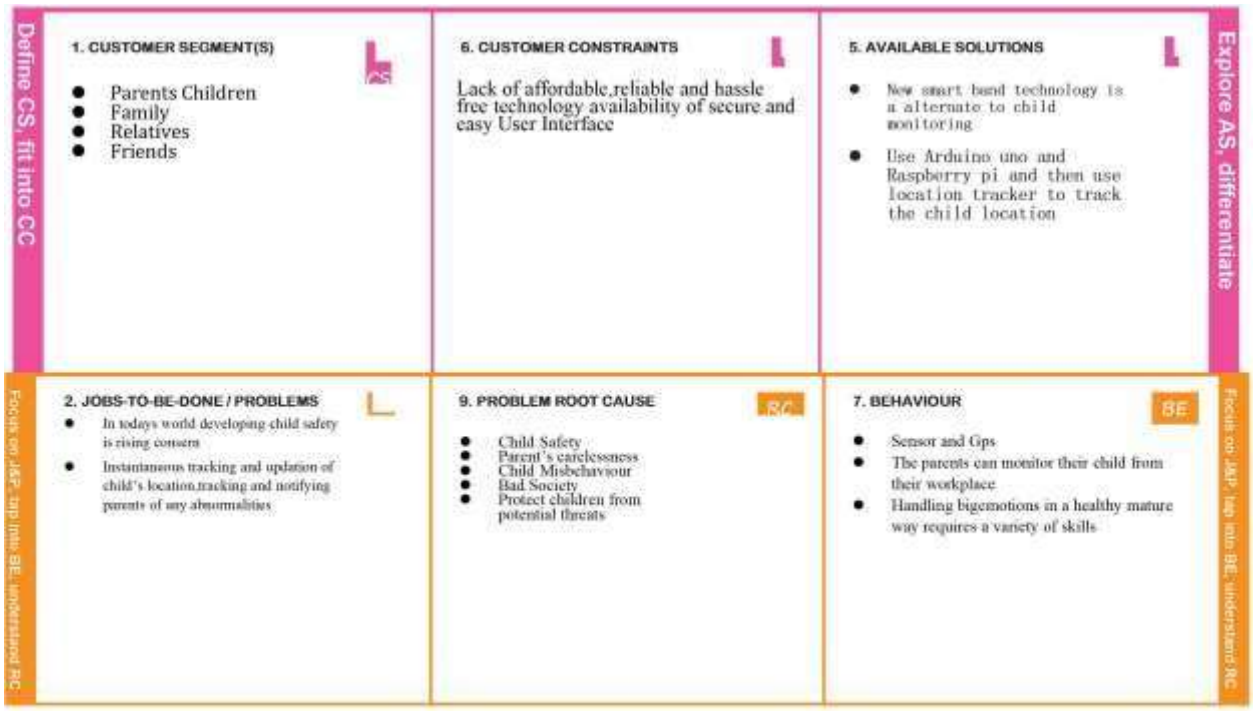


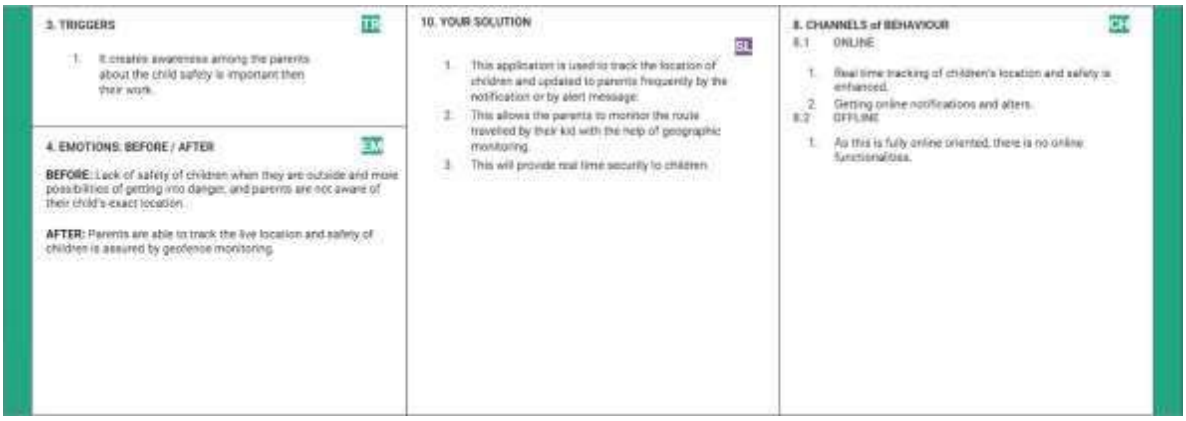
3.3 Proposed Solution

S.No.	Parameter	Description
1.	Problem Statement (Problemto be solved)	Increasing the rate of child kidnapping and trafficking and lack tracking,abusing,technology for child,there is limited application for child monitoring.Hence an IOT Based Safety Gadget for child Safety is probably the need of the today's
2.	Idea / Solution description	Smart IOT device for child safety and tracking is developed to help the parents to locate and monitoring their child.Device is interfaced with temperature,heartbeat,touch sensor and GPS.using this device can easily to track the child
3.	Novelty / Uniqueness	The enchantments will be adding more features,software,applications,hardware to make the proposed system.
4.	SocialImpact/ Customer Satisfaction	Child Safety
5.	Business Model (Revenue Model)	IOT based risk monitor device for child is done through smart device(eg:Smart watch) through this device the respected parameters are monitored by the connected person

6.	Scalability of the Solution	Safety and reliability

3.4 Problem Solution Fit





4.REQUIREMENT ANALYSIS

4.1.Functional Requirement

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration through Form Registration through Gmail Registration through LinkedIN
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	Notification	Notified via Mobil App
FR-4	User Interface	Mobile App- MIT Inventor able to see location of children when they are not of geoference

