# UNIVERSITY COLLEGE OF ENGINEERING,NAGERCOIL

**(A CONSTITUENT COLLEGE OF ANNA UNIVERSITY,CHENNAI)**

## PROFESSIONAL READINESS FOR INNOVATION , EMPLOYABILITY AND ENTREPRENEURSHIP

# IOT BASED SAFETY GADGET FOR CHILD SAFETY MONITORING AND NOTIFICATION

**PROJECT REPORT**

**BATCH NO:B1-1M3E**

**TEAM ID:PNT2022TMID34921**

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# CHAPTER 1

## 1.INTRODUCTION

Internet of Things (IOT) is the latest technology that establishes connectivity (through internet) among the various devices or services or systems in order to little by little make automation development in all areas. Child safety is the foremost common issue emerging around the world. Parents are terrifying to send their kids to schools located at longer distances due to the behavior of unknown strangers. For every 40 seconds, a child is missing in this world which is a major drawback of the society. Parents are responsible for taking care of their own children as the children are immature about what happens to them. These innocent children are not responsible for what happens to them. Nowadays, due to economic condition and aims to focus on their child's future and career, parents are forced to crave for money. Hence, it becomes difficult to cling on to their children all the time. This problem must be rectified as the safety of children is very important.echnology 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. In our system, we provide an environment where this problem can be resolved in an efficient manner.

## 1.1.PROJECT OVERVIEW

The idea of this project is to design and implement the “Child Safety Wearable Device” for the safety of the children. According to this proposal, parents can monitor the child’s real time location from anywhere. When the child is out of the limited area then the parent get notification. And also, then parent can monitor the child’s health by using the temperature sensor and heartbeat sensor. If there are any changes in child’s body temperature and pulse rate then the parent get notification and secure the child. The child can also send alert message along with their location to their parents by access the panic button when they feel insecure. So, the parent get alert and save the child from critical situations. Finally, it assists parents to monitor their children remotely from anywhere and anytime.

## 1.2.PURPOSE

The proposed model can be used in each and every house containing small kids. It is helpful for the parents who are playing role as an employee. As it ensures the safety of the children, it would be very much useful for the society. It can be used and monitored the child location and health condition from anywhere. So that the parent can secure the child when they are away from them.

# CHAPTER 2

## 2.LITERATURE SURVEY

Sunaina Nayak [1]: Attacks on children have been on the rise at an unprecedented rate in recent years, with victims finding themselves in perilous situations with little chances of contacting their families. The main goal of this project is to create a smart wearable device for children that uses advanced technology to ensure their safety. As a result, this strategy is perceived as sending an SMS from the children\'s wearable to their parents or guardians. This project employs cutting-edge technology to protect the youngster through the use of a GSM module, ensuring that the child does not feel abandoned while dealing with such social issues. An Arduino Nano, GSM, GPS, temperature sensor, heartbeat sensor, and a panic button will be included in the wearable. The heartbeat sensor detects the child\'s heart rate and delivers it to the guardian on a regular basis. If the child falls suddenly, the accelerometer detects it and alerts the parents. As a result, the parent has a sense of security.

Munaf.S[2]: The paper focuses on a smart wearable device used for children. The main benefit of this wearable compared to other wearable is that it can be used in any of smart mobile phones and does not need a very costly mobile phone and not a highly technical human. The main idea of this wearable safety system is to aid the parents in finding their child very easily. In the current scenario, there are lot of wearables that monitors the routine behavior and activities of children and also help to find the child using Wireless Fidelity (Wi-Fi) and Bluetooth services that are available on the device. But both of them seems to be an unsecured communication in between the parent and the child. Therefore, the objective of this paper is SMS (Short message service) text enabled link in between the child's wearable and the respective parent. The main idea for

achieving this is Global System of Mobile Communication (GSM). The parent has to send a text message in the form of SMS using words like “Temperature”, “SOS”, “Location”, “Buzz” etc., to the wearable system. The wearable device sends an acknowledgement in the form of a text showing the location of the child and will provide the atmospheric temperature, so that the parents can have a track if the temperature does not suit the child. The next measure that can be taken is by using a SOS Light that is bright. Distress alarm buzzer present on the wearable device can also be activated by the parents through SMS text to display the SOS signal very clearly and rings an alarm which the nearby public can immediately react to the safety of the child till the parents come or they can try to reach he parents and assist in locating the child.

Bannuru Ranjeeth [3]: Child security is the foremost common issue emerging around the world. There are numerous issues to youngster security and this work primarily manages kid security from the dangers like missing, abducts. The Technical point of this task is to have an ordinary correspondence between the kid and parent through the gadget which helps in finding the area, pulse and temperature of the kid utilizing the gadget empowered with the pulse sensor, temperature sensor and GPS tracker. This gadget empowers association between the youngster and parent through the WIFI module cooperation utilizing IoT. The parent can get to the kid data intermittently by interfacing through this gadget. This makes guardians defend youngsters even in their nonattendance. The data is stored into a cloud permanently to keep the track record of old data of the children for further reference. The sensors are activated automatically when they are subjective to the miscellaneous activities. N.

Senthamilarasi[4]: The overall percentage of child abusements filed nowadays in the world is about 80%, out of which 74% are girl children and the rest are boys. For every 40 seconds, a child goes missing in this world. Children are the backbone of one's nation, if the future of children was affected, it would impact the entire growth of that nation. Due to the abusements, the emotional and mental stability of the children gets affected which in turn ruins their career and future. These innocent children are not responsible for what happens to

them. So, parents are responsible for taking care of their own children. But, due to economic condition and aims to focus on their child's future and career, parents are forced to crave for money. Hence, it becomes difficult to cling on to their children all the time. In our system, we provide an environment where this problem can be resolved in an efficient manner. It makes parents to easily monitor their children in real time just like staying beside them as well as focusing on their own career without any manual intervention.

Fitsum Tesfaye[5]: This paper is based on IOT (Internet of Things). As we know in present era everything is based on digital technology. Human being is going to connect each other by using mobile network. This paper proposes an SMS based solution to reduced parents insecurity and schools to track children's in real time. Different devices are connected with a single device through. The concerned device is connected to mobile via SMS. The device can be used by stockholders to track children and get real time data. The main Advantage of the proposed system is send location by using mobile network (GSM). Here a prototype model (device) is created which is hardware based. The work comprises ARDUINO UNO as microcontroller, along with GPS and GSM module. This device will also have the facility of different status of children by measuring the speed of hand movement of children.

Akash Moodbidri[6]: This paper discusses the concept of a smart wearable device for little children. The major advantage of this wearable over other wearable is that it can be used in any cellphone and doesn't necessarily require an expensive smartphone and not a very tech savvy individual to operate. The purpose of this device is to help parents locate their children with ease. At the moment there are many wearables in the market which help track the daily activity of children and also help find the child using Wi-Fi and Bluetooth services present on the device. But Wi-Fi and Bluetooth appear to be an unreliable medium of communication between the parent and child. Therefore, the focus of this paper is to have an SMS text enabled communication medium between the child's wearable and the parent as the environment for GSM mobile communication is almost present everywhere. The parent can send a text with

specific keywords such as “LOCATION” “TEMPERATURE” “UV” “SOS” “BUZZ”, etc., the wearable device will reply back with a text containing the real time accurate location of the child which upon tapping will provide directions to the child's location on google maps app and will also provide the surrounding temperature, UV radiation index so that the parents can keep track if the temperature or UV radiation is not suitable for the child. The prime motivation behind this paper is that we know how important technology is in our lives but it can sometimes can't be trusted, and we always need to have a secondary measure at hand. The secondary measure implemented was using a bright SOS Light and distress alarm buzzer present on the wearable device which when activated by the parents via SMS text should display the SOS signal brightly and sound an alarm which a bystander can easily spot as a sign of distress. Hence this paper aims at providing parents with a sense of security for their child in today's time.

P. Nandhini[7]: In today’s world child and women are less secure and have many issues regarding their security purpose. They have to undergo among various difficult situations and have to prove themselves every time in all critical conditions. So, for their security and safety purpose government has provided security through rules and regulation to the society. Although there are many existing systems for security purpose need of advanced smart security system is increased. In order to overcome such problems smart security system for child and women is implemented. This paper describes about safe and secured electronic system for child which comprises of an Arduino controller and sensors such as temperature LM35, flex sensor, MEMS accelerometer, pulse rate sensor, sound sensor. A buzzer, LCD, GSM and GPS are used in this project. When the child is in threat, and the offender hand touches the touch sensor which is fixed in the bad touching places of a girl child, the device senses the body parameters like heartbeat rate, change in temperature, the movement of victim by flex sensor, MEMS accelerometer and the voice of the victim is sensed by sound sensor. When the sensor crosses the threshold limit the device gets activated and traces the location of the victim using the GPS module. By using the GSM module, the victim’s location is sent to the registered contact number.

V .Lavanya[8]: The objective of this project is to safeguard the child from threads. Now a days the safety measures of children has been reduced in huge number. Thus the violence against children increasing day by day. Not only kids even women are also abused both physically and mentally. We are taking small step towards violence against the kids. Our project mainly focus on sensing the children's Temperature and Heartbeat. By monitoring the activities the state of the child is analyzed. By using GSM, if child reaches the critical state then the latitude and longitude of that particular location is sent as an alert message to the parents. In this system, it has a MEMS sensor which is used to detect the abnormal vibration and it is controlled by NodeMCU micro controller.

HM Sabaa Fathima[9]: This project discusses the concept of a smart wearable device for little children. The purpose of this device is to help the parents to locate their child with ease. At the moment there are many wearables in the market which help track the daily activity of children and also help find the child using Wi-Fi and Bluetooth services present on the device. But Wi-Fi (Wireless Fidelity) and Bluetooth appear to be an unreliable medium of communication between the parent and child. The parent can send a text as SMS with specific keywords such as "LOCATION", "TEMPERATURE", "SOS", "BUZZ", etc., to the wearable device. The device will replay back with a text containing the real time accurate location of the child and will also provide the surrounding temperature, so that the parents can keep track if the temperature not suitable for the child. The secondary measure implemented was using a bright SOS Light and distress alarm buzzer present on the wearable device which can be activated by the parents via SMS text to display the SOS signal brightly and sound an alarm which a bystander can instantly react for the child's safety till the parents arrive or they could contact the parents and help locate them. Hence this project aims at providing parents with a sense of security for their child in today's time.

Ushashi Chowdhury[10]: This paper discusses about a smart wearable device like a wristband which tracks the child from time to time to ensure their safety. If any problem occurs it would alert parents through the cell phone so that they can take immediate action. This paper focus on the SMS text enabled communication. Parents can send SMS with some keywords and the device reply

back. The device can detect the child's approximate location, it can detect the body temperature and the surrounding temperature, humidity and also the heartbeat of a child. For the emergency situation, the device would have some measures like an alarm buzzer, SOS light which will notify the bystanders to help the child. So this paper is all about the safety and security of a child to help them to recover from any type of difficulty.

## 2.1.EXISTING PROBLEM

- Kidnapping of a child by others.
- Missing children after natural disasters.
- Unaccompanied minors.
- Wrongful retention of a child.
- Undefined disappearances.
- If it was removed or missed by the child, the identification and tracking are worthless then we proposed the method of sense the body temperature of child to identify whether it is with the child or not.

