Project Report Format

Team ID	PNT2022TMID00975
Project name	Iot based safety gadget for child monitoring and notification
Date	19 November 2022

1. INTRODUCTION

1.1 Project Overview :

- 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 data is stored into a cloud permanently to keep the track record of old data of the children for further reference.

1.2 Purpose :

- The child safety gadget is concerned with limiting children's exposure to hazards and reducing children's risk of harm.

- The motivation behind this gadget is to enable guardians to find their kids without any difficulty in case of emergency situations or to know of any danger their children maybe exposed to.

2. <u>LITERATURE SURVEY</u>
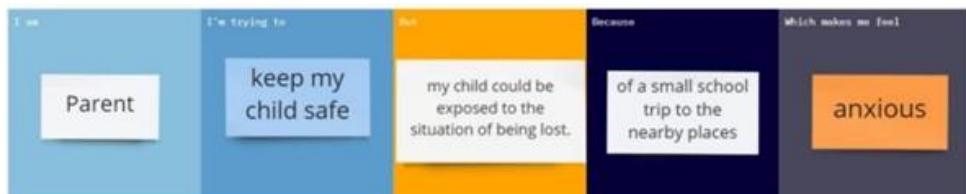
2.1 Existing problem:

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. This project is mainly streamed towards child safety solution by developing gadget which can be tracked by its GPS location and also a panic button on gadget is provided to alert the parent via GSM module calling for help. To Trackthe device anytime parental android app is developed. Smart gadget is always connected to the parental device and this device can receive and make phone calls and also receive SMS on gadget via GSM module and also a wireless technology is implemented on the device which is useful to bound the device within a region of monitoring range.An alert will be triggered on binding gadget if device is moving out of monitoring range and this will helps you keep a virtual eye on child. Health monitoring system on gadget checking for parameters like heart beat/pulse rate and temperature is included and it can be monitored via parental app. Gadget also monitors whether it is plugged on hand or not using contact switch and it alert the parent as soon as it is unplugged. The proposed solution takes the location services provided by GSM module. It allows the parents to get their child's current-location via SMS.A portable device which will have a pressure switch. As soon as an assailant is about to attack the person or when the person senses any insecurity from a stranger, he/she can then put pressure on the device by squeezing or compressing it . It presents the technological enablers and requirement for building a complete end- to- end energy efficient safety system. A wearable vest integrated wireless charging ,designed to enhance the security of the children.