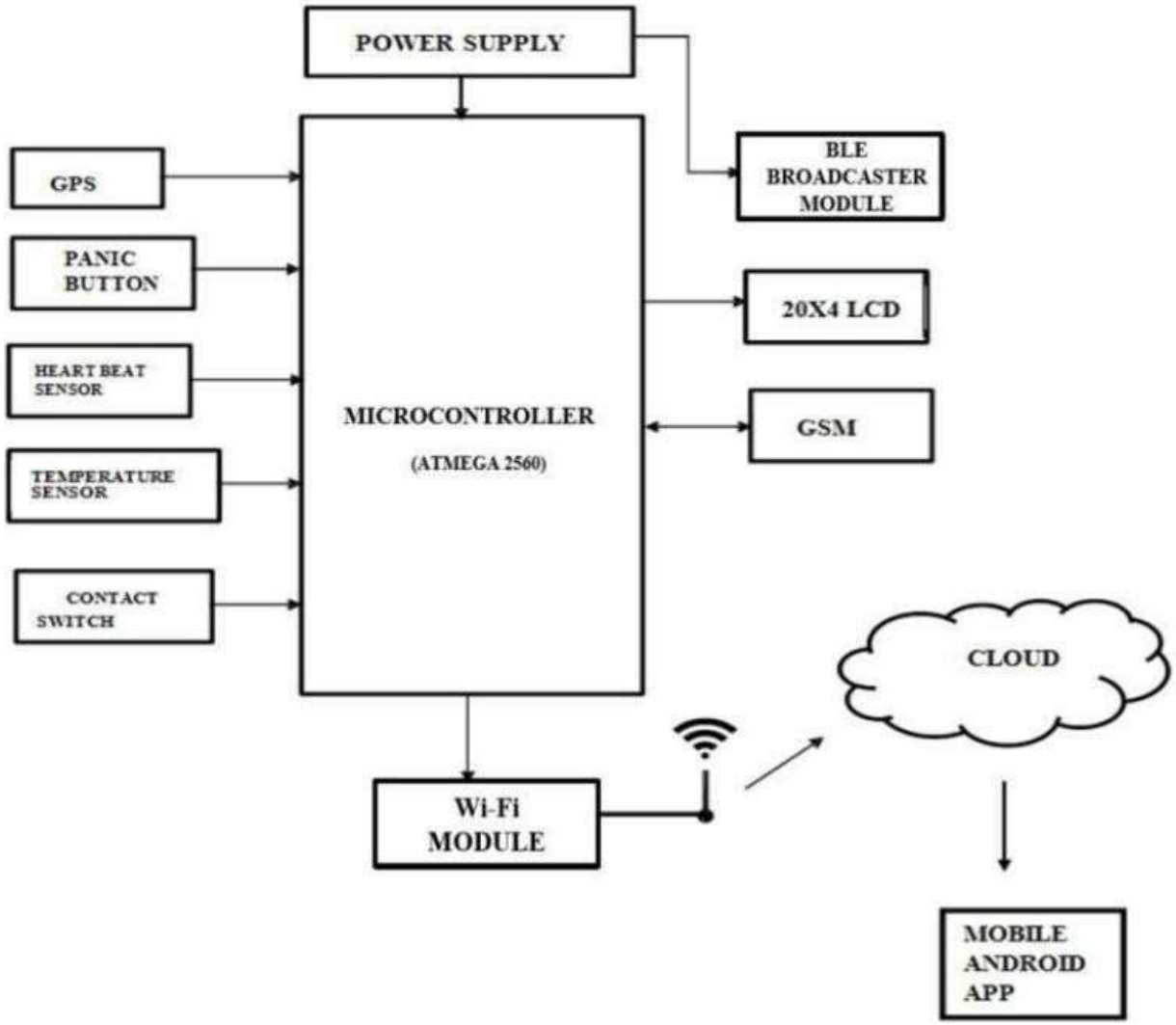
4.2 Non Functional Requirement

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

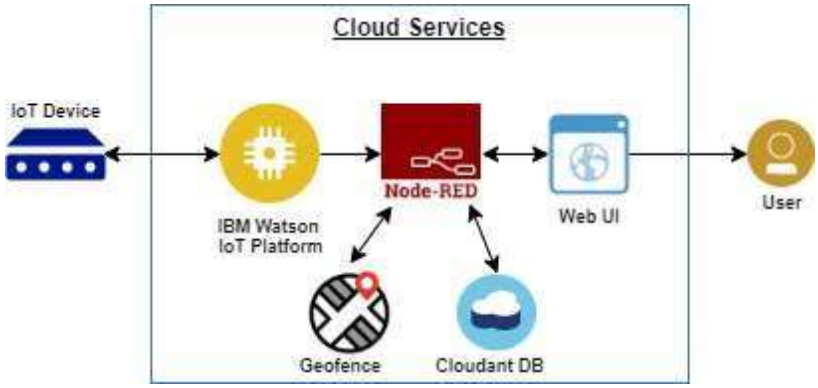
FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	Accessed through Mobile App Showing location(latitude and longitude)of child
NFR-2	**Security**	Database security and ensuring the safety of the product while in use
NFR-3	**Reliability**	An update will be provided if any errors are found in the device
NFR-4	**Performance**	Each page must load within 2 seconds
NFR-5	**Availability**	Back up power supply
NFR-6	**Scalability**	Increase in scability

5.PROJECT DESIGN

5.1 Data Flow Diagrams



5.2 Solution & Technical Architecture



S.No	Component	Description	Technology
1.	User Interface	The communication protocol being used in the proposed solution might act as an interface the way like 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 the child	IBM Watson STT service, python etc
3.	Database	Data to be segregated and secured in the form of relational DBMS	My SQL
4.	Cloud Database	IBM	IBM Cloudant
5.	File Storage	File storage requirements	IBM Block Storage or Other Storage Service 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 / Cloud Local Server Configuration	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 design development
2.	Security Implementations	The developed application should be accessible in the way it can only respond to the comments of the relevant users	Encryption, IAM Controls.
3.	Scalable Architecture	The app format comes the way easier to handle and operate	Not yet determined

5.3 User Stories

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer (Web user)	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	I can access my account / dashboard	High	Sprint-1
		USN-2	As a user, I will receive confirmation email once I have registered for the application	I can receive confirmation email & click confirm	High	Sprint-1
		USN-3	As a user,I can register for the application through Facebook	I can register & access the dashboard with Facebook Login	Low	Sprint-2
		USN-4	As a user, I can register for the application through Gmail	I can Check back whether the application is recieved	Medium	Sprint-1
	Login	USN-5	As a user, I can log into the application by entering email & password		High	Sprint-1
	Dashboard	USN-6	As a User, I can view the Dashboard	I can view the locations which is stored in the database of the child via dashboard	High	Sprint-2
Customer Care Executive		USN-7	As a customer care executive,I will detect the problems	I will detect the problems and correct them if the device face any	Medium	Sprint-3
Administrator		USN-8	As an administrator, I ensure the efficiency of the device	I will ensure efficiency,cost,etc	High	Sprint-4

6.PROJECT PLANNING & SCHEDULING

6.1 Sprint Planning & Estimation

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Registration	USN-1	As a end user/parent of the child, I can register it through Email.	2	High	GOWTHAM G
Sprint-1		USN-2	As a Parent/ Guardian, I can register for the application By entering my mail id and password.	1	High	VIKRAM M
Sprint-1	User Confirmation	USN-3	As a user, I can log into the application by entering email & password.	2	Low	AMMAR
Sprint-1	Login	USN-4	As a user, I can register for the application through Gmail	2	Medium	SIVACHANDRAN R

6.2 Sprint Delivery Schedule

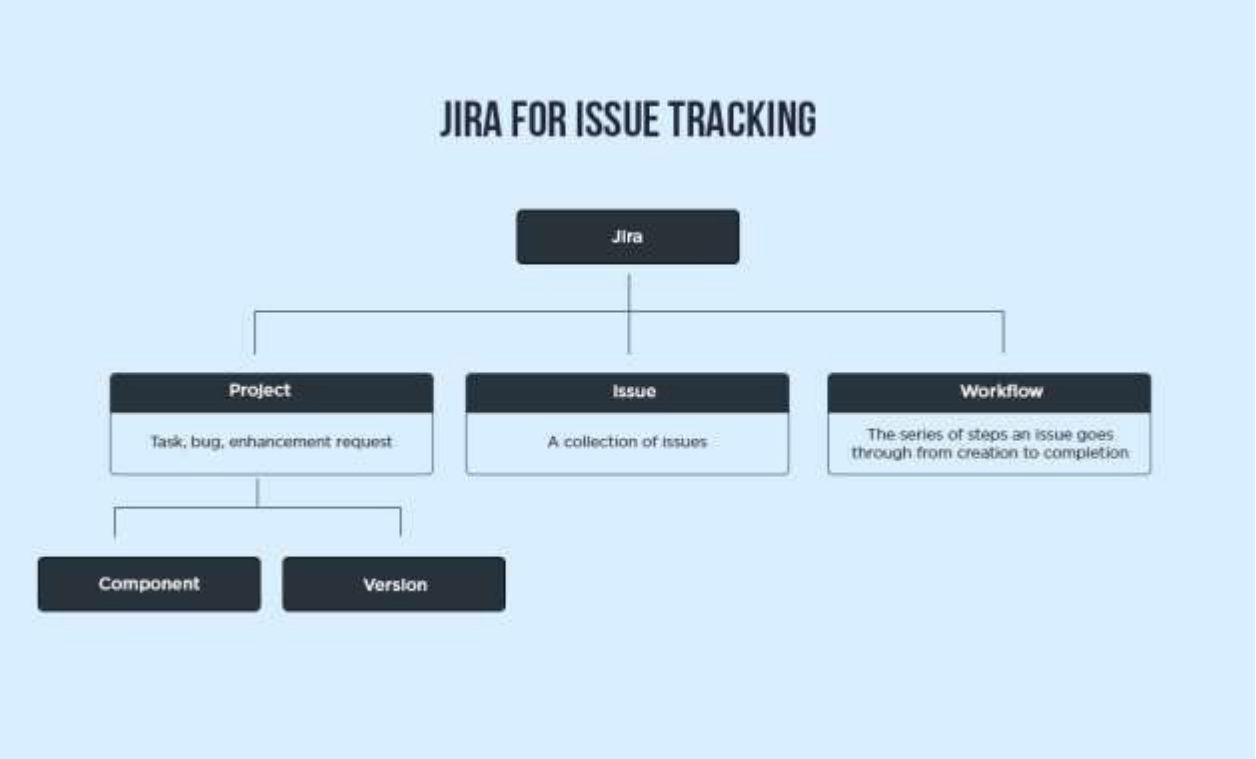
Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-1	20	2 Days	10 Nov 2022	11 Nov2022	20	10 Oct 2022
Sprint-2	20	2 Days	10 Nov 2022	11 Nov 2022	20	10 Nov 2022
Sprint-3	20	2 Days	10 Nov 2022	11 Nov 2022	20	11 Nov 2022
Sprint-4	20	2 Days	10 Nov 2022	11 Nov 2022	20	11 ov 2022