## 2.2.REFERENCES


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[6]. Akash Moodbidri, Hamid Shahnasser Child safety wearable device **:** 2017 International Conference on Information Networking (ICOIN)

[7]. P. Nandhini, K. Moorthi Child Safety Wearable devices IJSDR1810024 International Journal of Scientific Development and Research (IJSDR)

[8]. V .Lavanya, C.Meenambigai, M.Suriyaa, S.Kavya Child Safety Wearable Device SSRG International Journal of Computer Science and Engineering (SSRG-IJCSE) – Special Issue ICRTCRET Mar 2019

[9]. HM Sabaa Fathima, V.Senthil Murugan Smart Wearable Device for Child Safety Using IOT Vol-6 Issue-4 2020 IJARIIE-ISSN(O)-2395-4396

[10]. Ushashi Chowdhury, Pranjal Chowdhury, Sourav Paul, Anwesha Sen, Partho Protim Sarkar Multi-sensor Wearable for Child Safety 2019 IEEE 10th Annual Ubiquitous Computing, Electronics & Mobile Communication Conference (UEMCON)

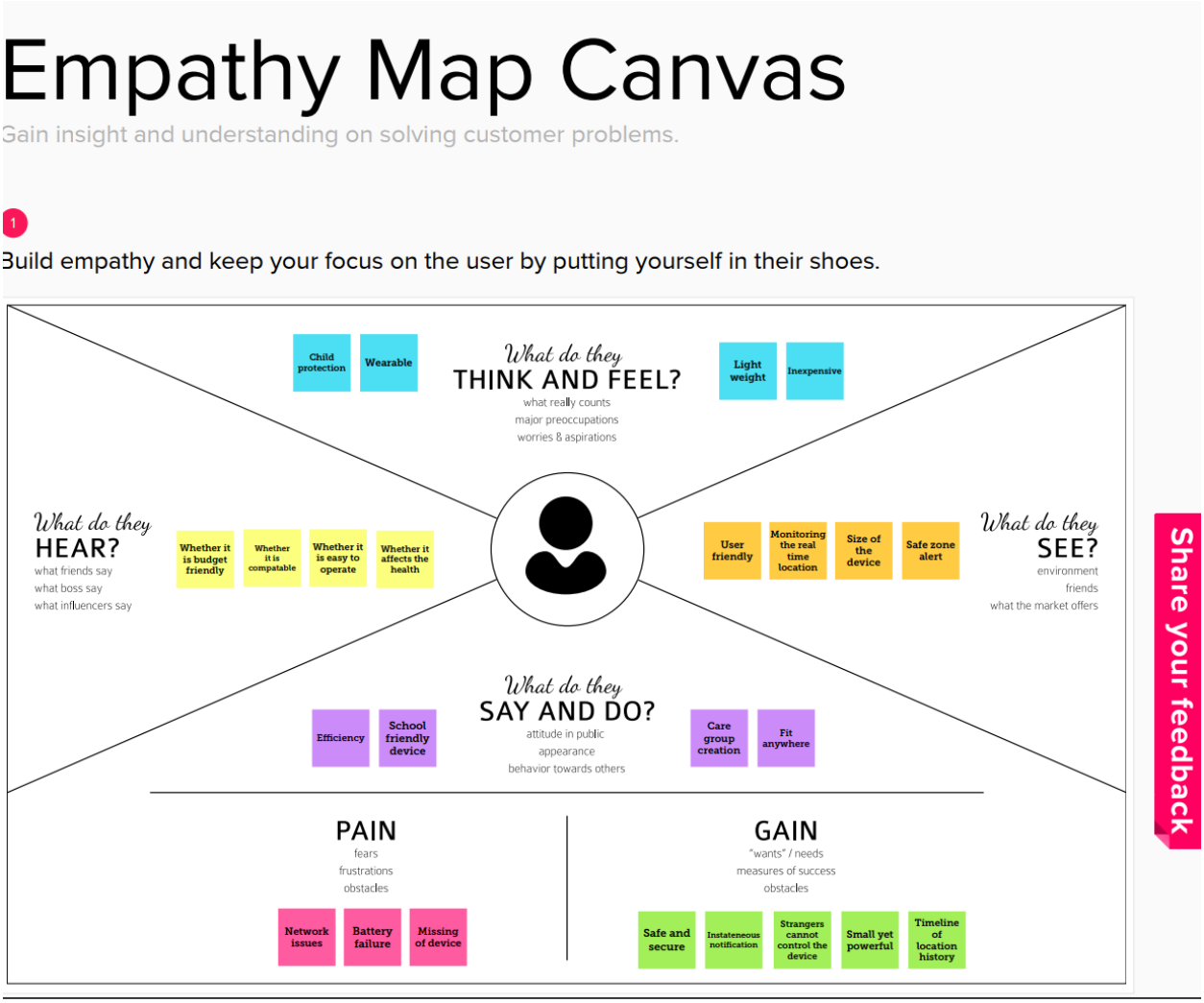
## 2.3.PROBLEM STATEMENT DEFINITION

| Problem Statement (PS) | I am (Customer) | I'm trying to | But | Because | Which makes me feel |
|---|---|---|---|---|---|
| PS-1 | I am a parent and I cannot stay with my child always as I am also an employee. | I am trying to achieve my child's safety even when I am not with him/her. | But my child does not have any safety. He/ She may also be kidnapped. | Because I may not know that what happens to the children when they are not with me. | Anxiety, Depression, Frustrated. |
| PS-2 | I am a child and I need safety while going out of the house. | I am trying to be safe and secure when my parents are not with me. Also to be aware of the kidnappers. | But I cannot inform my parents as I am in danger and so I am unable to escape from the kidnappers. | Because my parents are working and I cannot communicate with them whenever I am in need. | Fear, Insecure, Loneliness. |