2.2 References:
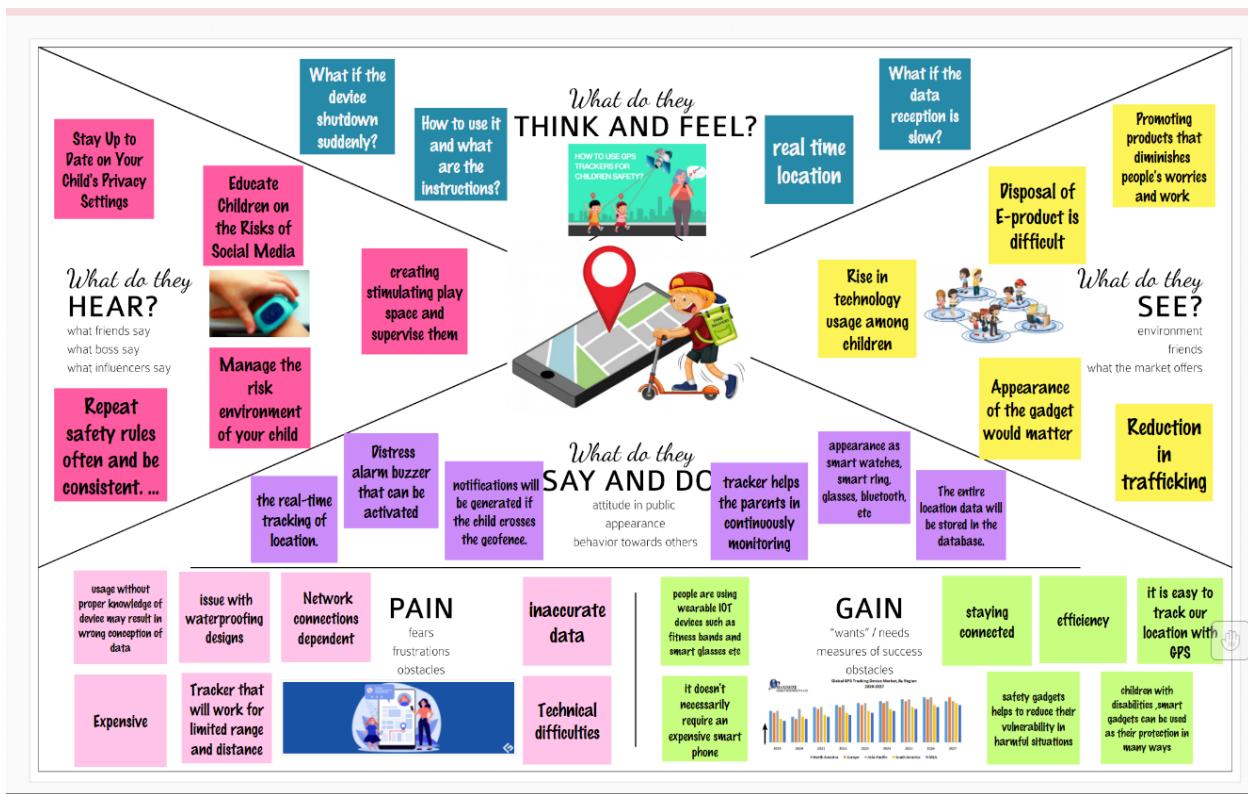
[1]. N. Manjunatha H.M Jayashree N. Komal K. Nayan (2020)

 [2]. Dheeraj Sunehera, Pottabhatini Lax mi Priya(2016)

[3]. Prof. Sunil K Punjabi, Prof. Suvarna Chaure

[4]. Mirjami Jutila , Esko Strommer, Mari Ervasti, Mika Hillukkala, Pekka Juhani Laitakari(2015)

2.3 Problem Statement Definition:

3. IDEATION & PROPOSED SOLUTION

3.1.Empathy Map Canvas:

Empathy Map

What do they THINK AND FEEL?

HOW TO USE GPS TRACKERS FOR CHILDREN SAFETY?

- What if the device shutdown suddenly?
- How to use it and what are the instructions?
- What if the data reception is slow?
- real time location

Stay Up to Date on Your Child's Privacy Settings

Educate Children on the Risks of Social Media

Promoting products that diminishes people's worries and work

Disposal of E-product is difficult

What do they HEAR?
what friends say
what boss say
what influencers say

creating stimulating play space and supervise them

Rise in technology usage among children

What do they SEE?
environment
friends
what the market offers

Manage the risk environment of your child

Repeat safety rules often and be consistent. ...

Appearance of the gadget would matter

Reduction in trafficking

What do they SAY AND DO
attitude in public
appearance
behavior towards others

Distress alarm buzzer that can be activated

the real-time tracking of location.

notifications will be generated if the child crosses the geofence.

tracker helps the parents in continuously monitoring

appearance as smart watches, smart ring, glasses, bluetooth, etc

The entire location data will be stored in the database.

PAIN
fears
frustrations
obstacles

- usage without proper knowledge of device may result in wrong conception of data
- issue with waterproofing designs
- Network connections dependent
- inaccurate data
- Expensive
- Tracker that will work for limited range and distance
- Technical difficulties

GAIN
"wants" / needs
measures of success
obstacles

- people are using wearable IOT devices such as fitness bands and smart glasses etc
- staying connected
- efficiency
- it is easy to track our location with GPS
- it doesn't necessarily require an expensive smart phone
- safety gadgets helps to reduce their vulnerability in harmful situations
- children with disabilities ,smart gadgets can be used as their protection in many ways

3.2 Ideation & Brainstorming:

CHILDSAFETY GADGETS

- Quickrecoveryofnetworkconnectionsincase of badsignalreception
- Adeviceshouldbeusefultofindthe real timelocation of lostchild.
- Thisdeviceshouldalsousefulfortheteenager(especiallyforgirls).
- The GPStrackerusedinthisdeviceishelpful for parentsto find theirchildren'slocati
- Thisdevicegivesnotifications totheparentsifthe childrencrossesthegeofence.
- BuzzerorSOSlight to alertgaurdiansofdanger
- Camerashould beaccessedto ensure thechild'ssafe
- Ifchildhave heartproblem, thenthisdevice usedtodetect theheartrate.