6.3 REPORTS FROM JIRA:

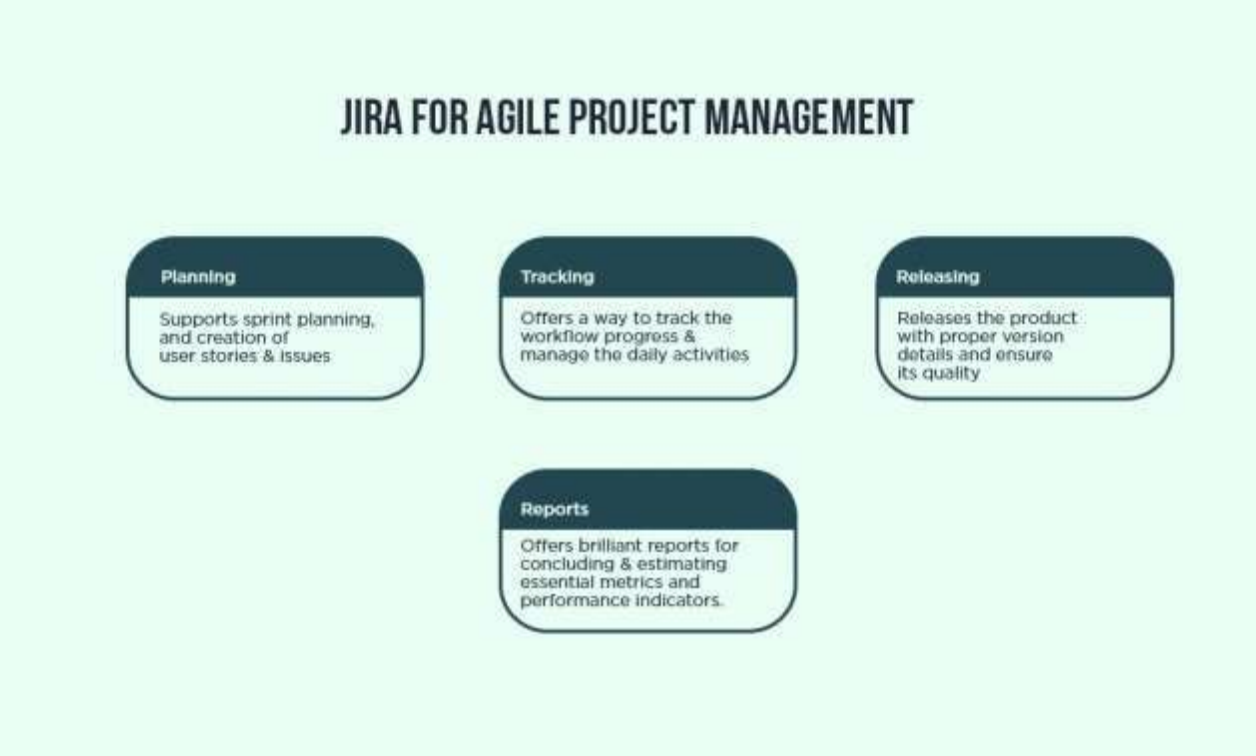
Jira is a cloud- and subscription-based issue tracking tool but also designed to handle team coordination in agile software development as well. It offers a comprehensive suite of bug tracking throughout the entire software development lifecycle. This software makes teams work towards a common goal and facilitates planning, tracking as well as the release of the software. Begins with backlog & planning, this project management software allows you to outline the entire project progress and ensures collaboration with a multitude of tools.

Its release management features track projects across releases and offers comprehensive reports on progress and performance. This extremely flexible software provides pre-set templates for all functionalities and enables to alter them as per your team and enterprise needs.

As depicted below, the Atlassian's Jira issue tracking software is completely based on three main concepts: Project, Issue, and Workflow.s



From the perspective of project management tool, Jira is designed to plan, track, release & report agile software development activities as explained below:



Jira software features include some additional agile functionalities and fully customizable Scrum and Kanban boards. It empowers you to estimate time for issues using backlog prioritization and robust reporting features.

Atlassian's Jira Features

To be competent as one of the best project management tools of today, Jira brings a myriad of unique functionalities and features. Let us have look at the most dominant features:

1. **Agile Development**

Agile is the Jira's fundamental application, and it offers the smooth utilization of all the features of Scrum boards and Kanban boards. Therefore, it can be used for a crum, Kanban and hybrid method like Scrumban as well. Whenever you begin a project, Jira asks you to select your project type: Kanban or Scrum. The moment

you select, Jira creates a Scrum or a Kanban board to make your project continues.

1. Jira Project Tracking

This issue tracking software tracks ongoing project at any stage. Using JQL, the customized query language of Jira allows you to filter or sort issues based on the various criteria. The sidebar allows accessing immediate details about planning, releasing, tracking, and reporting. With this flexible planning tool, you can create tasks and stories from any screen. In addition, the drag and drop feature makes it simple to create sprints and epics in the backlog.

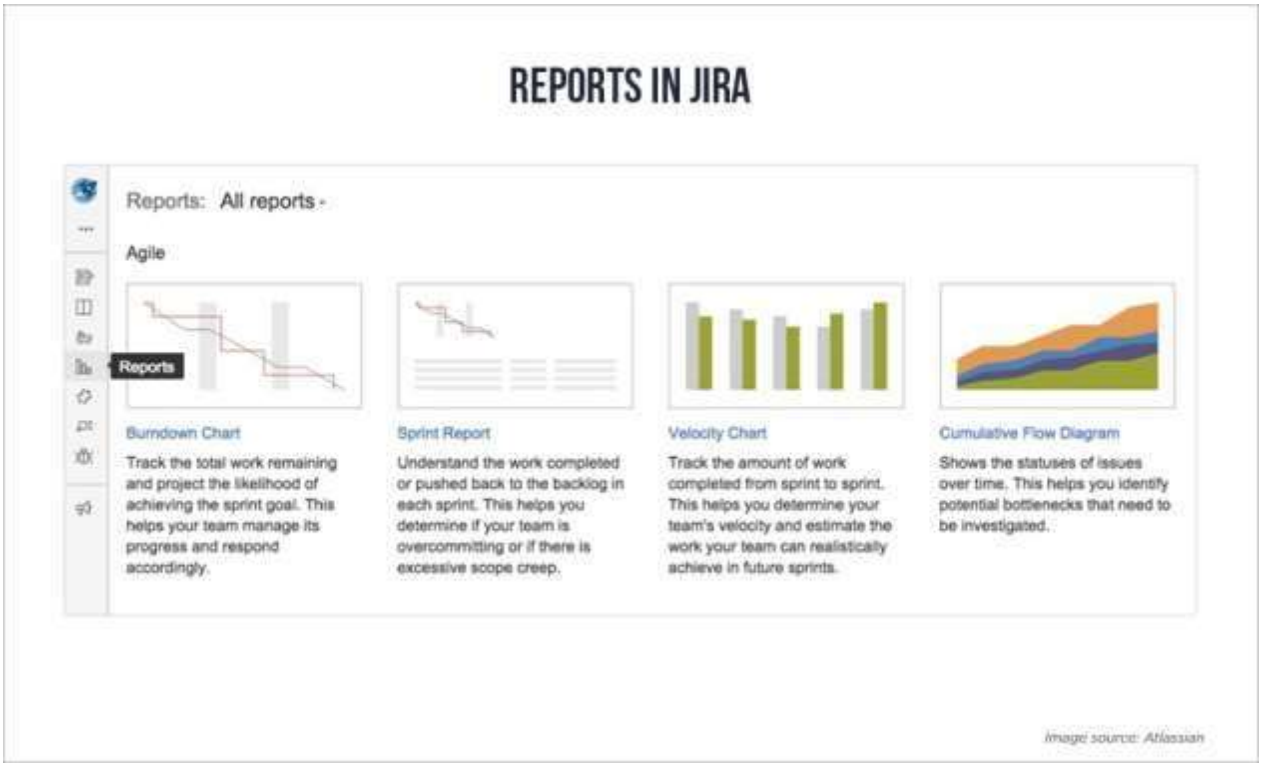
2. Mobile Applications

In addition to desktop and on-premise system, the tool supports remote teams on diverse locations. The Jira project management tool comes with native mobile applications that are compatible with Android and iOS devices. Hence, users can

stay online as well as engaged anytime.

3. Reports in Jira

Jira delivers the relevant information in a convenient format called reports. There are numerous reports available in JIRA, which enables you to gain visibility of the situation. In addition, these reports offer project statistics throughout the entire lifecycle. For example, the Burndown chart displays the actual as well as the estimated amount of work to be finished in the sprint.



Various reports in the Jira software are as follows:

- Resolved vs. Created Issues Report
- Resolution Time Report

- User Workload Report
- Single Level Group by Report
- Version Report
- Pie Chart Report
- Average Age Report
- Velocity Chart
- Cumulative flow diagram
- Sprint Report
- Workload Pie Chart Report

4. Jira Security

The security settings of Jira bug tracking software restricts the access of certain bug to only those people who are allowed to work on the bug or a team member of the given security level. You can set your bug's security level when it is created or when it is being edited. Likewise, there is a security feature like Default Permission Scheme. New projects are assigned under this scheme by default. In addition, the permission schemes allow you to make a set of permissions as well as apply the same to any project.

5. Unparalleled Connectivity with Jira Add-Ons

As the Jira is equipped with flexible Java APIs & REST, you can easily extend its power and make it function in line with your business terms. Moreover, the 800+ add-ons & plugins for Jira available in the Atlassian Marketplace allow you to

control everything about a product. The popular add-ons for Jira are:

- JIRA Toolkit Plugin
- ScriptRunner for JIRA
- Suites utilities for JIRA
- JIRA Charting Plugin
- Portfolio for JIRA
- JIRA Misc Workflow Extensions
- Zephyr for JIRA – Test Management
- Tempo Timesheets for JIRA
- Atlassian REST API Browser

6. Great Product Integrations

The integration features of Jira software make the software development simpler and easier together with other tools including Atlassian tools like Confluence. You can also keep your development and IT team integrated for fast issue resolutions by integrating Jira software with Jira Service Desk.