# CHAPTER 3

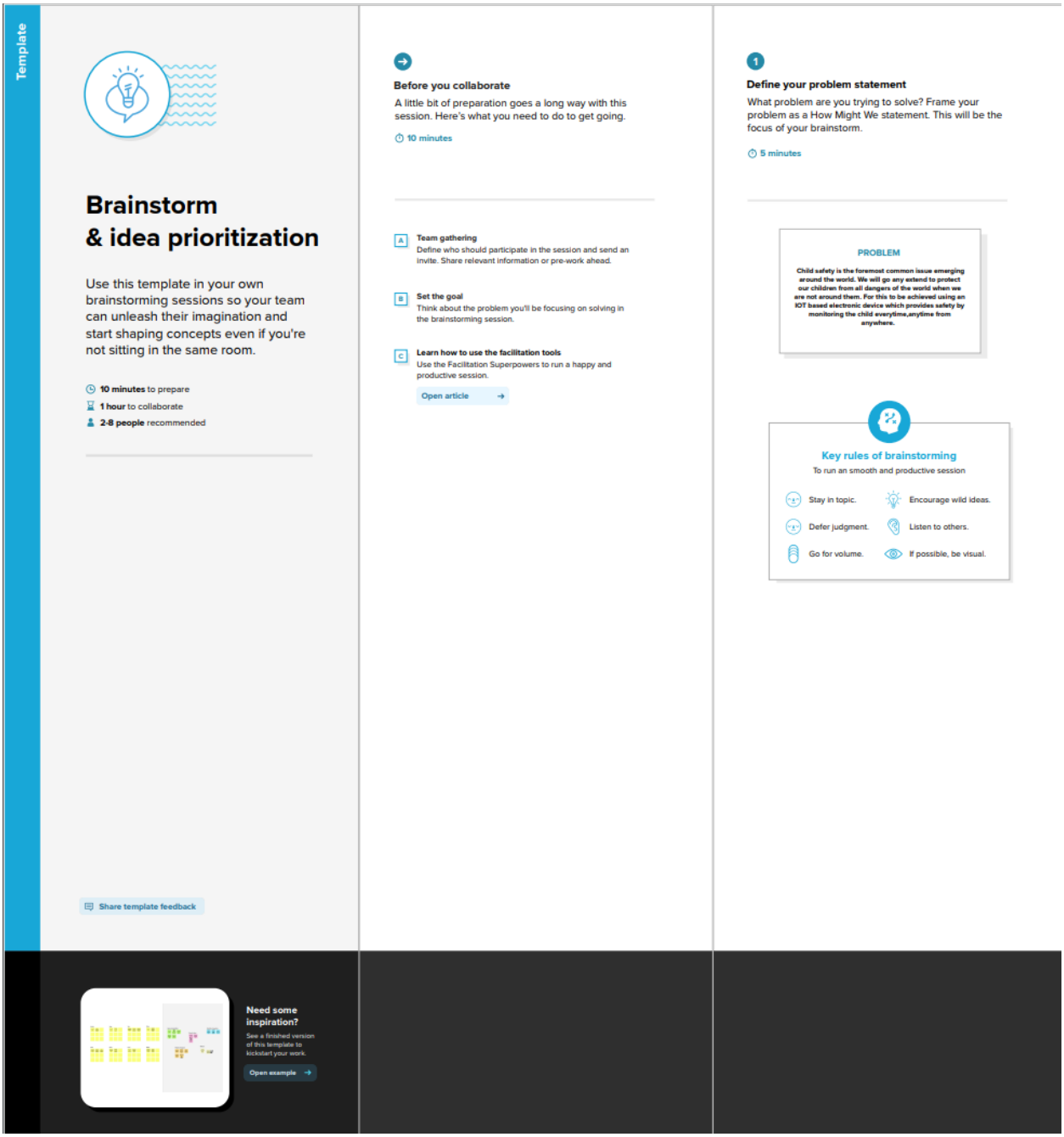
## 3.IDEATION AND PROPESED SOLUTION

## 3.1.EMPATHY MAP CANVAS

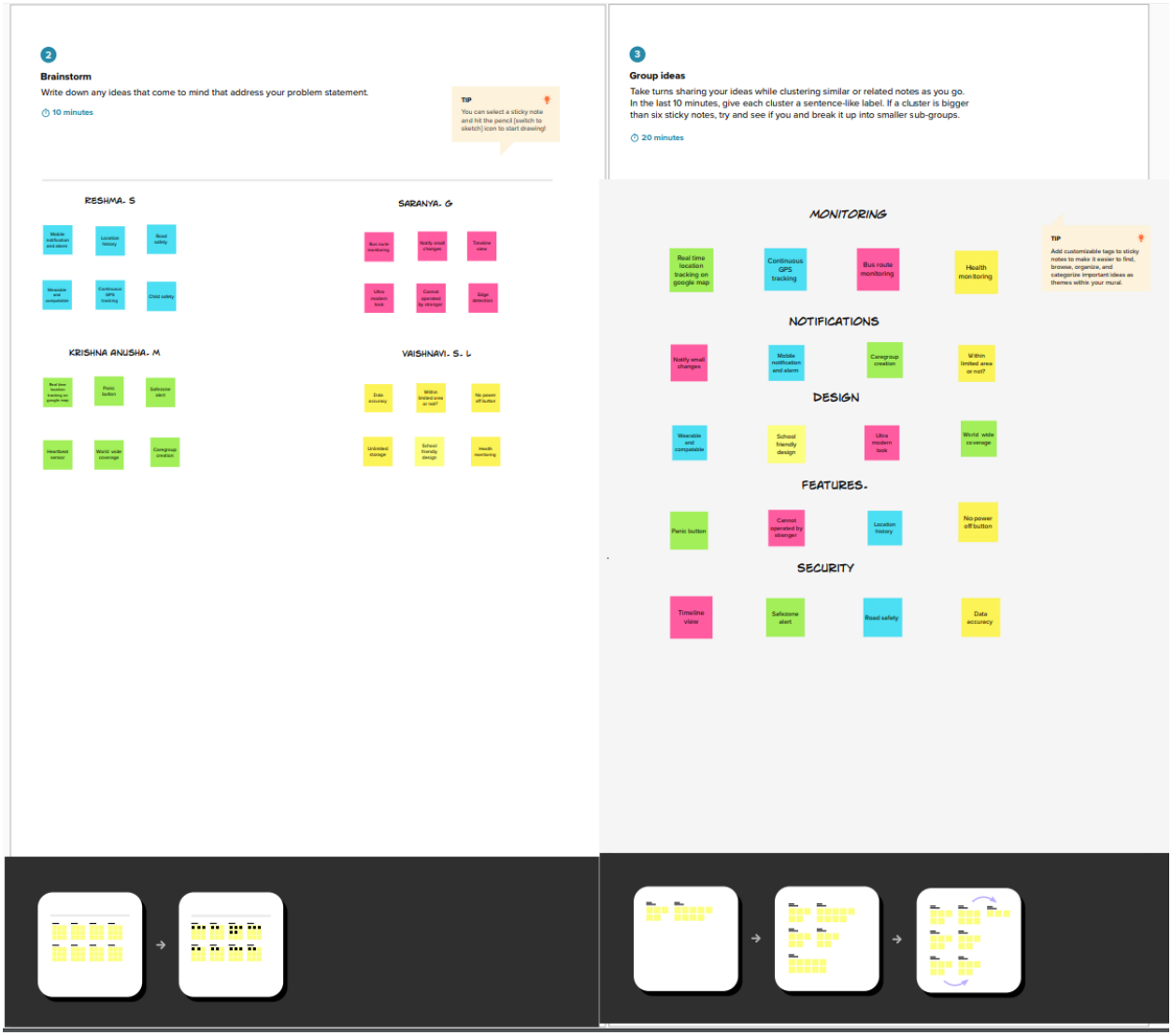


## 3.2.IDEATION AND BRAIN STORMING

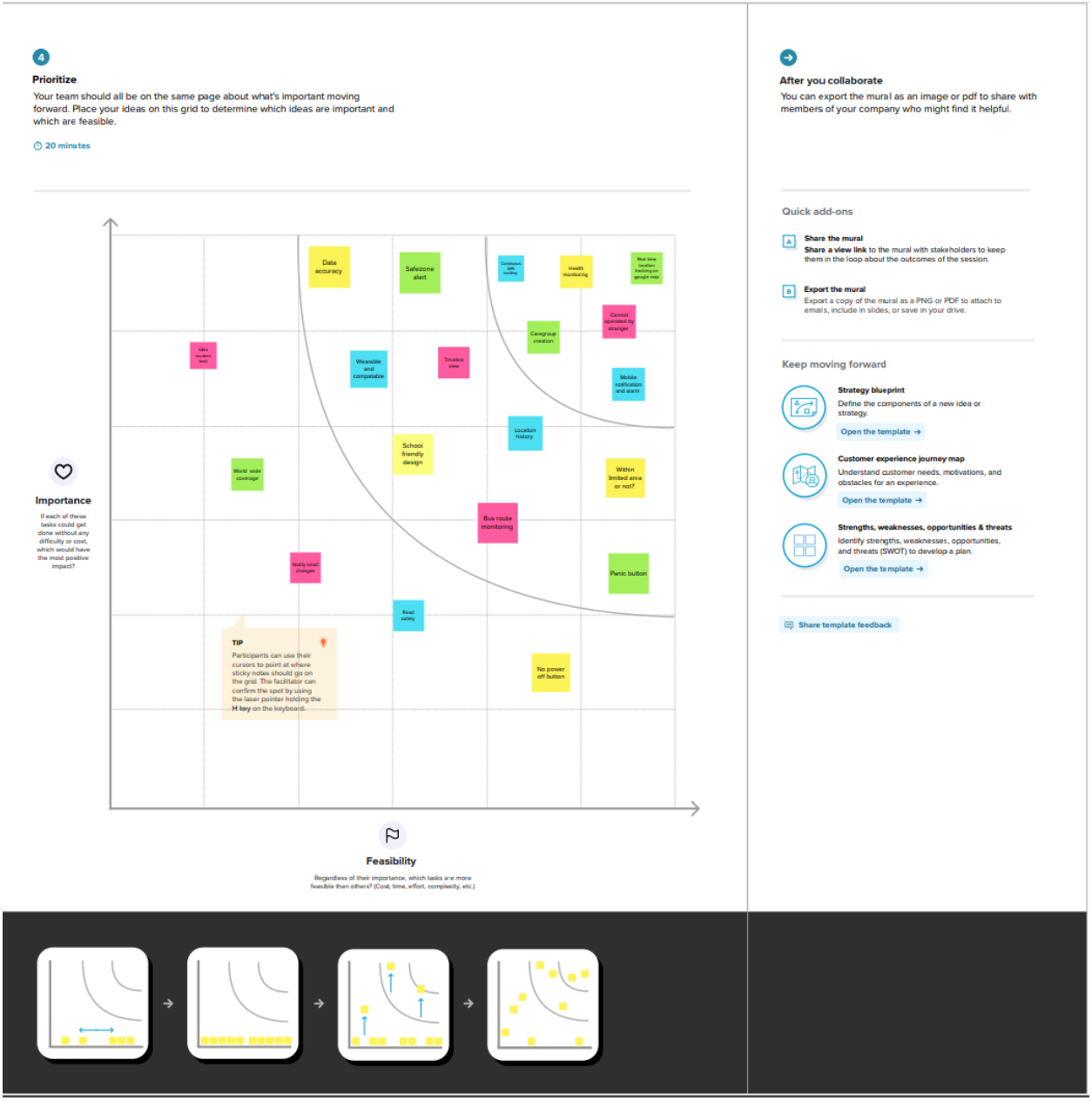
## STEP-1:TEAM GATHERING ,COLABORATION AND SELECT  THE PROBLEM STATEMENT



# STEP-2: BRAIN STORM,IDEA LISTING AND GROUPING



# STEP-3: IDEA PRIORITATION



## 3.3.PROPOSED SOLUTION

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

| S. No. | Parameter | Description |
|---|---|---|
| 1. | Problem Statement (Problem to be solved) | Child safety is the foremost common issue emerging around the world. Parents terrify to send their kids to schools located at longer distances due to the behaviour of unexpected strangers. For every 40 seconds, a child is missing in this world which is a major drawback of the society. Parents are responsible for taking care of their own children as the children are immature about what happens to them. Nowadays, due to economic condition and aims to focus on their child's future and career, parents are forced to crave for money. Hence, it becomes difficult for them to cling on to their children all the time. This problem must be rectified as the safety of children is very important. |
| 2. | Idea / Solution description | The idea of this proposal is to design and implement the "Child Safety Wearable Device" for the safety of the children. According to this proposal, parents can monitor the security of their children at any |

| | | |
|---|---|---|
| | | time.<br><br>**Panic button:**<br><br>When a child feels threatened in any situation, he/she can press the panic button, which sends an automatic message and a phone call to the parent or guardian, as well as a precise live GPS location. Panic buttons are pushbuttons which can be pressed by a person in danger. It allows users to ask for help directly. The actuation of a panic button immediately leads to an alarm and notification as explained above. It enables children to attract the attention of their parents. It is a security device.<br><br>**Heart beat sensor:**<br><br>The heartbeat sensor detects the child's heart rate and delivers it to the guardian on a regular basis. Heart rate is a standard vital sign and has become a routine measurement in healthcare. The monitoring of this signal provides information about the physiologic status of the child. Periodic update of heartbeat is done through the GSM module to deliver frequent updates to the caregiver via SMS.<br><br>**Fall Detection and Alert:**<br><br>When the user falls, there will be a large spike in acceleration, which will be detected and the live GPS location will be retrieved using the GPS module via serial communication, process the GPS data, and send the live location coordinates to the caretaker through SMS, indicating the possibility of the user falling. In addition, an automatic call will be made to the caretaker. |

| | | |
|---|---|---|
| | | **Temperature Sensor:**<br><br>A temperature sensor is a device used to measure temperature. In our case, it is used to determine the temperature of the child's immediate environment. It uses the GSM module to deliver frequent updates to the caregiver via SMS.<br><br>**Battery:**<br><br>A battery is a device that is able to store electrical energy in the form of chemical energy, and convert that energy into electricity. Batteries are used in various things that we use in our house. Batteries are used to power things like remote controls, torches, wall clocks, flashlights, hearing aids, weight scales, etc.<br><br>**Accelerometer:**<br><br>An accelerometer is an electronic sensor that measures the acceleration forces acting on an object in order to determine the object's position in space and monitor the object's movement. They are used in many ways, such as in many electronic devices, smartphones, and wearable devices, etc. The data from the accelerometer is analysed using several threshold values if there is any sudden fall movement. The user-supplied parameters, such as height, weight, and degree of activity, are used to adjust the threshold.<br><br>**GPS:**<br><br>The GPS stands for Global Positioning System. It is used for several functions. The main functions of GPS are to determine the location (position of the child), navigation (getting from one location to another), tracking (monitoring object or personal |

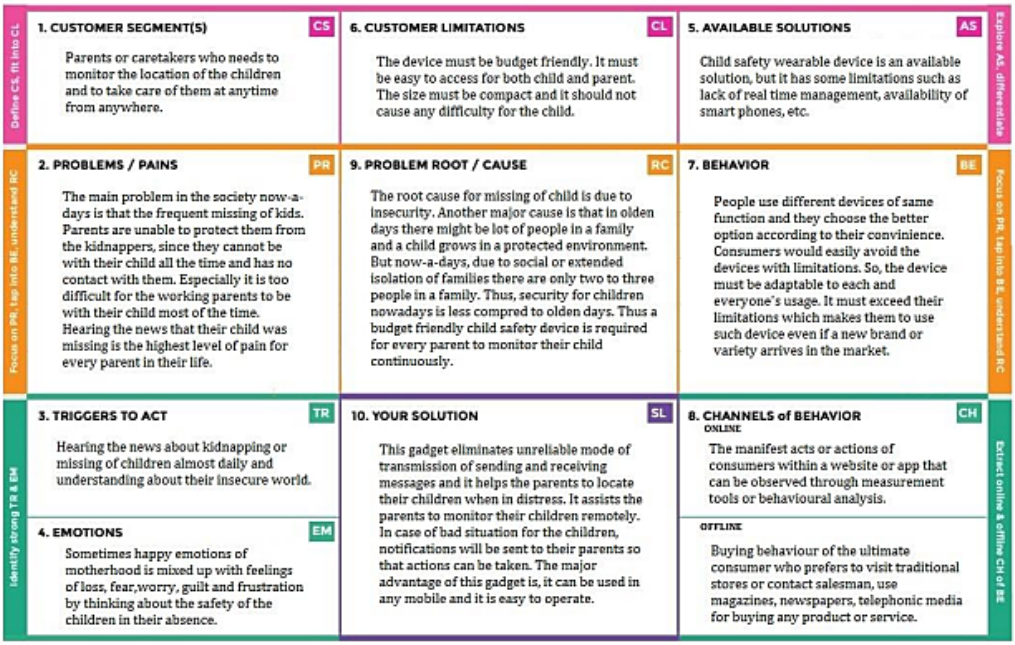
| | | |
|---|---|---|
| | | movement), mapping (creating maps of the world), timing (making it possible to take precise time measurements).<br><br>**GSM:**<br>The Global System for Mobile Communications module is intended for SMS monitoring. It is used for data security and data transmission. The GSM technology is used which uses mobile stations, base substations, and network systems.This module may be used to perform practically whatever a basic mobile phone can, such as send and receive SMS, text messages, make and receive phone calls, connect to the internet via GPRS, TCP/IP, and so on. When the panic button is touched, a text message is sent to the registered phone, coupled with a phone call and a live GPS location. Periodic updates are delivered to the caretaker through SMS using this module.<br><br>**Internet of Things (IOT):**<br>Internet of Things (IOT) is the latest technology that connects entire world. It is a system of interrelated computing devices, mechanical and digital machines, objects, animals or people that are provided with unique identifiers (UIDs) and the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction. 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. Safety is the most wanted power for everyone in today's world. 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 |