3.3 Proposed Solution:

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	- 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.
2.	Idea/ Solution description	- Child tracker helps the parents in continuously monitoring the child's location. They can simply leave their children in school or parks and create a geo fence around the particular location. - By continuously checking the child's location notifications will be generated if the child crosses the geo fence. Notifications will be sent according to the child's location to their parents or caretakers. The entire location data will be stored in the database.
3.	Novelty / Uniqueness	The Novelty of the work is that the system automatically alerts by sending SMS to Parents/ Caretaker When Panic button is Pressed.
4.	Social Impact/ Customer Satisfaction	Information is sent to parents when the child is out of geo fence. Crime rate scan be reduced. It is cost efficient and Real time tracking is possible.
5.	Business Model (Revenue Model)	- The Proposed system can be used for the child security. - Selling the productively to the parents. - Selling the product to the childcare centres.

6.	Scalability of the Solution	● Parent could be able to track child using their separate android application provided for them and they locate and retrieve details anywhere and anytime. ● Location accuracy can be increased and the size of the device is small.

3.4.Problem Solution fit:

Project Title: IOT Based Child Safety Gadgets Notifications and Monitoring   Project Design Phase-I - Solution Fit Template   Team ID: PNT2022TMID00975

1. CUSTOMER SEGMENT(S) — CS
Working and Non-working parents and guardians of kids who are below 10 years or above

6. CUSTOMER CONSTRAINTS — CC
Network Connection is the costumer constrain so far and this can be overcome by our new advancement which allows the battery to charge itself with the help of body heat. If this is possible then there can be no customer constrain for our solution.

5. AVAILABLE SOLUTIONS — AS
* Smart IOT Device for Child Safety and Tracking Wearable Safety Device for Children Bracelet for Remote Surveillance of People Deprived of their Freedom
* A Mobile Safety Monitoring System for Children

2. JOBS-TO-BE-DONE / PROBLEMS — J&P
The band child safety is efficient and low cost, the awareness of the child safety monitoring system can be spread among the society.
The band child safety can be customized into different ornamental forms according to the requirement of the user example: ring, chain..etc,
The device also acts as a health monitoring system by sensing the radiation from the human body.

9. PROBLEM ROOT CAUSE — RC
Recent news about child abuse and trafficking put parents in anxiety, fear and sacred and create an insecure atmosphere for children. In order to provide a secure environment for children this solution was developed.

7. BEHAVIOUR — BE
The device guarantees the child safety through constant monitoring via mobile phones, thus reducing the safety concern among the parents. It reduces the risk of the child during emergency situation as the device notifies immediately to the parent when unexpected events happens. Thus, the action is taken immediately and the child is protected from other consequences.

3. TRIGGERS — TR
The device can be sold in different ways like selling in stores, online as the device is small and low cost with customizable options.

4. EMOTIONS: BEFORE / AFTER — EM
BEFORE:
Insecure
AFTER:
Secure and confident
USE:
Monitoring, surveillance and security

10. YOUR SOLUTION — SL
The band child safety consists of a GPS sensor to track the live location and send the information to the synced mobile phone. The vibration sensor attached to invisible child safety band detects the accident. The device guarantees the child safety through constant monitoring via mobile phones, thus reducing the safety concern among the parents. It reduces the risk of the child during emergency situations as the device notifies immediately to the parent when unexpected events happen. Thus the action is taken immediately and the child is protected from further consequences.

8. CHANNELS of BEHAVIOUR — CH
The child safety band detects the accident
The child safety band is considered to be invisible as the outer material of the band is similar to the skin color of the child, which is customized by the users. The child safety band is a user-friendly gadget as its functionalities can be controlled via the synced mobile phone like setting the distance range, buzzer indication. The band is also efficient and faster in communication as the device always synced with the mobile phone. The safety gadget which is bought online, if it is repaired, the servicing charge may be high. The safety gadget which is offline, can be repaired easily.

4. REQUIREMENT ANALYSIS:
4.1Functional Requirements:

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	• Registration through Form • Registration through Gmail • Registration through LinkedIN
FR-2	User Confirmation	•Confirmation via Email •Confirmation via OTP
FR-3	App installation	• Installation through link Installation through play store
FR-4	Settings geo fence	• Setting by user to find child location
FR-5	Detecting child location	• Detecting location via app • Detecting location via SMS
FR-6	User Interface	• User Login Form. • Admin Login Form.
FR-7	Database	• Stored in cloud for seamless connectivity.