The Jira integrations currently offered by the vendors are as follows:

- Salesforce Sales Cloud
- Service Desk
- Balsamiq

- Zendesk
- Zephyr
- Tempo
- EazyBI
- Gantt-Chart for JIRA
- Atlassian Confluence
- GitHub
- Gliffy
- nFeed

7. Issue Creation

Thanks to Jira, with issue creation, now no need to copy from the user's emails to excel sheet anymore. Jira features support in creating tasks, feature requests, bug reports, and helpdesk tickets. There are two convenient ways to create issues:

- Emails - Sending a mail to a pre-configured email address
- Web – Filling the form given on the respective web page

In addition, you can use various customizable items for issues types.

8. Roadmaps

Jira project management includes roadmap where users can create, handle, and visualize epics of their team. It enables you to comprehend what is outstanding and when bugs are scheduled to be fixed. This feature is beneficial for planning large sets of stories across various sprints.

9. Real-Time Notification

Equipped with notification features, Jira ensures to offer the required information to its users when they indeed need it. There are configurable email alerts when the issues are updated and there are optional emails to send the remainder for overdue tasks.

10. Extensive Jira Search

With a Jira bug tracker, you can find what you're seeking in seconds. You can save your searches as a filter and reuse them again. The flexible searching option applies to customizable tools too. Some of the searching functionalities in Atlassian Jira are as follows:

- Simple Search
- Quick Search

- Export search
- Configurable Search Results
- Advanced Search
- Search Status History
- Refine Searches

11. Activity Log

Jira software keeps track of all activities, updates, as well as work logged against your issues. For instance, every issue & its updates, people assignment and comments from the developing team are tracked under the activity log. Thereby you can achieve better collaboration and visibility with your development teams.

12. Issue Templates

Jira allows you to create issues easily using its templates like predefined process and subtasks. You can also customize your own Jira issue and save as a template for future use. This feature allows your team to perform better as it enables the automatic prefilling of main fields.

13. Jira Dashboard

The dashboard is the first thing that you can see once you log onto your Jira software. The admin can customize the dashboard’s view and the things displayed on it. A dashboard typically displays apps and gadgets that expose various sorts of information to support the team members to track their project’s progress.

14. Time Tracking With Color Indication

Jira employs three colors (Blue, Orange, and Green) to track the amount of time spent on a given issue. You can acquire this information under the time tracking section.

Each color comprises its own significance. They are:

- Blue – denotes the estimated time to resolve the issues
- Orange – denotes the amount of time left for fixing the issue
- Green – denotes the actual time that has been spent on the issue resolving

Portfolio for Jira

While considering the Jira features, we can’t skip the Portfolio for Jira – a product

that functions on top of the Jira software. This product allows for all of the Jira tasks, agile sprints, etc., to appear under one proper planning view, empowering you to commit to high-level capacity planning and scheduling. It also enables you to arrange the work by initiative & themes, granting bonus hierarchy and permits to plan the future work based on the team's resources as well as availability. This portfolio also supports you to detect blockages when capacity is surpassed.

Learn more about the Portfolio of Jira

Conclusion

As Jira covers everything for the agile team, over 51,000 customers worldwide use this software. The leading brands using the Jira issue tracking software include Cisco, LinkedIn, Spotify, and eBay. Hence, with Jira, there is no lack of ways to remain in the loop.

7.CODING& SOLUTIONING

7.1 Feature

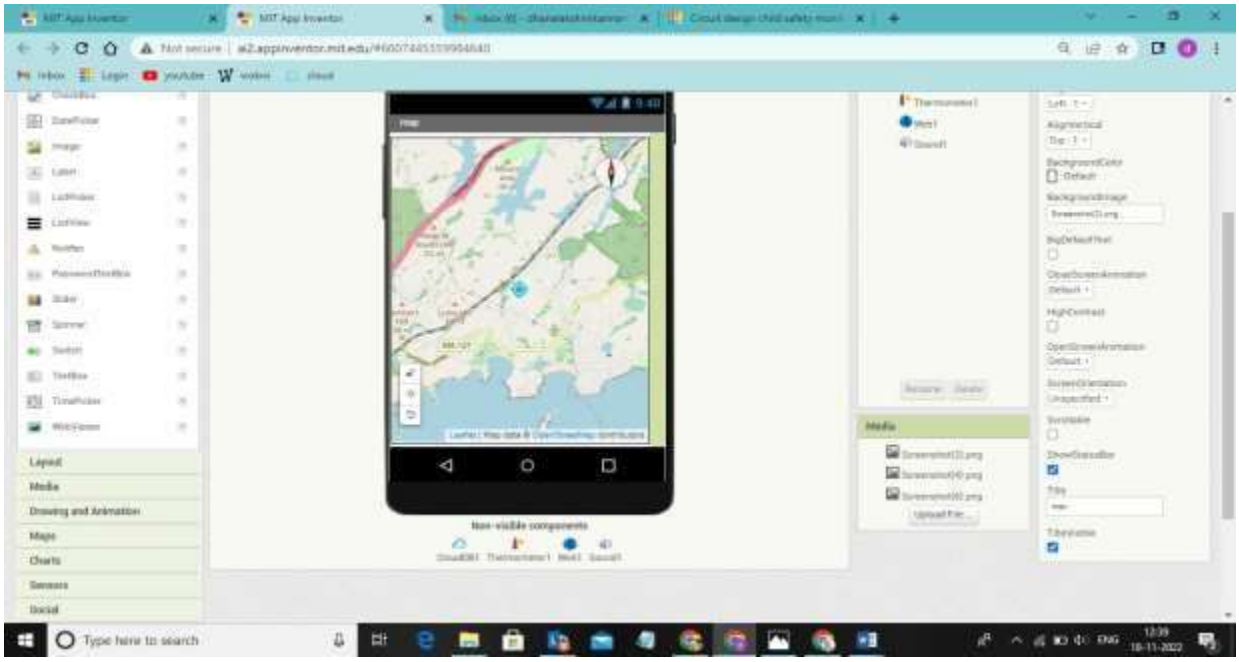
```
#include <WiFi.h>
#include <WiFiClient.h>
#include <PubSubClient.h>
#include <ArduinoJson.h>
#include<TinyGPS++.h>
#define RXD2 16
#define TXD2 17
HardwareSerial neogps(1);

TinyGPSPlus gps;
char arr[100];

const char* ssid = "Redmi";
const char* password = "krish@08";

#define ID "17cmwk"
#define DEVICE_TYPE "Tracker"
#define DEVICE_ID "gps1"
#define TOKEN "childtracker1"

char server[] = ID ".messaging.internetofthings.ibmcloud.com";
char publish_Topic1[] = "iot-2/evt/Data1/fmt/json";
char publish_Topic2[] = "iot-2/evt/Data2/fmt/json";
char authMethod[] = "use-token-auth";
char token[] = TOKEN;
char clientId[] = "d:" ID ":" DEVICE_TYPE ":" DEVICE_ID;
```

```
WiFiClient wifiClient;
PubSubClient client(server, 1883, NULL, wifiClient);

void setup() {
   Serial.begin(115200);
   Serial.println();
   wifi_init();
}

long previous_message = 0;
void loop() {
   client.loop();
   String payload = getLocationPayload();
   if(payload=="{}"){
     return;
   }

  Serial.print("Sending payload: ");
   Serial.println(payload);
   if (client.publish(publish_Topic1, arr)) {
      Serial.println("Published successfully");
   } else {
      Serial.println("Failed");
   }
   delay(2000);
}
void wifi_init(){
   WiFi.begin(ssid, password);
   neogps.begin(9600,SERIAL_8N1,RXD2,TXD2);
   while (WiFi.status() != WL_CONNECTED) {
   delay(500);
```

```
     Serial.print(".");
    }
    Serial.println("");
    Serial.println(WiFi.localIP());

    if (!client.connected()) {
       Serial.print("Reconnecting client to ");
       Serial.println(server);
      while (!client.connect(clientId, authMethod, token)) {
           Serial.print(".");
           delay(500);
       }
       Serial.println("Connected TO IBM IoT cloud!");
    }
}
String getLocationPayload(){
    boolean newData = false;
    for(unsigned long start = millis();millis()-start<1000;){
      while(neogps.available()){
      if(gps.encode(neogps.read())){
        newData = true;
        }
      }
    }
    String payload;
    if(newData == true){
    newData = false;
      payload = locationPayloadGenerator();
    }
    else{
      Serial.println("No data");
     payload ="{}";
```

```
  }
   return payload;
}
0String locationPayloadGenerator(){
 String payload = "{}";
 if(gps.location.isValid()){
  float lat = gps.location.lat(); float
  lon = gps.location.lng();
  payload = "{\"latitude\" : "+String(lat)+",\"longitude\" : "+String(lon)+"}";
  create_json(lat,lon);
 }
 return payload;
}
void create_json(float lat,float lon){
 StaticJsonDocument<10> doc; JsonObject
 root = doc.to<JsonObject>();
 root["name"]="Child";
 root["latitude"] = lat;
 root["longitude"] = lon;
 serializeJsonPretty(doc,arr);
}
```

7.2 Feature 2



7.1 Database Schema (IF APPLICATION):

To get easy, turn-by-turn navigation to places, use the Google Maps app. Maps shows you directions and uses **real-time traffic information to find the best route to your destination**. With voice navigation, you can hear traffic alerts, where to turn, which lane to use, and if there's a better route.