| | | |
|---|---|---|
| | | all, most of the devices that allow us to do this are hands free and portable, eliminating the need to take our devices out of our pockets. By using this device we can protect our child from kidnappers and thefts and also we can monitor our child's health condition. 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. Also as a future scope, more power efficient model can be created that holds the battery for a longer time. This project eliminates unreliable mode of transmission of sending and receiving messages and helps parents to locate their children when in distress. It assists parents to monitor their children remotely. In case situations happen, notifications will be sent to parents so that actions can be taken. Through this, child safety can be ensured and crime rate will be reduced. |
| 5. | Business Model (Revenue Model) | A business with a large profit margin naturally attracts many manufacturers to do it. Children's watches, even considered a "window" by them, continue to produce a large number of similar inferior products. Nowadays, GPS tracking technology is widely used in personal households and businesses. The GPS tracking market is rapidly growing and has an amazing potential in the future. People are becoming more and more concerned about their safety and the safety of their valuables. That's why families are starting to use mobile tracking apps and GPS trackers for their children and other loved |

| | | |
|---|---|---|
| | | ones. Companies are also tracking and managing their vehicles, delivery trucks, cargo or employees. According to Global Market Insights, "the vehicle tracking market size was valued at $8 billion in 2015 and is anticipated to exceed $22 billion by 2022." Really, there's no doubt you should start GPS tracking business today! |
| 6. | Scalability of the Solution | The proposed model can be used in each and every house containing small kids. It is helpful for the parents who are playing role as an employee. As it ensures the safety of the children, it would be very much useful for the society. It can be used and monitored from anywhere. |

## 3.4.PROBLEM SOLUTION FIT

**Problem-Solution Fit** canvas



# CHAPTER 4

# 4.REQUIREMENT ANALYSIS

## 4.1.FUNCTIONAL REQUIREMENTS

| FR No. | Functional Requirement (Epic) | Sub Requirement (Story / Sub-Task) |
|---|---|---|
| FR-1 | Register phone number | 1. Confirmation by sending OTP.<br>2. Confirmation by calling. |
| FR-2 | Navigation and tracking | 1. Monitoring the live location of the child by GPS tracker.<br>2. Check whether the child is within the limited area or not. |
| FR-3 | Notification | 1. When the child is out of the range.<br>2. When the child is reaching and leaving the school.<br>3. Sudden changes in the health of the child. |
| FR-4 | Alarm ring and sending message | 1. When the panic button is ON.<br>2. When the child is kidnapped or missing.<br>3. When the sensed data exceed the threshold value. |
| FR-5 | Privacy and encryption | 1. End to end encryption where strangers cannot operate.<br>2. Access only by parents and some family members. |

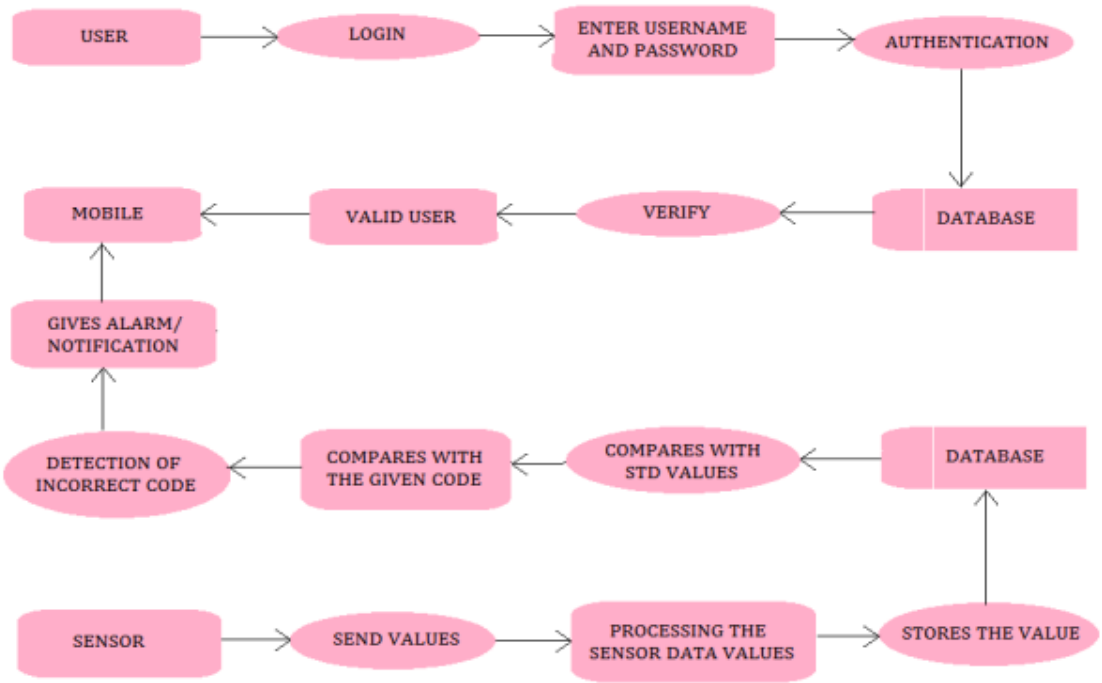
## 4.2.NON FUNCTIONAL REQUIREMENT

| NFR No. | Non-Functional Requirement | Description |
|---|---|---|
| NFR-1 | Usability | The system shall be usable within few minutes of training. |
| NFR-2 | Security | The system and sensed data can be accessed only by the parents not by the strangers. |
| NFR-3 | Maintainability | The system shall be maintainable whenever failure occurs. |
| NFR-4 | Accuracy | The system shall give the accurate result for different factors using sensing material. As a result, their will not be any distractive messages. |
| NFR-5 | Reliability | The timing of the notification directly affects how the effectivity of the system is perceived. |
| NFR-6 | Performance | The system is cost effective comparing to the features it provides. |

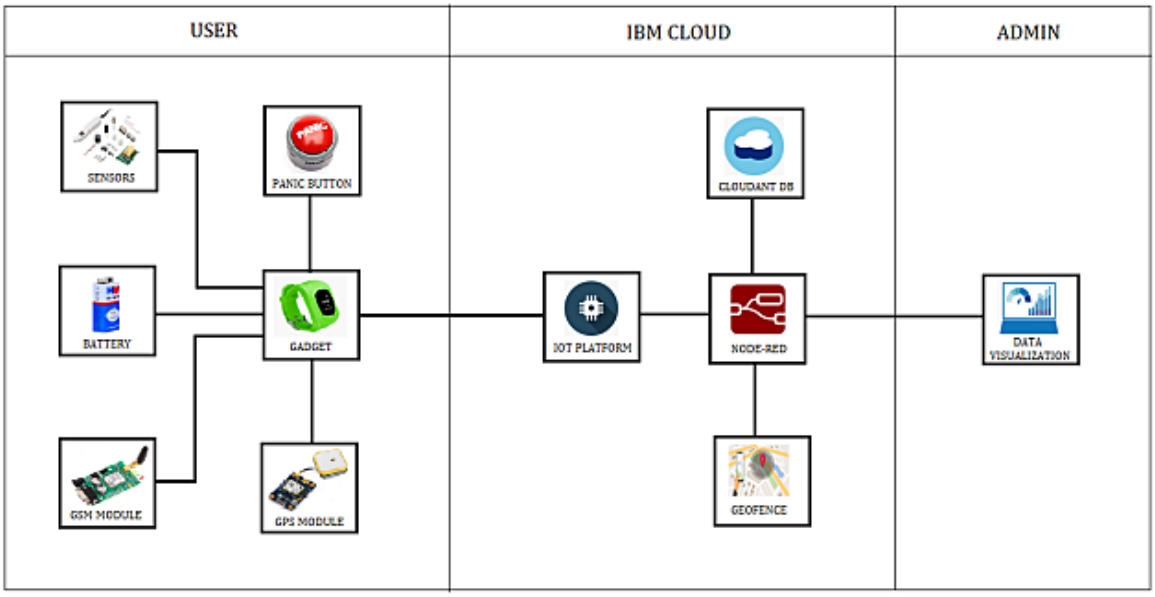
# CHAPTER 5

# PROJECT DESIGN

## 5.1.DATA FLOW DIAGRAMS



## 5.2.SOLUTION AND TECHNICAL ARCHITECTURE



## 5.3.USER STORIES

| User Type | Functional requirement (Epic) | User story number | User story / task | Acceptance criteria | Priority | Release |
|---|---|---|---|---|---|---|
| Customer (Mobile user) | Register phone number | USN-1 | As a user, I can register for the application by entering my email, password, and confirm my password. | I can access my account /dashboard | High | Sprint-1 |
| Customer (Mobile user) | GPS module | USN-2 | As a user, I can view the child's location from anywhere. | I can view the exact location of the child | High | Sprint-1 |
| Customer (Mobile user) | GSM module | USN-3 | As a user, I can receive messages using GSM module. | I can receive messages according to the child's location. | Low | Sprint-2 |
| Customer (Mobile user) | Sensors | USN-4 | As a user, I can monitor the child's health conditions. | I can detect the child's health condition. | Medium | Sprint-1 |
| Customer (Mobile user) | Navigation and tracking | USN-5 | As a user, I can track the child's location whenever it is necessary. | I can monitor the child's travelling route. | High | Sprint-3 |
| Customer (Mobile user) | Panic button | USN-6 | As a user, the child can press the panic button in the case of any problems. | I can receive message when the panic button is pressed. | Medium | Sprint-2 |
| Customer (Mobile user) | Notification | USN-7 | As a user, I will get the notification when the child is deviated from the regular pathway. | I will receive notification when the child is in danger. | Low | Sprint-4 |
| Customer (Mobile user) | Alarm ring and sending message | USN-8 | As a user, I will also get alarm ring as notification is unseen. | I can hear the alarm sound even when I am not near to he phone. | Medium | Sprint-1 |
| Customer (Mobile user) | Privacy and encryption | USN-9 | As a user, I can use my account when my known password is correct whereas others cannot use it. | I can access the account whereas the unknown strangers cannot. | High | Sprint-3 |