		• Parents and kids link with the distance and the location values obtained from the mobile devices are stored here. • The values include parent id, kid id, distance, longitude, latitude etc.
FR-8	Server	• It connects the database and the frontend application. • The backend server has been implemented to run as a service and is deployed in an IBM cloud instance.
FR-9	GPS tracking	• The system is implemented with a GPS module, which acquires the location information of the user and stores it to the database.
FR-10	API	• The value collected is sent to the database using an API.
FR-11	React JS	• We are using react as a front end for ourproject• Node JS for the back end .

FR-12	GPS modules	• It receives data directly from satellites.

| FR-13 | Battery Life | • If the child or parent forgets to charge the device for a whole day then also the device will work. That's why we aim to make this device last the whole day with one charge.

• It should be long-lasting. |
| FR-14 | Location History | • The location history will help to track the child's activity. Location history will be there for 30 days.

• For example if the child gets missing, with the help of location history they can track down their child's activity and also can find their children. |
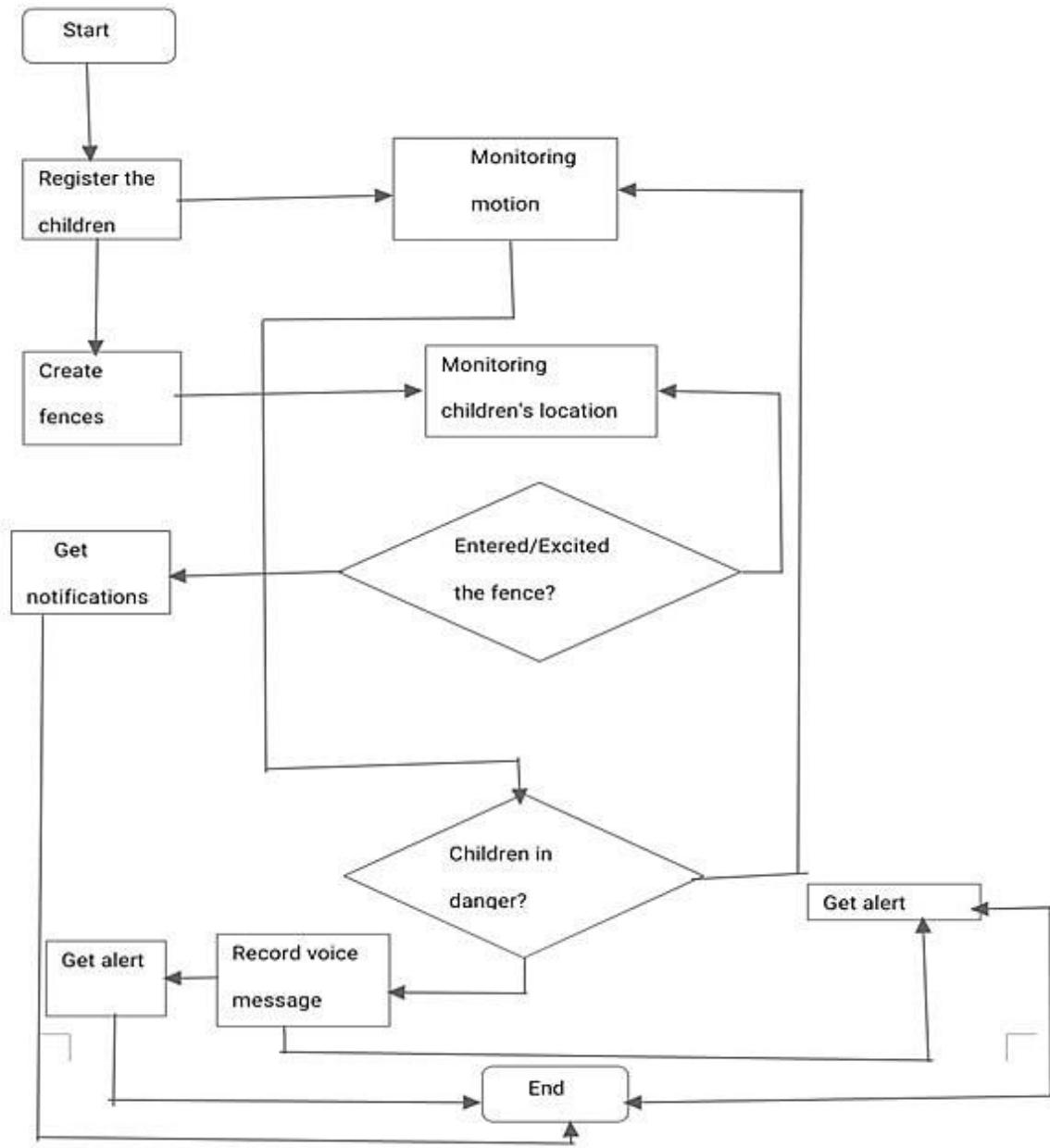
4.2. Non-Functional Requirements:

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	• Device have GSM can help to inform the parents or relatives about the current situations of the child by deliver the message immediately to save the child.

| NFR-2	**Security**	• Make children parents more assure about their kid's security, we have a feature in our device called Geo-Fence. ● Whenever your child crosses that specific area, you will get an instant notification on your phone.
NFR-3	**Reliability**	• Portable • Easy to use • Flexibility• Compatible• Real time Tracking
NFR-4	**Performance**	• Create a Child tracker which helps the parents with continuously monitoring the child's location. • The notification will be sent according to the child's location to their parents or caretakers. • Crime rates can be reduced.• The entire location data will be stored in the database.
NFR-5	**Availability**	• Track your child even in a crowd• Get travel details of kids at any time • Know the current location
NFR-6	**Scalability**	• Gadget ensures the safety and tracking of the children. Location accuracy can be increased and the size of the device is small. Parents need not worry about their children.
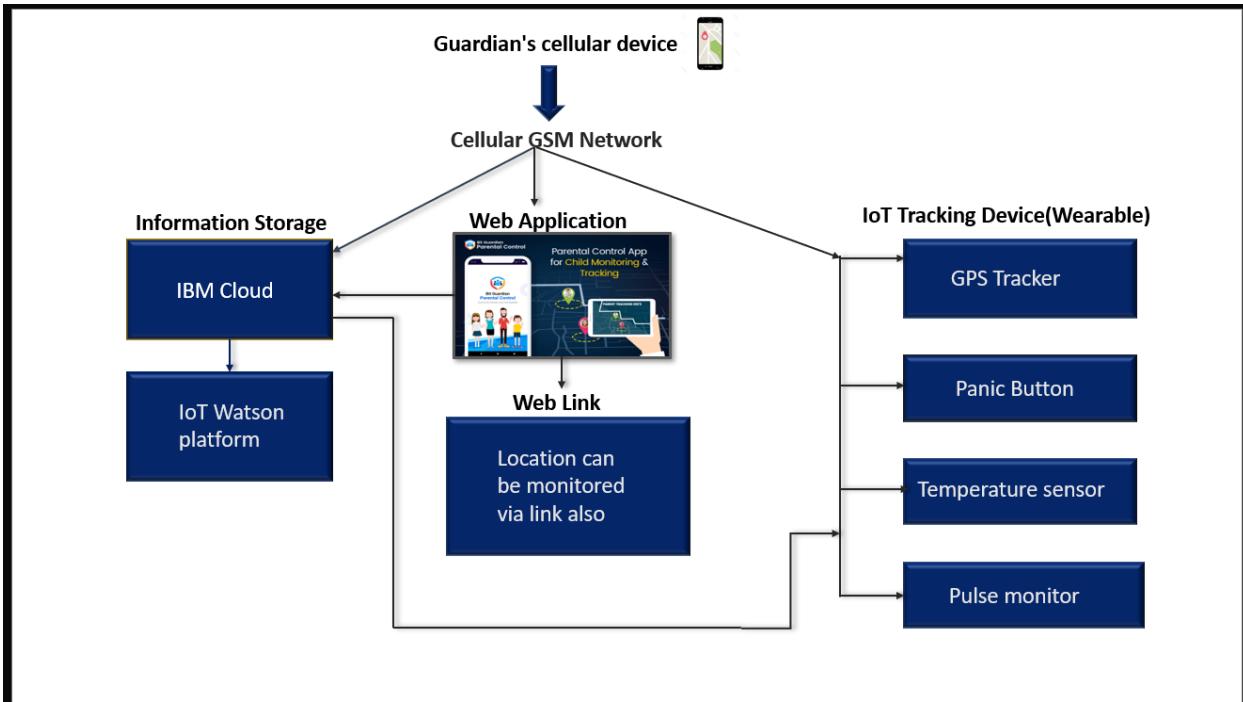
5. Project Design:

5.1.Data flow Diagrams:
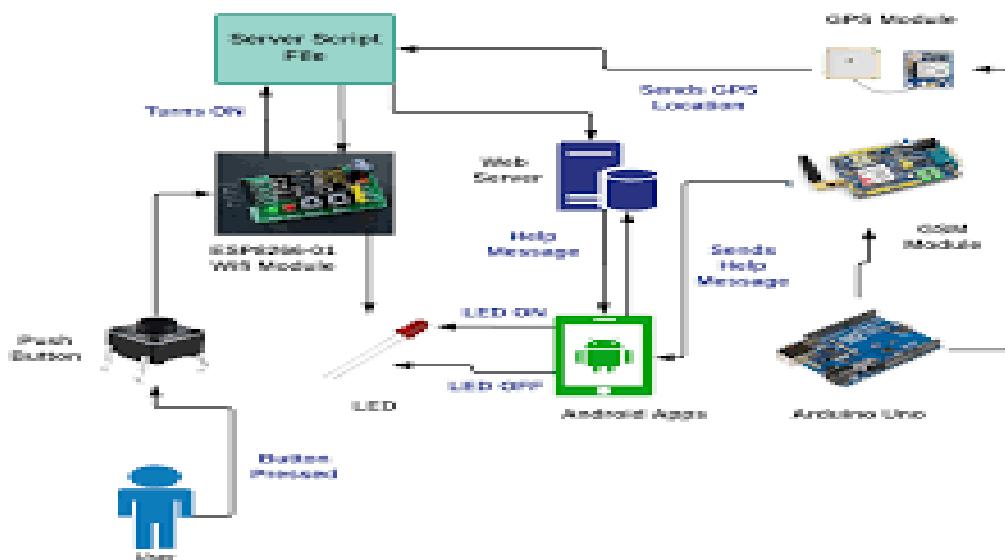
## 5.2.Solution & Technical Architecture:

SOLUTION ARCHITECTURE:

TECHNICAL ARCHITECTURE:

Table 1- Components and Technologies:

S.no	Components	Description	Technology
1	User Interface	Mobile Application	HTML, CSS, JavaScript
2	Application Logic-1	Logic for a process in theapplication	Java
3	Application Logic-2	Logic for a process in theapplication	IBM Watson STTservice
4	Application Logic-3	Logic for a process in theapplication	IBM Watson Assistant
5	Database	Data Type, Configurations.	MySQL
6	Cloud Database	Database Service onCloud	IBM Cloudant
7	File Storage	File storage requirements	IBM Block Storage
8	External API	Purpose of External APIused in the application	Aadhar API,etc
9	Infrastructure (Server/Cloud)	Application Deployment onLocal System / Cloud Local Server Configuration	Cloud Foundry

Table 2- Application Characteristics:

S.No	Components	Description	Technology

1	Open-Source Frameworks	Open stack, Github.	Internet hosting service for software development and version control using Github.
2	Security Implementations	Web Application Firewall	AWS WAF,WAF,cloud fare.
3	Scalable Architecture	By building articles and authors into a single query, the volume of queries can be reduced	IBM SQL.
4	Availability	The load balancer intelligently routes client requests to the right server,in a manner that maximizes performance and capacity utilization.	Web server, Loadbalancer

5.3.User Stories:

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer (Mobile 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 emailonce I have registered for the application	I can receive confirmationemail &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		Medium	Sprint-1
	Login	USN-5	As a user, I can log into the application by entering email & password		High	Sprint-1
	Dashboard					
Customer (Web user)	Login		As I enter,I can see the working of the application and scan for the glitches and monitor the operation and check if all the usersare authorized.			
Customer Care Executive	Login					

Administrator	Login		Maintaining and making sure the database containing the locations are secure and accurate and update constantly			