Navigation and info about which lane to use aren't available in all countries, regions, and languages. Oversized or emergency vehicles aren't the intended users of navigation.

Quickly orient yourself to your surroundings and nearby landmarks in Live View. You can also find how far away certain landmarks are from you and how to get there. These landmarks can include iconic places, like the Empire State Building in New York City, or easily recognizable places, like local parks and tourist attractions.

There are 2 ways to orient yourself in Live View with the use of landmarks:

- Search for a place or tap it on the map. Then, in the bottom right, tap Live.
- Search for a category, like “restaurants” or “shopping malls,” then tap **View map**.
    - Scroll through the selection of places, then choose one.
    - Tap Live.

8. TESTING

8.1 Test Cases

INTRODUCTION:

Testing is based on the behaiviour of our application It is referd five parts of testing those are load testing,stress testing,spike testing,endurancetesting,resilence testing.

LOAD TESTING:

Load test is depend up on the application speed our device is worked at moreeffective at all the time to performed in online space the load level testing result is minimum amount of load is uploaded and our application runsamount of load is uploaded and our application runs effectively it is depend up on our data speed and quality of the data .

STRESS TESTING:

Stress testing is referd to how much stress it will handeld in all stagies we upload the particular amount of stress its performed good it is advancement of of the crime rate security is having its alarming significance for school children,some applications exist to address issue and most of them internet connection which makes a solution expensive in this application we present a low cost solution and the stress test result is good

SPIKE TESTING:

Spike testing is during the time how the system will behave or performe it , the monitoring system is performed in all time to our data connection and quality .if you want to connect your mobile to device set the particular time otherwise it will be off mode set the time to the app to connect a device example child's school

timing to return to home timing our application is performed good .

ENDURANCE TESTING:

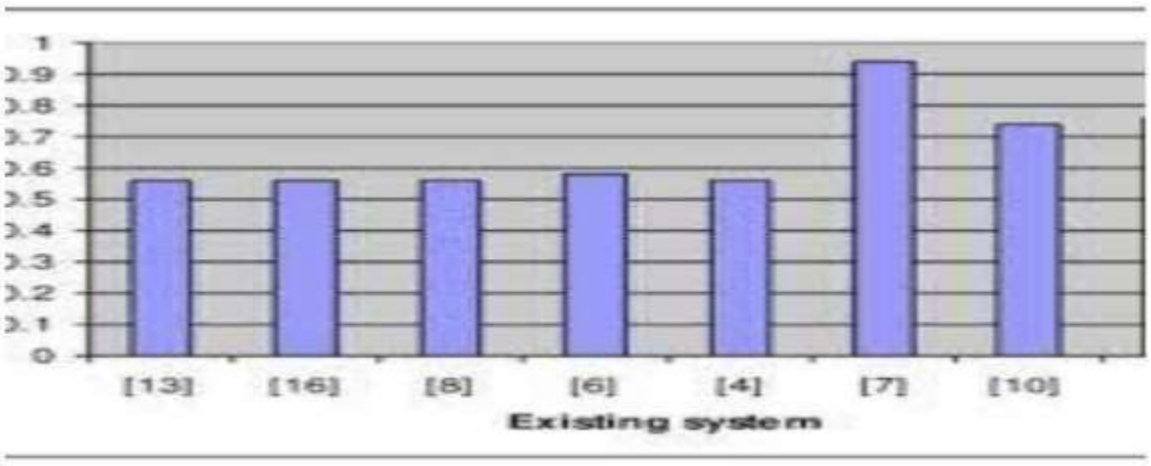
Endurance test will be approved to during the continuous stress how the application will serviced GPS provides the accurate data for tracking the children currently located and along with it also update the parents and ,GSM updates the sms to our parents mobile application this application is used to support child health care laevel and the notification is send to our parents or anic button is performed minimum level of stress to using good guide ‘s mobile , p.

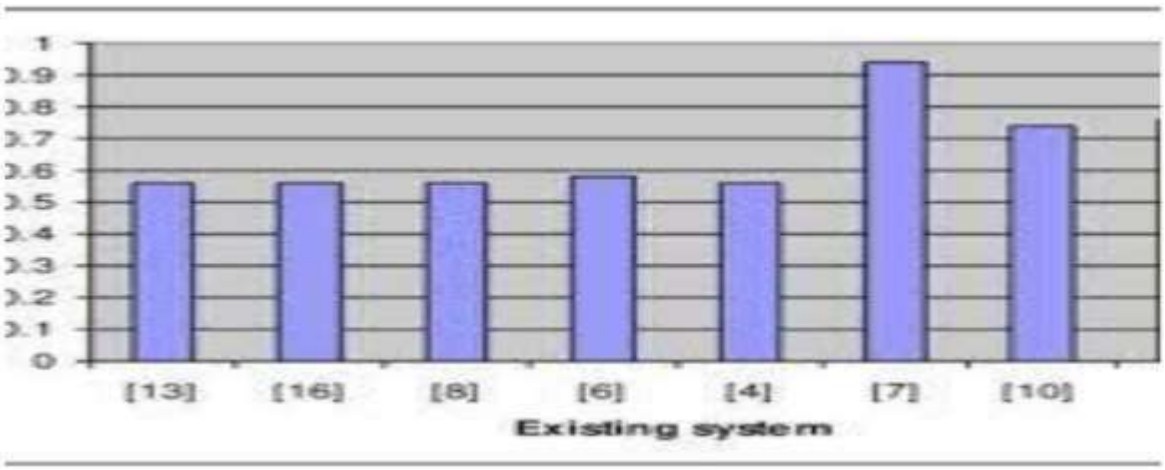
RESILENCE TESTING:

It is divided to two phase active and passive node ,active node whenever node is comming that node will pick the load if active node is dowad if active node is down the passive is pick the load automatically the testing result is good

SAMPLE GRAPH:

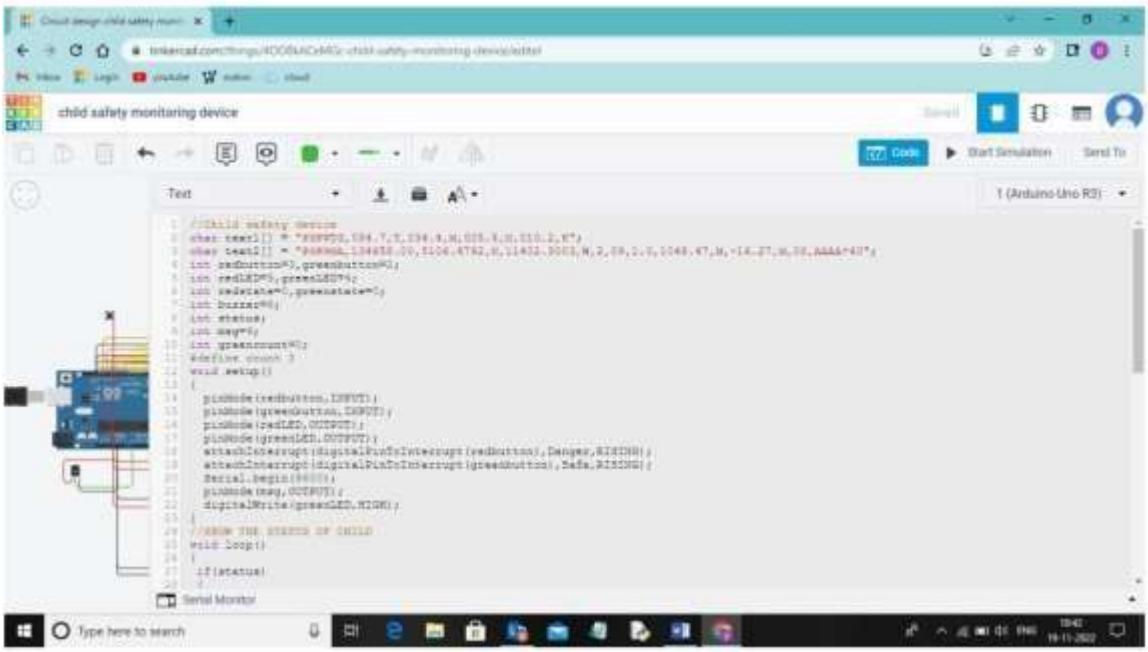
Steady state

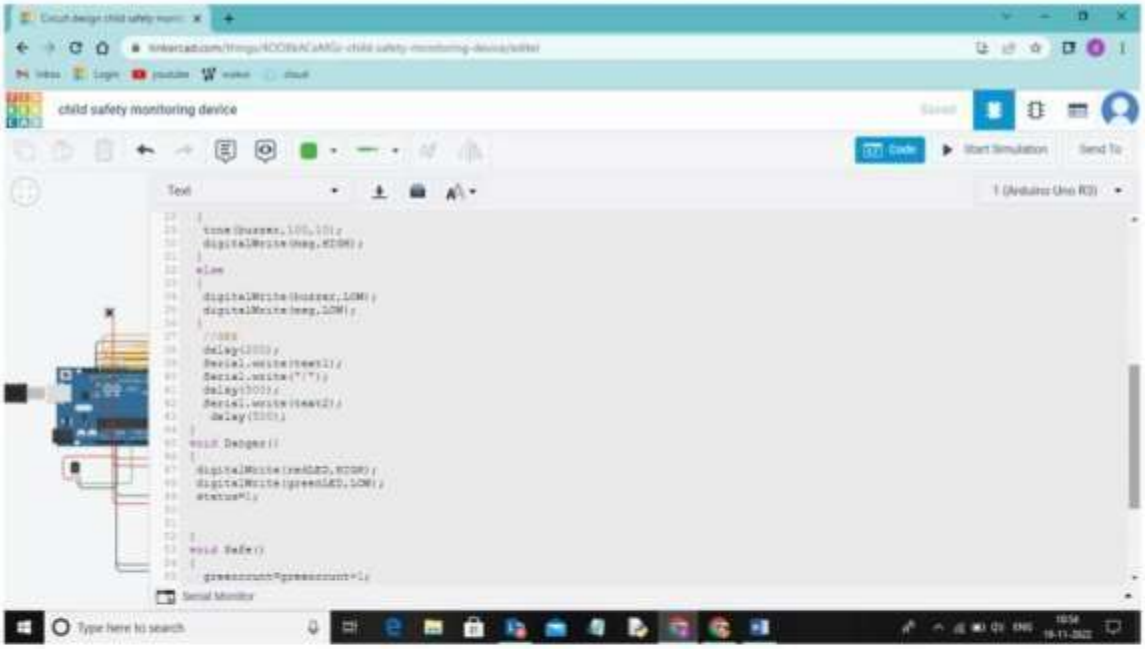


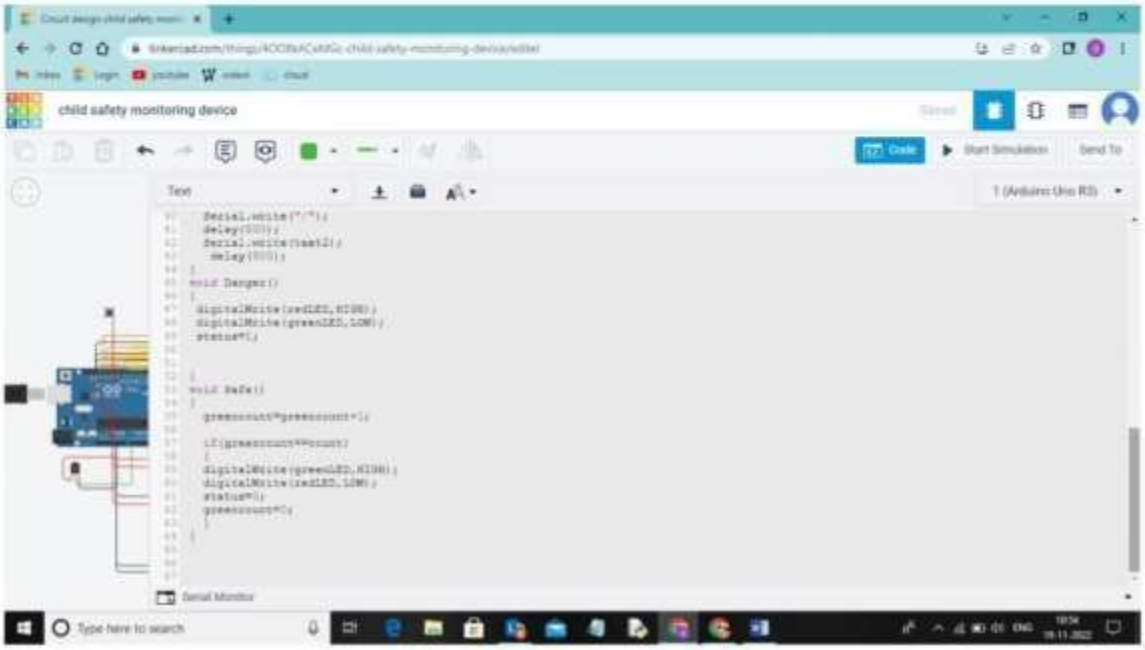


ARDUINO 1

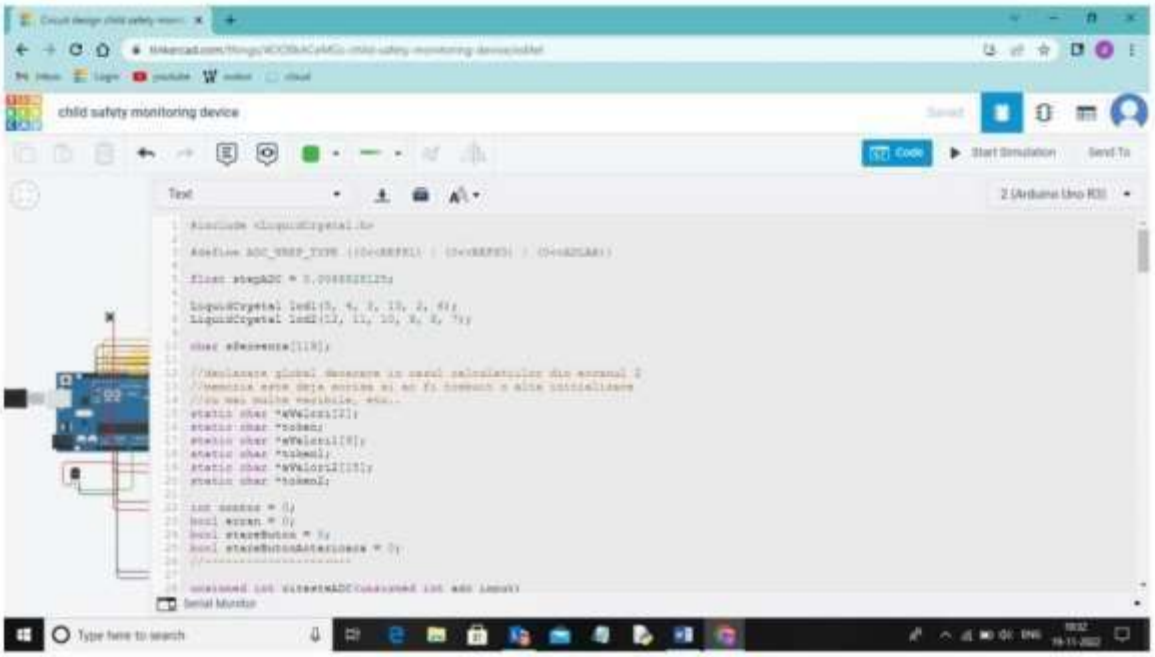
Child safety device

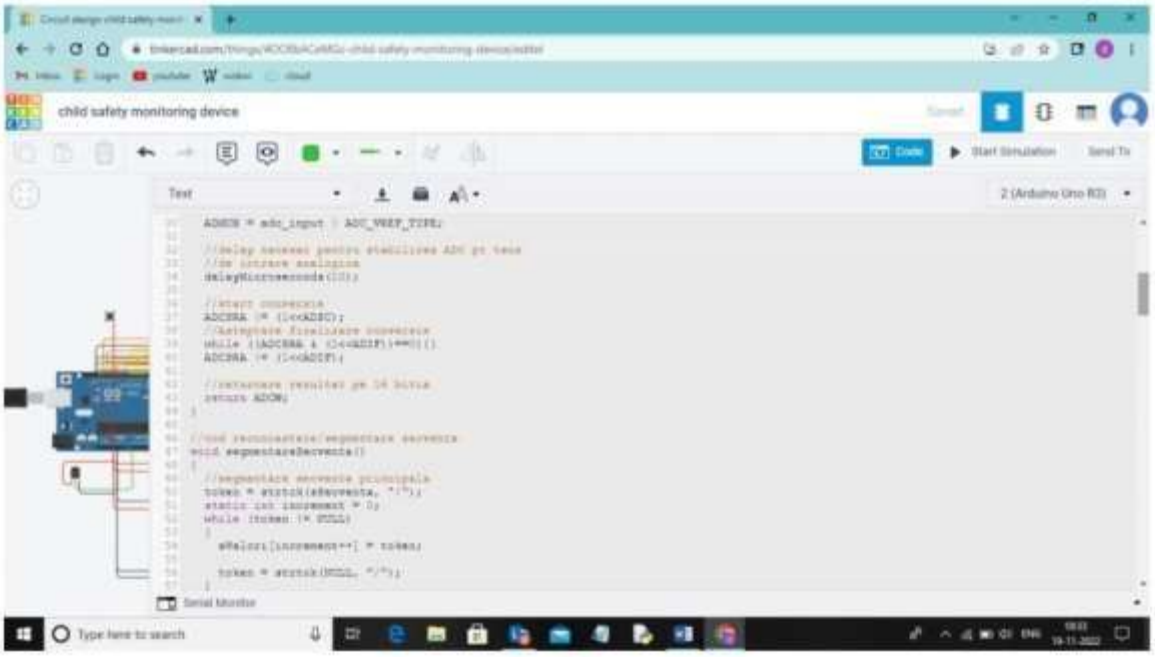


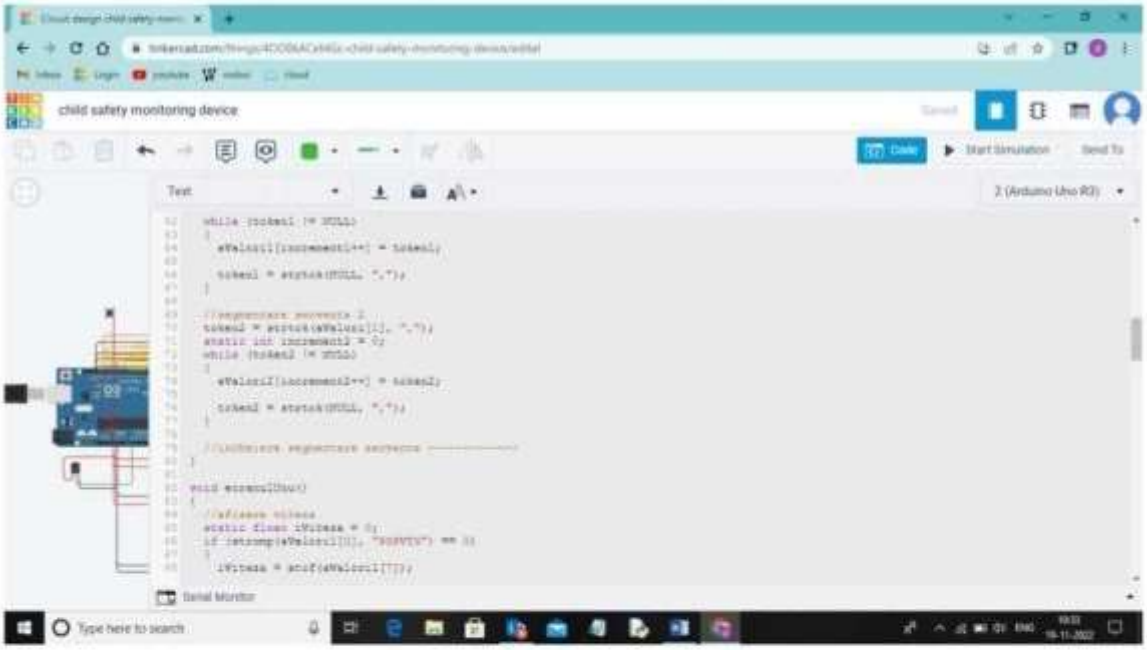

child safety monitoring device
Code
Start Simulation
Send To
Text
1 (Arduino Uno R3)
Serial Monitor
Type here to search