# CHAPTER 6

# PROJECT PLANNING AND SCHEDULING

## 6.1.SPRINT PLANNING AND ESTIMATION

| Sprint | Functional Requirement (Epic) | User Story Number | User Story / Task | Story Points | Priority | Team Members |
|---|---|---|---|---|---|---|
| Sprint-1 | Registration | USN-1 | As a user, I can register for the application by entering my email, password, and confirming my password. | 2 | High | Reshma, Saranya |
| Sprint-1 | | USN-2 | As a user, I will receive confirmation email once I have registered for the application | 1 | High | Krishna Anusha, Vaishnavi |
| Sprint-1 | | USN-3 | As a user, I can Register my phone number | 2 | Low | Saranya |
| Sprint-1 | | USN-4 | As a user, I will receive OTP or call for confirmation once I have registered for the Application | 2 | Low | Vaishnavi |
| Sprint-3 | Login | USN-5 | As a user, I can log into the application by entering email & password | 1 | High | Reshma |
| Sprint-2 | Navigation and tracking | USN-6 | As a user i can monitor the live location of the child by using geofence. | 1 | High | Krishna Anusha |
| Sprint-2 | | USN-7 | As a user i can track the location timeline of the child | 3 | Medium | Vaishnavi |

| Sprint | Functional Requirement (Epic) | User Story Number | User Story / Task | Story Points | Priority | Team Members |
|---|---|---|---|---|---|---|
| Sprint-2 | | USN-8 | Monitoring whether the child is within a limited range | 1 | High | Reshma |
| Sprint-4 | Notification | USN-9 | As a user I will receive a notification of child's real time location | 3 | Medium | Krishna Anusha |
| Sprint-4 | | USN-10 | As a user I will receive a a notification when the child is out of range | 1 | High | Reshma, Krishna Anusha |
| Sprint-4 | | USN-11 | As a user i will receive a notification When the child is reached the school | 2 | Medium | Saranya |
| Sprint-3 | | USN-12 | As a user i will receive a notification when the child is leave the school | 2 | High | Reshma, Krishna Anusha |
| Sprint-2 | Sensing | USN-13 | As a user i can sense the temperature of the child by using temperature sensor | 3 | Medium | Saranya |
| Sprint-2 | | USN-14 | As a user i can measure the pulse rate of the child by using heart beat sensor | 2 | High | Reshma, Krishna Anusha |
| Sprint-3 | Notification | USN-15 | As a user i will receive a notification when changes occurs in temperature of the child | 2 | Medium | Krishna Anusha, Saranya |
| Sprint-3 | | USN-16 | As a user i will receive a notification when changes occurs in pulse rate of the child | 1 | High | Reshma, Vaishnavi |
| Sprint-2 | Panic button | USN-17 | As a child i can press the panic button when i feel insecure | 1 | High | Reshma |
| Sprint-4 | Notification | USN-18 | As a user I will receive a notification and alarm when the child click the panic button | 2 | High | Reshma |

## 6.2.SPRINT DELIVERY AND SCHEDULING

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

**Velocity:**
Imagine we have a 10-day sprint duration, and the velocity of the team is 20 (points per sprint). Let's calculate the team's average velocity (AV) per iteration unit (story points per day)

$$AV = \frac{sprint\ duration}{velocity} = \frac{20}{10} = 2$$

# CHAPTER 7

## 7.CODING AND SOLUTIONING

```
import time
import sys
import ibmiotf.application
import ibmiotf.device
import random

organization="nimvfj"
deviceType="RSVKAIoTdevice"
deviceId="RSVKA"
authMethod="token"
authToken="R23S20V04KA26"



def myCommandCallback(cmd):
    print("Command received: %s"%cmd.data['command'])
    status=cmd.data['command']
    if status=="alert message":
        print("panic button is on")
    else:
        print("panic button is off")

try:
    deviceOptions={"org":organization,"type":deviceType,"id":deviceId,"auth-
method":authMethod,"auth-token":authToken}
    deviceCli=ibmiotf.device.Client(deviceOptions)
```

```
except Exception as e:
    print("Caught exception connecting device:%s"%str(e))
    sys.exit()
deviceCli.connect()

while True:
    lat=random.randint(-90,90)
    lon=random.randint(-90,90)

    data={'Latitude': lat, 'Longitude':lon}
 def myOnPublishCallback():
        print("Published Latitude=%s"%lat,"& Longitude=%s"%lon,"to IBM
Watson")
success=deviceCli.publishEvent("Location","json",data,qos=0,on_publish=m
yOnPublishCallback)
    if not success:
        print("Out of geofence")
    time.sleep(20)

deviceCli.commandCallback=myCommandCallback
deviceCli.disconnect()
```

# 7.1.FEATURE

Child Safety.py - C:/Python/Python37/IBM program/Child Safety.py (3.7.4)

File Edit Format Run Options Window Help

```
import time
import sys
import ibmiotf.application
import ibmiotf.device
import random

organization="nimvfj"
deviceType="RSVKAIoTdevice"
deviceId="RSVKA"
authMethod="token"
authToken="R23S20V04KA26"

def myCommandCallback(cmd):
    print("Command received: %s"%cmd.data['command'])
    status=cmd.data['command']
    if status=="alert message":
        print("panic button is on")
    else:
        print("panic button is off")

try:
    deviceOptions={"org":organization,"type":deviceType,"id":deviceId,"auth-method":authMethod,"auth-token":authToken}
    deviceCli=ibmiotf.device.Client(deviceOptions)

except Exception as e:
    print("Caughtt exception connecting device:%s"%str(e))
    sys.exit()
deviceCli.connect()

while True:
    lat=random.randint(-90,90)
    lon=random.randint(-90,90)
```

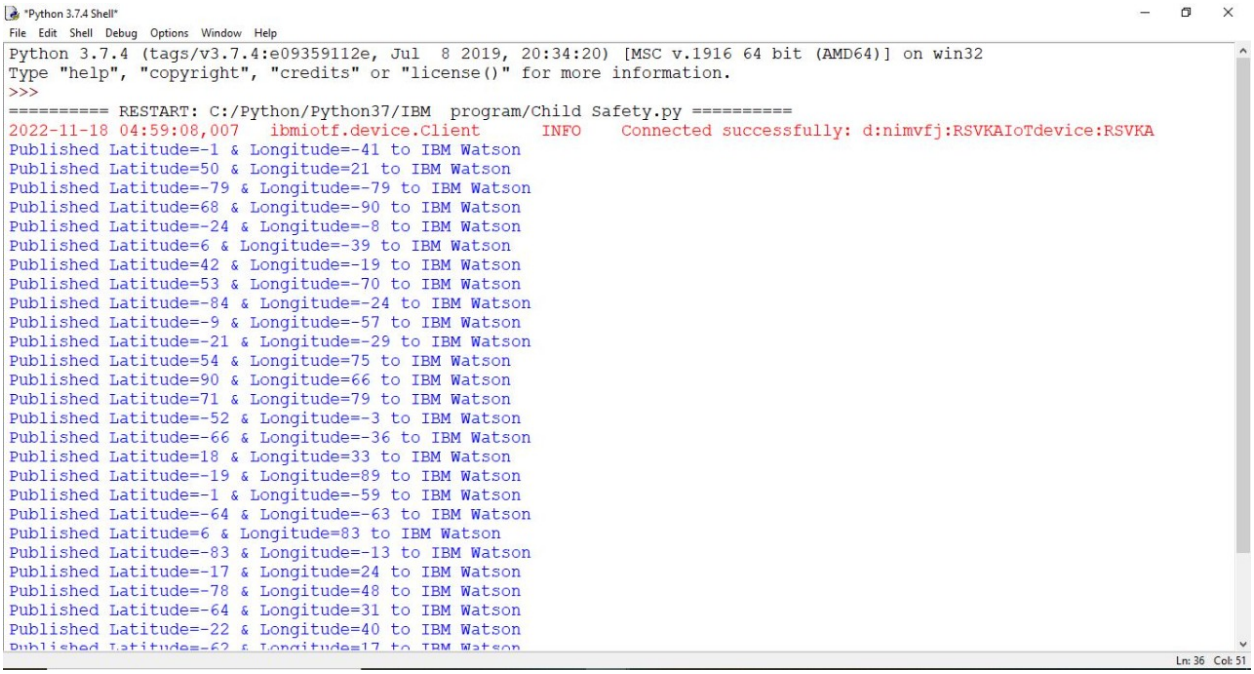
Ln: 44 Col: 0

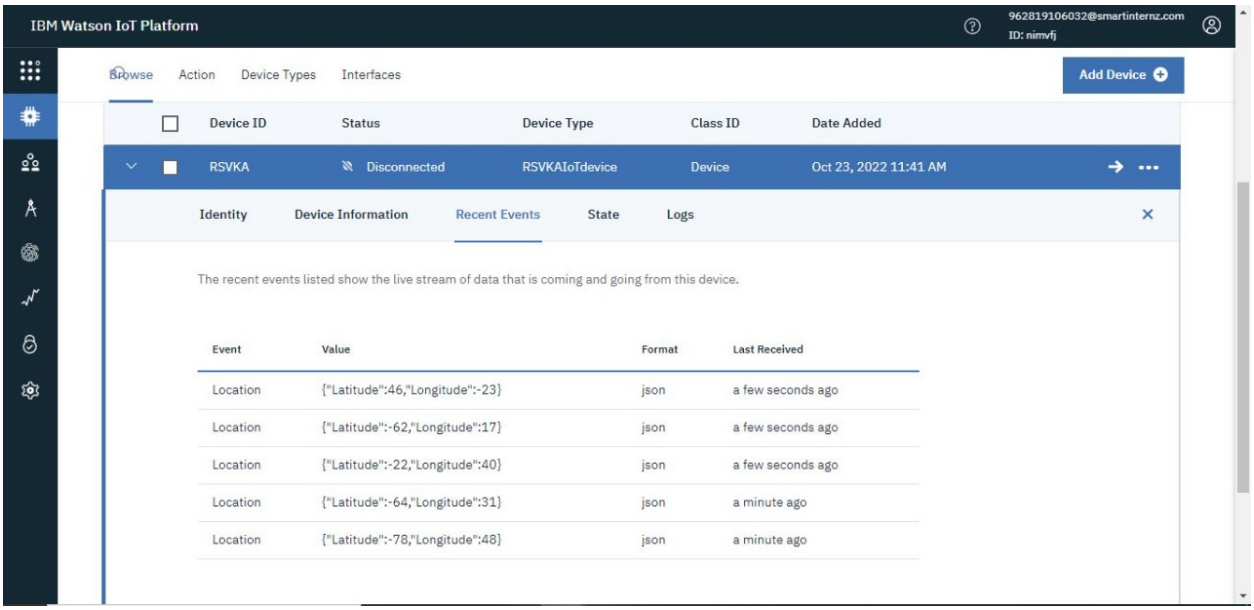
Child Safety.py - C:/Python/Python37/IBM program/Child Safety.py (3.7.4)

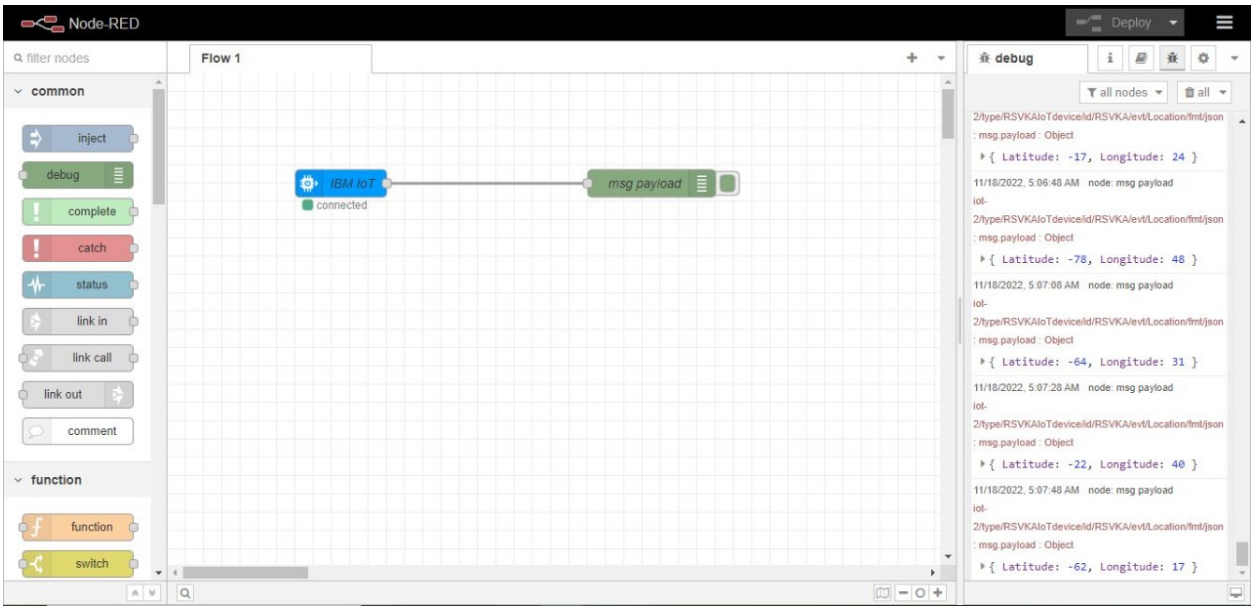
File Edit Format Run Options Window Help

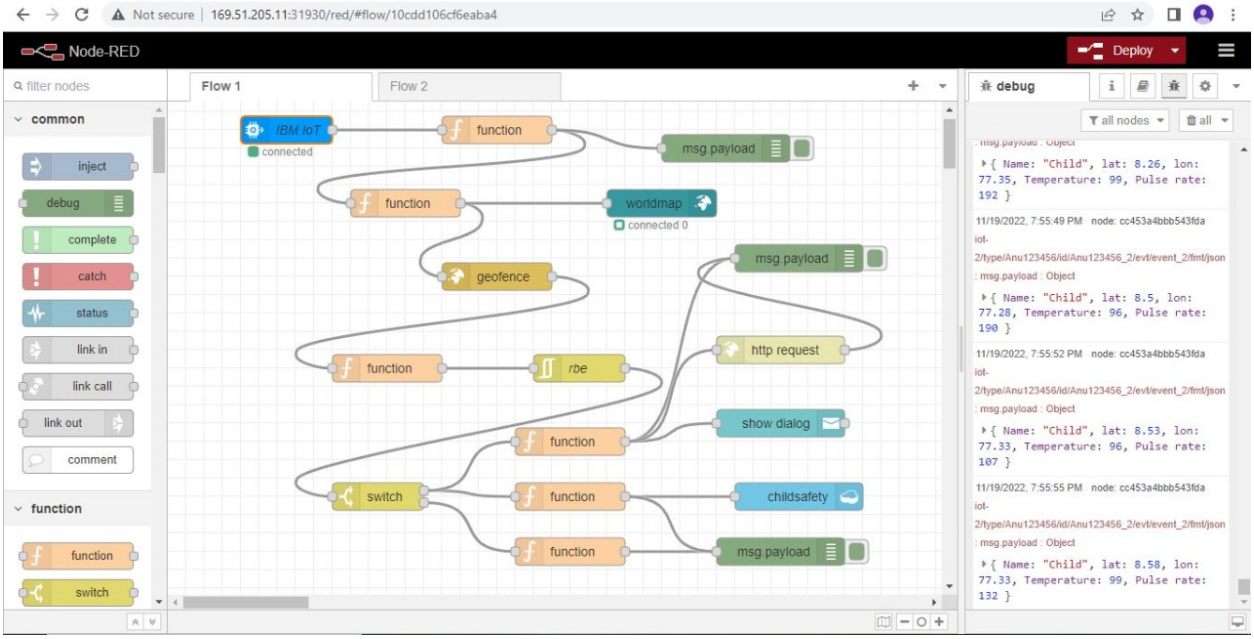
```
    status=cmd.data['command']
    if status=="alert message":
        print("panic button is on")
    else:
        print("panic button is off")

try:
    deviceOptions={"org":organization,"type":deviceType,"id":deviceId,"auth-method":authMethod,"auth-token":authToken}
    deviceCli=ibmiotf.device.Client(deviceOptions)

except Exception as e:
    print("Caughtt exception connecting device:%s"%str(e))
    sys.exit()
deviceCli.connect()

while True:
    lat=random.randint(-90,90)
    lon=random.randint(-90,90)

    data={'Latitude': lat, 'Longitude':lon}

    def myOnPublishCallback():
        print("Published Latitude=%s"%lat,"& Longitude=%s"%lon,"to IBM Watson")
    success=deviceCli.publishEvent("Location","json",data,qos=0,on_publish=myOnPublishCallback)
    if not success:
        print("Out of geofence")
    time.sleep(10)

    deviceCli.commandCallback=myCommandCallback

deviceCli.disconnect()
```

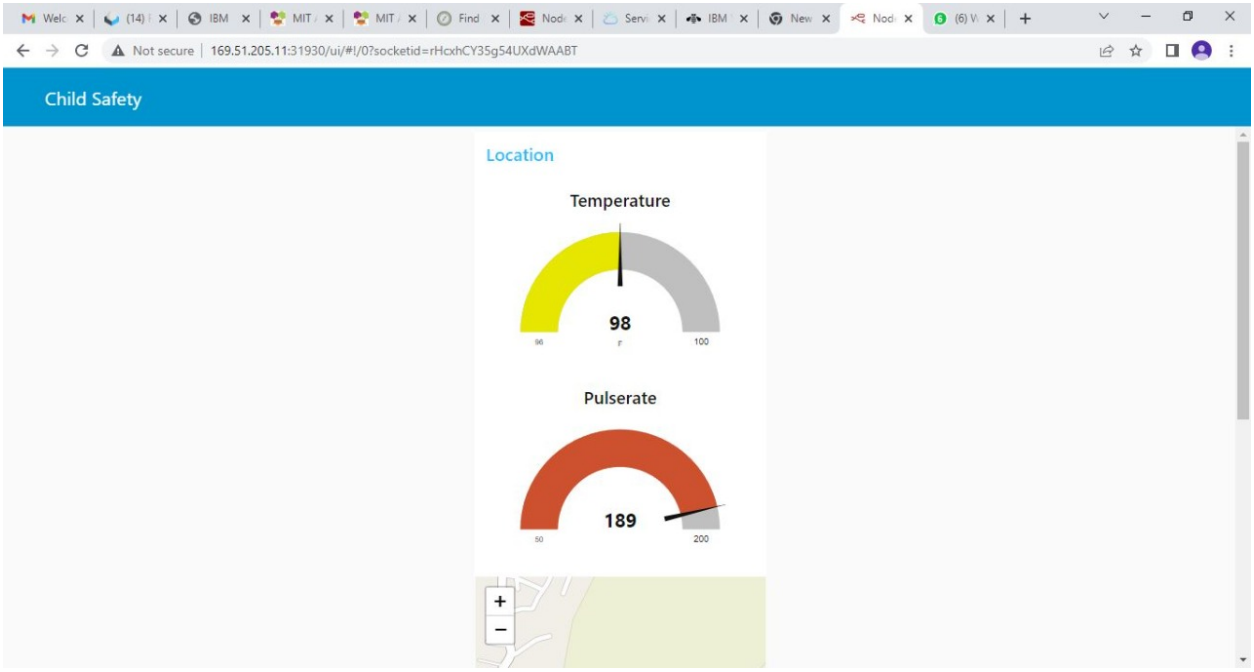
Ln: 1 Col: 0

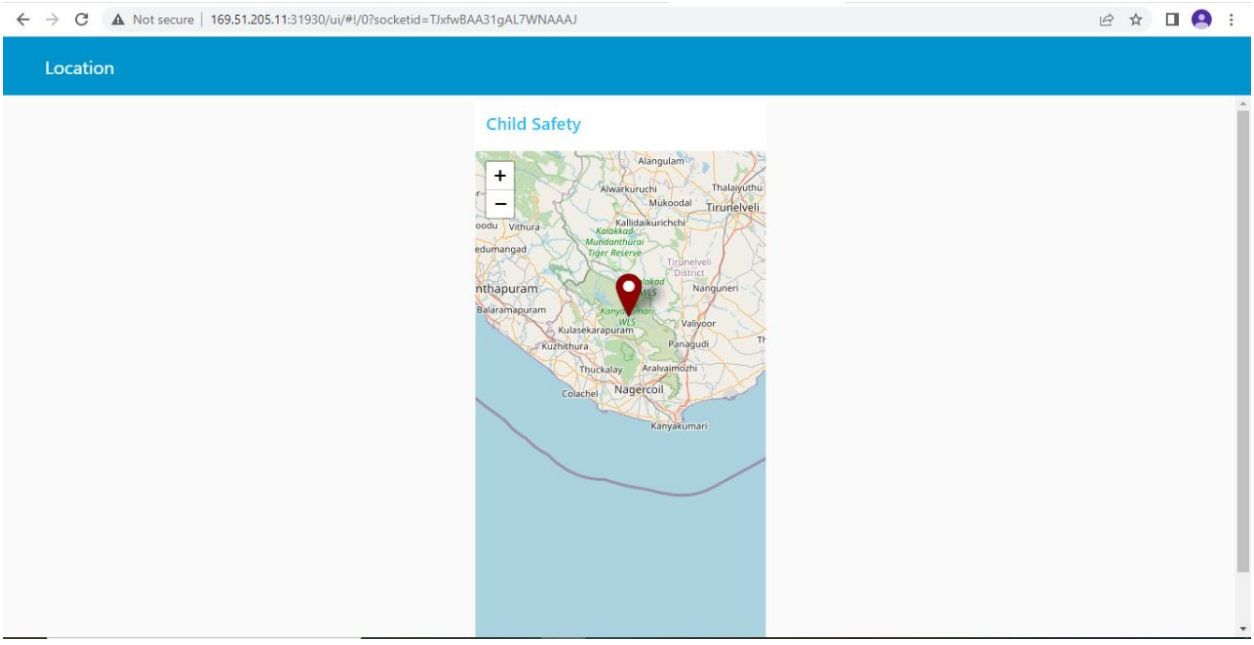

*Python 3.7.4 Shell*
File Edit Shell Debug Options Window Help
Python 3.7.4 (tags/v3.7.4:e09359112e, Jul 8 2019, 20:34:20) [MSC v.1916 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
========== RESTART: C:/Python/Python37/IBM program/Child Safety.py ==========
2022-11-18 04:59:08,007 ibmiotf.device.Client INFO Connected successfully: d:nimvfj:RSVKAIoTdevice:RSVKA
Published Latitude=-1 & Longitude=-41 to IBM Watson
Published Latitude=50 & Longitude=21 to IBM Watson
Published Latitude=-79 & Longitude=-79 to IBM Watson
Published Latitude=68 & Longitude=-90 to IBM Watson
Published Latitude=-24 & Longitude=-8 to IBM Watson
Published Latitude=6 & Longitude=-39 to IBM Watson
Published Latitude=42 & Longitude=-19 to IBM Watson
Published Latitude=53 & Longitude=-70 to IBM Watson
Published Latitude=-84 & Longitude=-24 to IBM Watson
Published Latitude=-9 & Longitude=-57 to IBM Watson
Published Latitude=-21 & Longitude=-29 to IBM Watson
Published Latitude=54 & Longitude=75 to IBM Watson
Published Latitude=90 & Longitude=66 to IBM Watson
Published Latitude=71 & Longitude=79 to IBM Watson
Published Latitude=-52 & Longitude=-3 to IBM Watson
Published Latitude=-66 & Longitude=-36 to IBM Watson
Published Latitude=18 & Longitude=33 to IBM Watson
Published Latitude=-19 & Longitude=89 to IBM Watson
Published Latitude=-1 & Longitude=-59 to IBM Watson
Published Latitude=-64 & Longitude=-63 to IBM Watson
Published Latitude=6 & Longitude=83 to IBM Watson
Published Latitude=-83 & Longitude=-13 to IBM Watson
Published Latitude=-17 & Longitude=24 to IBM Watson
Published Latitude=-78 & Longitude=48 to IBM Watson
Published Latitude=-64 & Longitude=31 to IBM Watson
Published Latitude=-22 & Longitude=40 to IBM Watson
Ln: 36 Col: 51