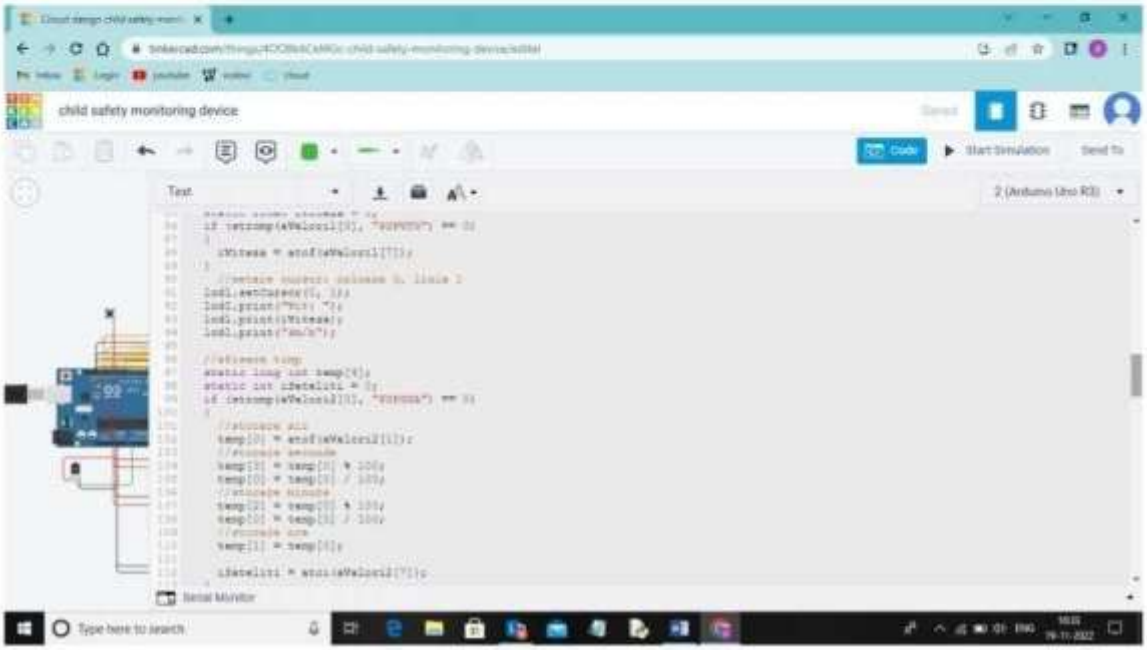

child safety monitoring device
Code
Start Simulation
Send To
Text
1 (Arduino Uno R3)
Serial Monitor
Type here to search

ARUDINO-2


child safety monitoring device
Code
Start Simulation
Text
2 (Arduino Uno R3)
Serial Monitor
Type here to search

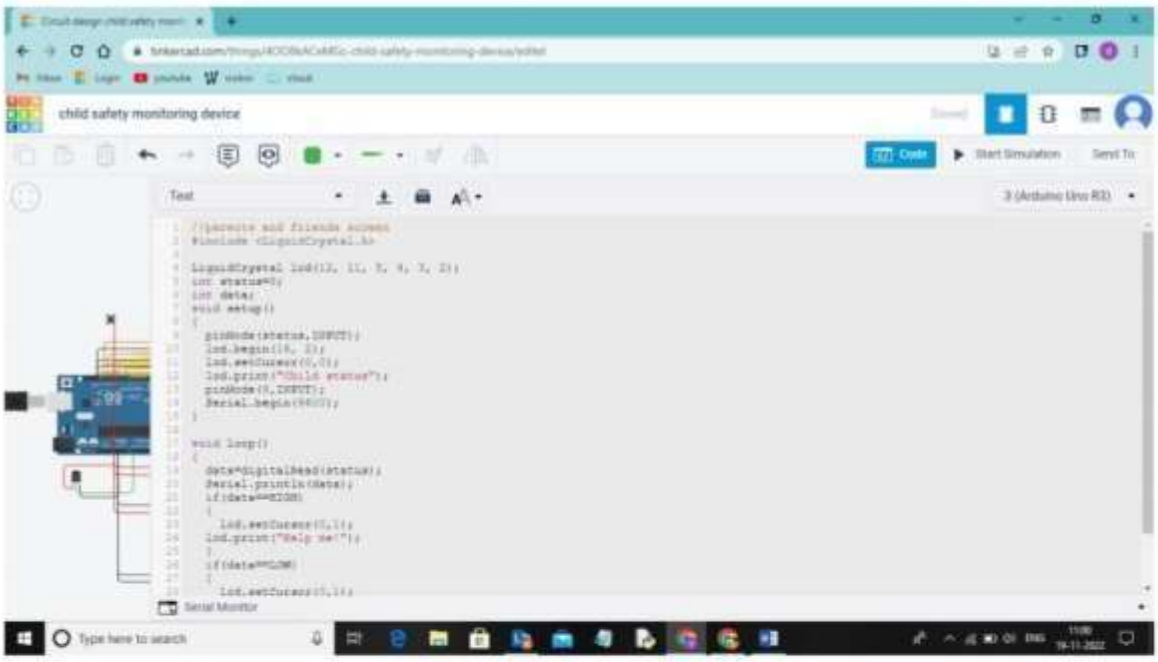

child safety monitoring device
Code
Start Simulation
Text
2 (Arduino Uno R3)
Serial Monitor
Type here to search

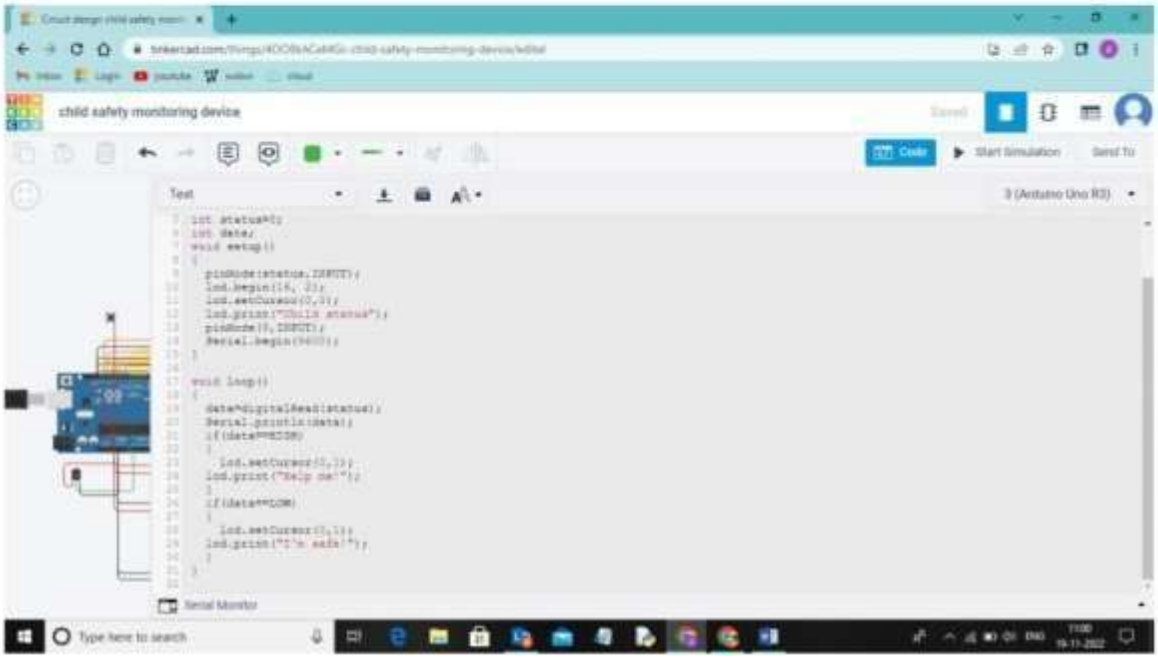

child safety monitoring device
Code
Start Simulation
Send To
Text
2 (Arduino Uno R3)
Serial Monitor
Type here to search


child safety monitoring device
Code
Start Simulation
Send To
Text
2 (Arduino Uno R3)
Serial Monitor
Type here to search

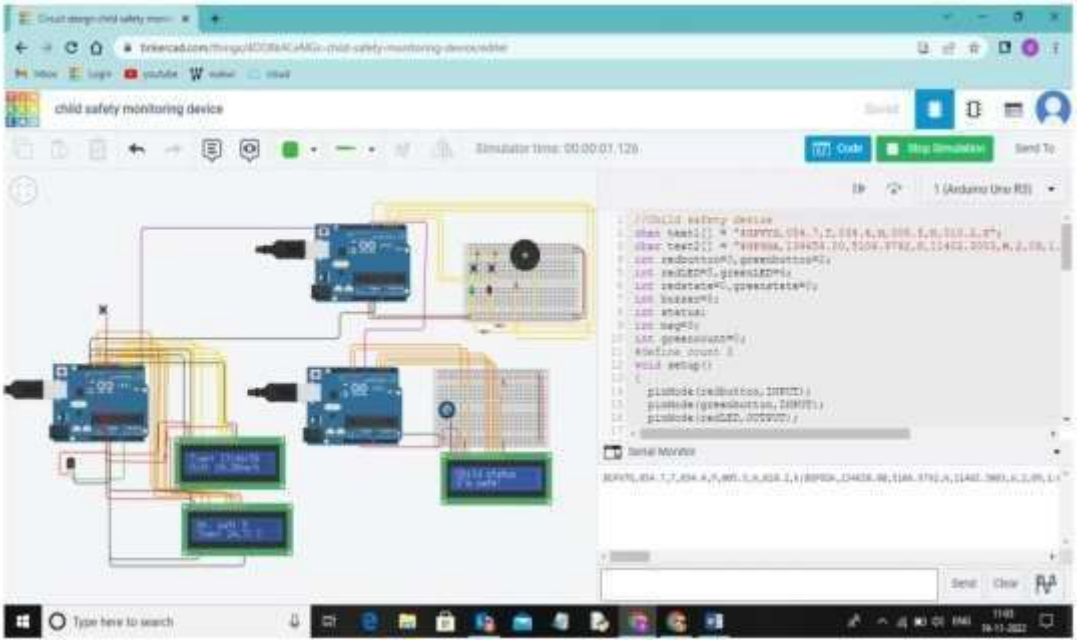
ARUDINO-3

Parents and Friends Screen





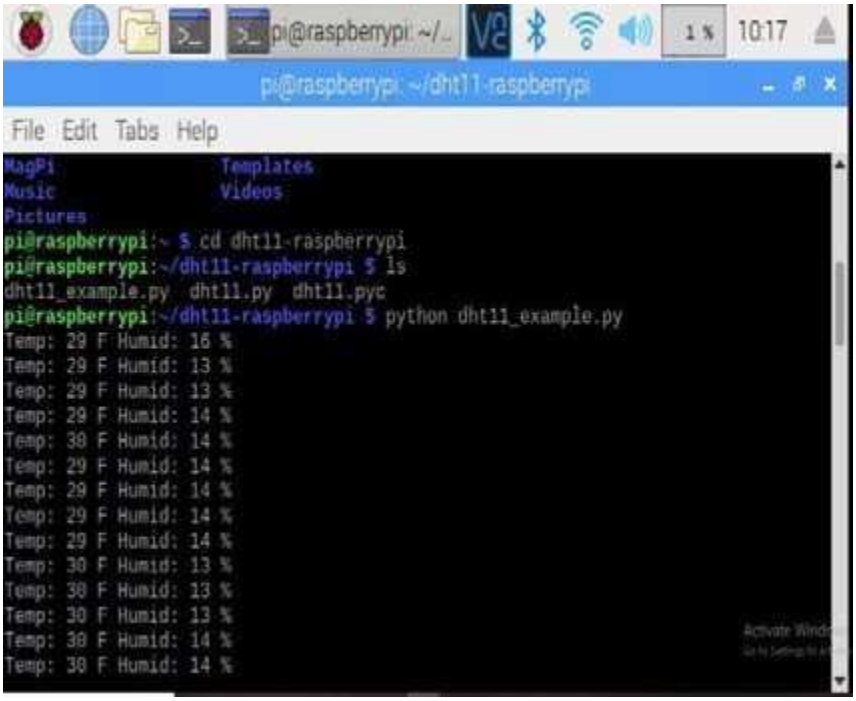
8.1 User Acceptance Testing



9.RESULT

9.1 Performance Metrics

One of the module in our project is temperature sensor which is used to detect the temperature of the child as well as the surrounding temperature. If there occurs any abnormal rise or fall in temperature in the body of the child or in the surrounding it will notify the user as per the coded time delay as shownin the picture. It will show the temperature and humidity values notifies the user based on the predefined value abnormal fall or rise scenarios.



We also have a web camera through which we can monitor the child lively through

live videostreaming whenever we get notified in abnormal cases. We have an IP address for the camera fittedwith the kit and we are supposed to enter that IP address in our mobile application or web applicationthrough which we can see the live video streaming of what's happening around the child as shown inthe picture. we can monitor the child 24/7 in real time through the help of this live streaming whichmakes parents feel that they are beside their children ensuringare beside their children ensuring children's safety.

10.ADVANTAGES & DISADVANTAGES

Advantages:

1. Save the life of the children.
2. Parent’s do their work peacefully without worrying about their children.
3. Continously monitoring the children.
4. Saves time.
5. Recovery of the children is easy,if the children lost.

Disadvantages:

1. Young Children may refuse to cooperate unless allowed to play with their gadgets.
2. Easily misusing the device.
3. No water proof.

11. CONCLUSION

The child tracking system that helps parents track the movements of children with the help of GPS technology. The entire location data is stored in database. This proposed app can shows the whether the children inside the geofence or outside the geofence to the parent's mobile . Even if the software is not running, the details are shown. It is because location access is available in the background and the software performs well on the mobile device. Based on the availability of the parent user, additional geofences may be required. Performance Requirements are summarized as follows: login, Location status, temperature ,Live on map etc. The system shall allow the user to create and/or log in to an account. The system shall allow the user to find the exact location of the children using GPS. The system shall allow the user to track the current location of the children using GPS.

12. FUTURE SCOPE

1. Childs surrounding can be located with the help of accurate and precise real time location.

2. Surrounding environment temperature, SOS light along with Distress buzzers are provided in this system.

3. If child crosses the geofence ,call goes to the registered mobile number's.
4. This gadgets will be modified that has been suitable for all environments.

13.APPENDIX

Source Code

```
import time
import wiotp.sdk.application
from twilio.rest import Client
import twilio_keys


myConfig = {
    "identity": {
        "orgId": "fjde2i",
        "typeId": "Tracker",
        "deviceId": "28",
    },
    "auth": {
        "token": "123456789"
    }
```

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

# in area location

#latitude = 17.4219272
#longitude = 78.5488783

# out area location

latitude = 30.4219272
longitude = 108.5488783

if (latitude != 17.4219272) and (longitude != 78.5488783):
    client1 = Client(twilio_keys.account_sid, twilio_keys.auth_token) message
    = client1.messages.create(
```

```
body="Dear Parent/Guardian,"




"\nYour child is out of range!!!", from_=twilio_keys.twilio_number,
to=twilio_keys.target_number
)




while True:


name = "Child"



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 Platform: ", myData) time.sleep(5)


client.disconnect()
```

GitHub & Project Demo Link

GitHub

https://github.com/IBM-EPBL/IBM-Project-29968-1660136125

Demo Link

https://drive.google.com/file/d/13soT3QwB1T-KT1tcTexG2FC6Cwmstom_/view?usp=share_link