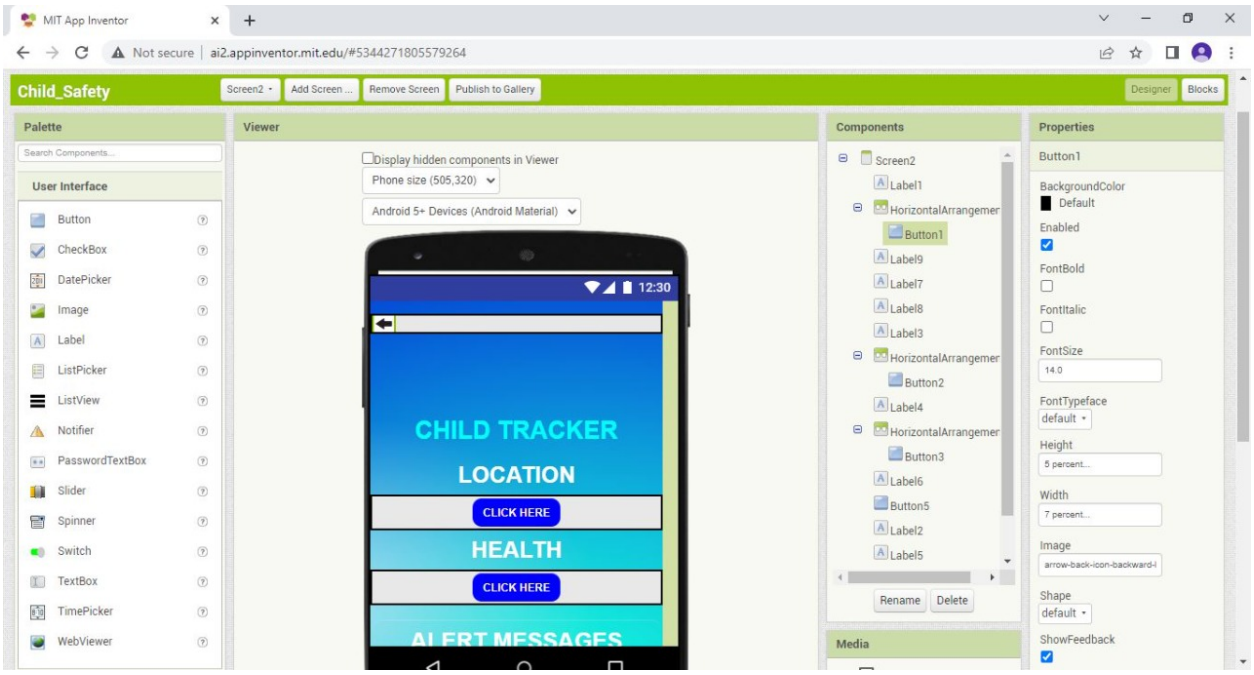

IBM Watson IoT Platform
9628191060320@smartinternz.com
ID: nimvfj
Browse
Action
Device Types
Interfaces
Add Device
Device ID
Status
Device Type
Class ID
Date Added
RSVKA
Disconnected
RSVKAIoTdevice
Device
Oct 23, 2022 11:41 AM
Identity
Device Information
Recent Events
State
Logs
The recent events listed show the live stream of data that is coming and going from this device.
Event
Value
Format
Last Received
Location
{"Latitude":46,"Longitude":-23}
json
a few seconds ago
Location
{"Latitude":-62,"Longitude":17}
json
a few seconds ago
Location
{"Latitude":-22,"Longitude":40}
json
a few seconds ago
Location
{"Latitude":-64,"Longitude":31}
json
a minute ago
Location
{"Latitude":-78,"Longitude":48}
json
a minute ago

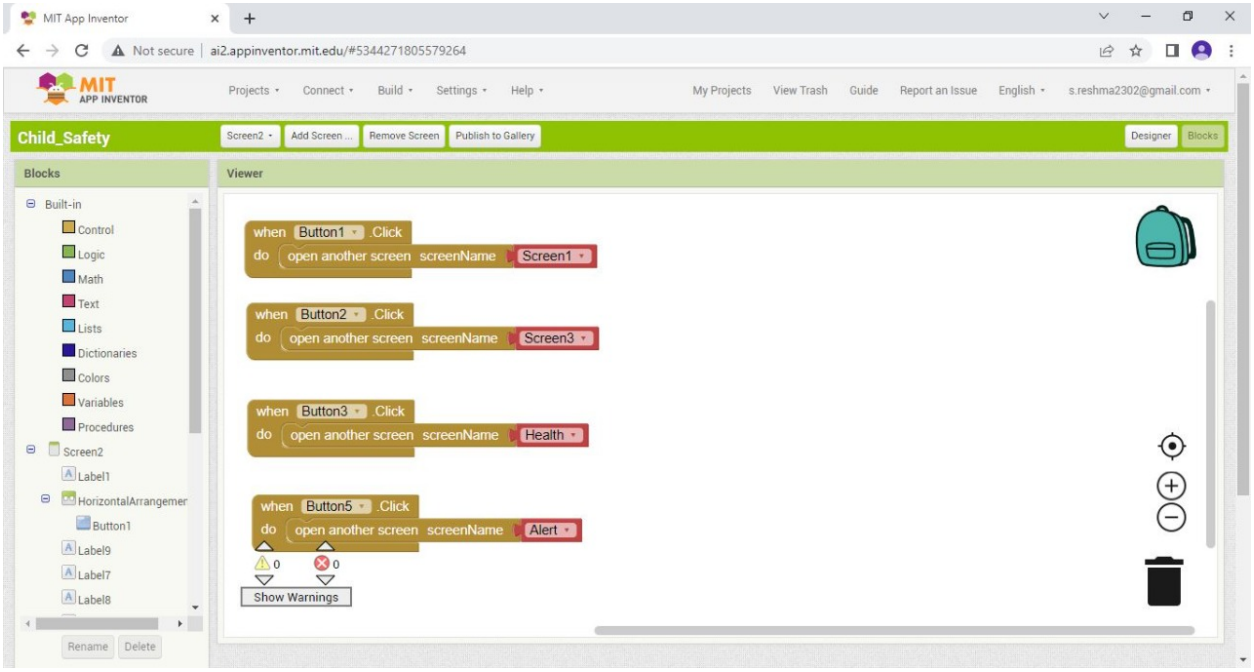

Node-RED
Deploy
filter nodes
Flow 1
common
inject
debug
complete
catch
status
link in
link call
link out
comment
function
function
switch
IBM IoT
connected
msg.payload
debug
all nodes
all
2/type/RSVKAIoTdevice/id/RSVKA/evt/Location/fmt/json
: msg.payload : Object
{ Latitude: -17, Longitude: 24 }
11/18/2022, 5:06:48 AM node: msg.payload
{ Latitude: -78, Longitude: 48 }
11/18/2022, 5:07:08 AM node: msg.payload
{ Latitude: -64, Longitude: 31 }
11/18/2022, 5:07:28 AM node: msg.payload
{ Latitude: -22, Longitude: 40 }
11/18/2022, 5:07:48 AM node: msg.payload
{ Latitude: -62, Longitude: 17 }


Not secure
169.51.205.11:31930/red/#flow/10cdd106cf6eaba4
Node-RED
Deploy
Flow 1
Flow 2
filter nodes
common
inject
debug
complete
catch
status
link in
link call
link out
comment
function
function
switch
IBM IoT
connected
function
msg.payload
worldmap
connected 0
geofence
rbe
http request
show dialog
childsafety
debug
all nodes
all
{ Name: "Child", lat: 8.26, lon: 77.35, Temperature: 99, Pulse rate: 192 }
11/19/2022, 7:55:49 PM node: cc453a4bbb543fda
{ Name: "Child", lat: 8.5, lon: 77.28, Temperature: 96, Pulse rate: 190 }
11/19/2022, 7:55:52 PM node: cc453a4bbb543fda
{ Name: "Child", lat: 8.53, lon: 77.33, Temperature: 96, Pulse rate: 107 }
11/19/2022, 7:55:55 PM node: cc453a4bbb543fda
{ Name: "Child", lat: 8.58, lon: 77.33, Temperature: 99, Pulse rate: 132 }


Not secure | 169.51.205.11:31930/ui/#!/0?socketid=rHcxhCY35g54UXdWAABT
Child Safety
Location
Temperature
98
96
100
Pulserate
189
50
200


Not secure | 169.51.205.11:31930/ui/#!/0?socketid=TJxfwBAA31gAL7WNAAAJ
Location
Child Safety
Alangulam
Alwarkuruchi
Thalayuthu
Mukoodal
Tirunelveli
Kallidaikurichchi
Vithura
Kalakkad
Mundanthurai
Tiger Reserve
Tirunelveli
District
Nanguneri
Balaramapuram
Valiyoor
Kulasekarapuram
Kuzhithura
Panagudi
Thuckalay
Aralvaimozhi
Colachel
Nagercoil
Kanyakumari


MIT App Inventor
Not secure | ai2.appinventor.mit.edu/#5344271805579264
Child_Safety
Screen2
Add Screen ...
Remove Screen
Publish to Gallery
Designer
Blocks
Palette
Search Components...
User Interface
Button
CheckBox
DatePicker
Image
Label
ListPicker
ListView
Notifier
PasswordTextBox
Slider
Spinner
Switch
TextBox
TimePicker
WebViewer
Viewer
Display hidden components in Viewer
Phone size (505,320)
Android 5+ Devices (Android Material)
12:30
CHILD TRACKER
LOCATION
CLICK HERE
HEALTH
CLICK HERE
Components
Screen2
Label1
HorizontalArrangemer
Button1
Label9
Label7
Label8
Label3
HorizontalArrangemer
Button2
Label4
HorizontalArrangemer
Button3
Label6
Button5
Label2
Label5
Rename
Delete
Media
Properties
Button1
BackgroundColor
Default
Enabled
FontBold
FontItalic
FontSize
14.0
FontTypeface
default
Height
5 percent...
Width
7 percent...
Image
arrow-back-icon-backward-i
Shape
default
ShowFeedback


MIT App Inventor
Not secure | ai2.appinventor.mit.edu/#5344271805579264
MIT APP INVENTOR
Projects
Connect
Build
Settings
Help
My Projects
View Trash
Guide
Report an Issue
English
s.reshma2302@gmail.com
Child_Safety
Screen2
Add Screen ...
Remove Screen
Publish to Gallery
Designer
Blocks
Blocks
Built-in
Control
Logic
Math
Text
Lists
Dictionaries
Colors
Variables
Procedures
Screen2
Label1
HorizontalArrangemer
Button1
Label9
Label7
Label8
Rename
Delete
Viewer
when Button1 .Click
do open another screen screenName Screen1
when Button2 .Click
do open another screen screenName Screen3
when Button3 .Click
do open another screen screenName Health
when Button5 .Click
do open another screen screenName Alert
0
0
Show Warnings

# CHAPTER 8

# 8.TESTING

## 8.1.TEST CASES

| Test case ID | Feature Type | Component | Test Scenario | Pre-Requisite | Steps To Execute | Test Data | Expected Result | Actual Result | Status | Commnets | TC for Automation(Y/N |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LoginPage_TC_OO1 | UI | Home Page | Verify user is able to see the user name textbox | | 1.Enter URL and click go<br>2.Verify user name text box is displayed | http://ai2.appinventor.mit.edu/#6082551769595904 | Login/Signup popup should display | Working as expected | Pass | | NO |
| LoginPage_TC_OO2 | UI | Home Page | Verify user is able to see the password textbox | | 1.Enter URL and click go<br>2..Verify password text box is displayed | http://ai2.appinventor.mit.edu/#6082551769595904 | Application should show password display | Working as expected | Pass | | NO |
| LoginPage_TC_OO3 | UI | Home page | Verify user is able to see the login button | | 1.Enter URL and click go<br>2.verify login button is displayed | http://ai2.appinventor.mit.edu/#6082551769595904 | Application should show login display | Working as expected | Pass | | NO |
| LoginPage_TC_OO4 | Functional | Login page | Verify user is able to log into application with Valid credentials | | 1.Enter URLand click go<br>2.Enter Valid username/email in Email text box<br>3.Enter valid password in password text box<br>4.Click on login button | Username:<br>s.reshma2302@gmail<br>password:Reshma | User should navigate to user account homepage | Working as expected | Pass | | NO |
| LoginPage_TC_OO4 | Functional | Login page | Verify user is able to log into application with inValid credentials | | 1.Enter URL and click go<br>2.Enter InValid username/email in Email text box<br>3.Enter valid password in password text box<br>4.Click on login button | Username: s.resma22@gmail<br>password:Reshma | Application should show 'Incorrect email 'validation message. | Working as expected | Pass | | NO |
| LoginPage_TC_OO5 | Functional | Login page | Verify user is able to log into application with inValid credentials | | 1.Enter URL and click go<br>2.Enter InValid username/email in Email text box<br>3.Enter valid password in password text box<br>4.Click on login button | Username:<br>s.reshma2302@gmail<br>password:raehms12a | Application should show 'Incorrect password ' validation message. | Working as expected | Pass | | NO |

| Test case ID | Feature Type | Component | Test Scenario | Pre-Requisite | Steps To Execute | Test Data | Expected Result | Actual Result | Status | Commnets | TC for Automation(Y/N |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LandingPage_TC_OO6 | UI | Landing page | Verify user is able to see the location text box | | 1.Enter URLand click go<br>2.Enter Valid username/email in Email text box<br>3.Enter valid password in password text box<br>4.Click on login button5.A new page appears, verify location text box is displayed | Username:<br>s.reshma2302@gmail<br>password:Reshma | Application should show loaction text box | Working as expected | Pass | | NO |
| LandingPage_TC_OO7 | UI | Landing page | Verify user is able to see the health text box | | 1.Enter URLand click go<br>2.Enter Valid username/email in Email text box<br>3.Enter valid password in password text box<br>4.Click on login button<br>5.A new page appears, verify health text box is displayed | Username:<br>s.reshma2302@gmail<br>passsword:Reshma | Application should show health text box | Working as expected | Pass | | NO |
| LandingPage_TC_OO8 | UI | Landing page | Verify user is able to see the alert message text box | | 1.Enter URLand click go<br>2.Enter Valid username/email in Email text box<br>3.Enter valid password in password text box<br>4.Click on login button<br>5.A new page appears, verify alert text box is displayed | Username:<br>s.reshma2302@gmail<br>password:Reshma | Application should show alert msg text box | Working as expected | Pass | | NO |

| Test case ID | Feature Type | Component | Test Scenario | Pre-Requisite | Steps To Execute | Test Data | Expected Result | Actual Result | Status | Commnets | TC for Automation(Y/N |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LandingPage_TC_OO9 | Functional | Landing page | Verify user is able to track the location of the child by click the location button | | 1.Enter URLand click go<br>2.Enter Valid username/email in Email text box<br>3.Enter valid password in password text box<br>4.Click on login button<br>5.A new page appears, verify location text box is displayed<br>6. A new page appears,live location of the child is displayed | Username:<br>s.reshma2302@gmail<br>passsword:Reshma | Application should show the live location of the child | Working as expected | Pass | | NO |
| LandingPage_TC_O10 | Functional | Landing page | Verify user is able to the temperature of the child by click the health button | | 1.Enter URLand click go<br>2.Enter Valid username/email in Email text box<br>3.Enter valid password in password text box<br>4.Click on login button<br>5.A new page appears, verify health text box is displayed<br>6. A new page appears,temperature of the child is displayed | Username:<br>s.reshma2302@gmail<br>password:Reshma | Application should show the temperature of the child | Working as expected | Pass | | NO |
| LandingPage_TC_O11 | Functional | Landing page | Verify user is able to the pulse rate of the child by click the health button | | 1.Enter URLand click go<br>2.Enter Valid username/email in Email text box<br>3.Enter valid password in password text box<br>4.Click on login button<br>5.A new page appears, verify health text box is displayed<br>6. A new page appears,pulse rate of the child is displayed | Username:<br>s.reshma2302@gmail<br>password:Reshma | Application should show the pulse rate of the child | Working as expected | Pass | | NO |

| Test case ID | Feature Type | Component | Test Scenario | Pre-Requisite | Steps To Execute | Test Data | Expected Result | Actual Result | Status | Commnets | TC for Automation(Y/N |
|---|---|---|---|---|---|---|---|---|---|---|---|
| LandingPage_TC_O12 | Functional | Landing page | Verify user is able to get alert msg when the child is out of the boundry | | 1.Enter URL and click go<br>2.Enter Valid username/email in Email text box<br>3.Enter valid password in password text box<br>4.Click on login button<br>5.A new page appears, verify alert box is displayed<br>6. A new page appears,child is away from the limited area | Username:<br>s.reshma2302@gmail<br>password:Reshma | Application should show alert message | Working as expected | Pass | | NO |

## 1. Purpose of Testing

The purpose of this document is to briefly explain the test coverage and open issues of the “CHILD TRACKER” project at the time of the release to User Acceptance Testing (UAT).

## 2. Defect Analysis

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

| Resolution | Severity 1 | Severity 2 | Severity 3 | Severity 4 | Subtotal |
|---|---|---|---|---|---|
| By Design | 10 | 4 | 2 | 3 | 20 |
| Duplicate | 1 | 0 | 3 | 0 | 4 |
| External | 2 | 3 | 0 | 1 | 6 |
| Fixed | 11 | 2 | 4 | 20 | 37 |
| Not Reproduced | 0 | 0 | 1 | 0 | 1 |
| Skipped | 0 | 0 | 1 | 1 | 2 |
| Won't Fix | 0 | 5 | 2 | 1 | 8 |
| Totals | 24 | 14 | 13 | 26 | 77 |

## 3. Test Case Analysis

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

| Section | Total Cases | Not Tested | Fail | Pass |
|---|---|---|---|---|
| Registration | 7 | 0 | 0 | 7 |
| Login | 5 | 0 | 0 | 5 |
| Track location | 10 | 0 | 1 | 9 |

| | | | | |
|---|---|---|---|---|
| Sensing Values | 23 | 0 | 2 | 21 |
| Displaying values | 23 | 0 | 2 | 23 |
| Alert | 5 | 0 | 0 | 5 |
| Outsource Shipping | 3 | 0 | 0 | 3 |
| Exception Reporting | 9 | 0 | 0 | 9 |
| Final Report Output | 4 | 0 | 0 | 4 |
| Version Control | 2 | 0 | 0 | 2 |

# CHAPTER 9

# 9.RESULTS

# 9.1.PERFORMANCE METRICES

| | | | NFT - Risk Assessment | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| S.No | Project Name | Scope/feature | Functional Changes | Hardware Changes | Software Changes | Impact of Downtime | Load/Voluem Changes | Risk Score | Justification |
| 1 | IOT Based Safety Gadget | New | Low | No Changes | Moderate | | >5 to 10% | ORANGE | As we have seen the chnages |
| | | Login | | | | | | | As we have seen the chnages |
| | | Track Location | | | | | | | As we have seen the chnages |
| | | Sensing Values | | | | | | | As we have seen the chnages |
| | | Displaying Values | Customizable | | | | | | As we have seen the chnages |
| | | Alert | | | | | | | As we have seen the chnages |

| NFT - Detailed Test Plan | | | |
|---|---|---|---|
| S.No | Project Overview | NFT Test approach | ssumptions/Dependencies/Risks |
| 1 | Child Safety Monitoring and Notification | Testing | Assumptions/Dependencies/Risks |

| | | | End Of Test Report | | | | | |
|---|---|---|---|---|---|---|---|---|
| S.No | Project Overview | NFT Test approach | NFR - Met | Test Outcome | GO/NO-GO decision | Recommendations | Identified Defects (Detected/Closed/Open) | Approvals/SignOff |
| | IOT Based Safety Gadget | Testing | Registration met | Mail | GO Decision | | Network issues | |
| | | | Tracking met | Dashboard | GO Decision | | Connection failures | |
| | | | Sensing met | Application/link | GO Decision | | | |
| | | | Display met | Application/link | GO Decision | | | |

# CHAPTER 10

## 10.ADVANTAGES AND DISADVANTAGES

## ADVANTAGES

- ➤ Prevent from Kidnapping of a child by others.
- ➤ Prevent from Missing children after natural disasters.
- ➤ Prevent from Unaccompanied minors.
- ➤ Prevent from Wrongful retention of a child.
- ➤ Prevent from Undefined disappearances.
- ➤ Parent’s do their work peacefully without worrying about their children.
- ➤ Continously monitoring the children.
- ➤ Saves time.
- ➤ Recovery of the children is easy,if the children lost
- ➤ This project eliminates unreliable mode of transmission of sending andreceiving messages and helps parents to locate their children when in distress.
- ➤ The major advantage of this wearable over other wearable is that it can be used in any cell phone and doesn't necessarily require an expensive smart phone and not a very tech savvy individual to operate.

## DISADVANTAGES

- The system is dependent on communication signal/network signal for the smart gadget to trigger automatic phone call/SMS during panic situation.
- Young Children may refuse to cooperate unless allowed to play with their gadgets.
- No water proof.

# CHAPTER 11

## 11.CONCLUSION

This IOT based electronic device which provides safety by monitoring the child everytime,anytime from anywhere. This wearable child safety device makes parents to easily monitor their children in real time just like staying beside them as well as focusing on their own career without any manual intervention.Parents can also monitor their children's health condition and get notification if their children went out of range.Through this, child safety can be ensured and crime rate will be reduced.

# CHAPTER 12

## 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 inthis 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.

# CHAPTER 13

## 13.APPENDIX

## 13.1.SOURCE CODE

```
import time
import sys
import ibmiotf.application
import ibmiotf.device
import random

organization="nimvfj"
deviceType="RSVKAIoTdevice"
deviceId="RSVKA"
authMethod="token"
authToken="R23S20V04KA26"



def myCommandCallback(cmd):
    print("Command received: %s"%cmd.data['command'])
    status=cmd.data['command']
    if status=="alert message":
        print("panic button is on")
    else:
        print("panic button is off")

try:
```

```
    deviceOptions={"org":organization,"type":deviceType,"id":deviceId,"auth-
method":authMethod,"auth-token":authToken}
    deviceCli=ibmiotf.device.Client(deviceOptions)

except Exception as e:
    print("Caught exception connecting device:%s"%str(e))
    sys.exit()
deviceCli.connect()

while True:
    lat=random.randint(-90,90)
    lon=random.randint(-90,90)

    data={'Latitude': lat, 'Longitude':lon}

    def myOnPublishCallback():
        print("Published Latitude=%s"%lat,"& Longitude=%s"%lon,"to IBM
Watson")

success=deviceCli.publishEvent("Location","json",data,qos=0,on_publish=m
yOnPublishCallback)
    if not success:
        print("Out of geofence")
    time.sleep(20)

    deviceCli.commandCallback=myCommandCallback

deviceCli.disconnect()
```

**13.2 .GITHUB LINK  AND PROJECT DEMO LINK**

**GITHUB LINK**

**https://github.com/IBM-EPBL/IBM-Project-39728-1660492850**

**PROJECT DEMO LINK**