6.PROJECT PLANNING & SCHEDULING:

6.1.Sprint Planning & Estimation:

TITLE	DESCRIPTION	DATE
Literature Survey& Information Gathering	A literature review is a comprehensive summary of previous researches on the topic. The literature review surveys scholarly articles, books, and other sources relevant to a particular area of research.	1 September 2022
Prepare Empathy Map	An empathy map is a collaborative tool teams can use to gain a deeper insight into their customers. It helps us to understand the customers' pain, gain and difficulties from their point of view.	7 September 2022
Ideation- Brainstorming	Brainstorming is a group problem-solving method that helped us to gather and organize various ideas and thoughts from team members.	16 September 2022

Define Problem statement	The Customer Problem Statement helps us to focus on what matters to create experiences people will love. A well-articulated customer problem statement allowed us to find the ideal solution for the challenges customers face.	19 September 2022
Problem Solution Fit	It helped us understand and analyse all the thoughts of our customer, their choice of options, problems, root cause, behaviour and emotions.	14 October 2022.
Proposed solution	It helped us analyse and examine our solution more in the grounds of uniqueness, social impact, business model, scalability etc.	19 October 2022.
Solution Architecture	Solution architecture is a complex process – with many sub-processes – that bridges the gap between business problems and technology solutions. It helped us understand the features and components used to complete the project.	27 October 2022.
Customer journey map	It helped to analyse the various steps, interactions, goals and motivation, positives, negatives and opportunities.	15 October 2022
Solution requirements	It briefs about functional and non-functional requirements. It involves the various steps in the entire process. It also specifies features usability, security, reliability, performance, availability and scalability.	12 October 2022

Technology stack	A tech stack is the combination of technologies a company uses to build and run an application or project. It helps us analyse and understand various technologies that needs to be implemented in the project.	13 October 2022
Data flow	A Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system. A neat and clear DFD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored.	07 October 2022
Sprint Delivery plan	Sprint Planning is an event in scrum that defines what can be delivered in the upcoming sprint and how that work will be achieved. It helps us to organise and complete the work effectively and efficiently.	20 October 2022
Prepare milestone and activity list	Helps us understand and evaluate our progress and accuracy so far.	21 October 2022
Project Development - Delivery of Sprint	Develop and submit the developed code by testing it.	11 November 2022

6.2.Sprint Delivery Schedule:

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Registration	USN-1	As a user, I can register for the application by entering my email, password, and confirming my password.	2	High	ANJALI K
Sprint-1		USN-2	As a user, I will receive confirmation email once I have registered for the application	1	High	DHARSHINI K M
Sprint-1		USN-3	As a user, I can register for the application through Facebook	2	Low	DIVYAVARSHINI K K
Sprint-1		USN-4	As a user, I can register for the application through Gmail	2	Medium	ABIRAMI S
Sprint-1	Login	USN-5	As a user, I can log into the application by entering email & password	1	High	DEEPALAKSHMI M
Sprint-1	Dashboard	USN-6	As a user, I can log into the application by entering email & password and access all the resources and services available	2	High	ANJALI K
Sprint-2	Login	USN-1	As a user, I log into the application and enter the email address and password for verification.	3	High	DHARSHINI K M

Sprint-2	Dashboard	USN-2	I receive all the information about the coordinates from the child safety API. Updates of the location are maintained consistently.	2	Medium	DIVYAVARSHINI K K
Sprint-3	Login	USN-1	As a SOS controller, I deliver distress notifications to the app user.	3	High	ABIRAMI S
Sprint-3	Dashboard	USN-2	Distress message may contain brief information about the situation with pre-stored message options or could be newly generated	2	Medium	DEEPALAKSHMI M
Sprint-4	Login	USN-1	As an administrator, I ensure that all departments work co-ordinated and ensure the accuracy and efficiency.	3	High	ANJALI K

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

Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-1	20	6 Days	24 Oct 2022	29 Oct 2022	20	29 Oct 2022
Sprint-2	20	6 Days	31 Oct 2022	05 Nov 2022	20	05 Nov 2022
Sprint-3	20	6 Days	07 Nov2022	12 Nov 2022	20	12 Nov 2022
Sprint-4	20	6 Days	14 Nov2022	19 Nov 2022	20	19 Nov 2022

6.3.Reports from JIRA:

Sprint 1:
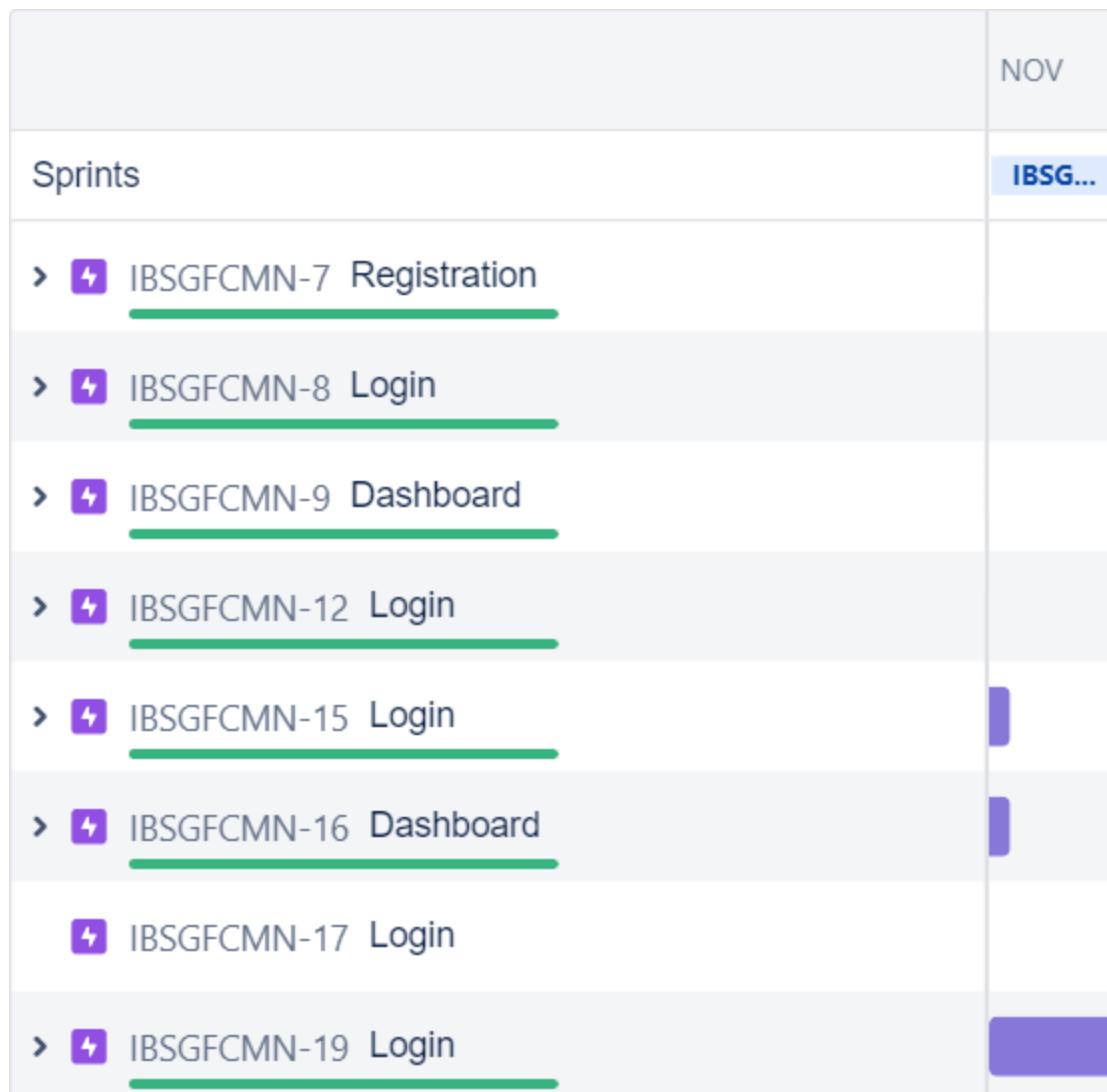
Sprint 2:

	NOV					
	31	1	2	3	4	5
Sprints	IBSGFCMN Sprint 2					
> ⚡ IBSGFCMN-7 Registration						
> ⚡ IBSGFCMN-8 Login						
> ⚡ IBSGFCMN-9 Dashboard						
> ⚡ IBSGFCMN-12 Login						
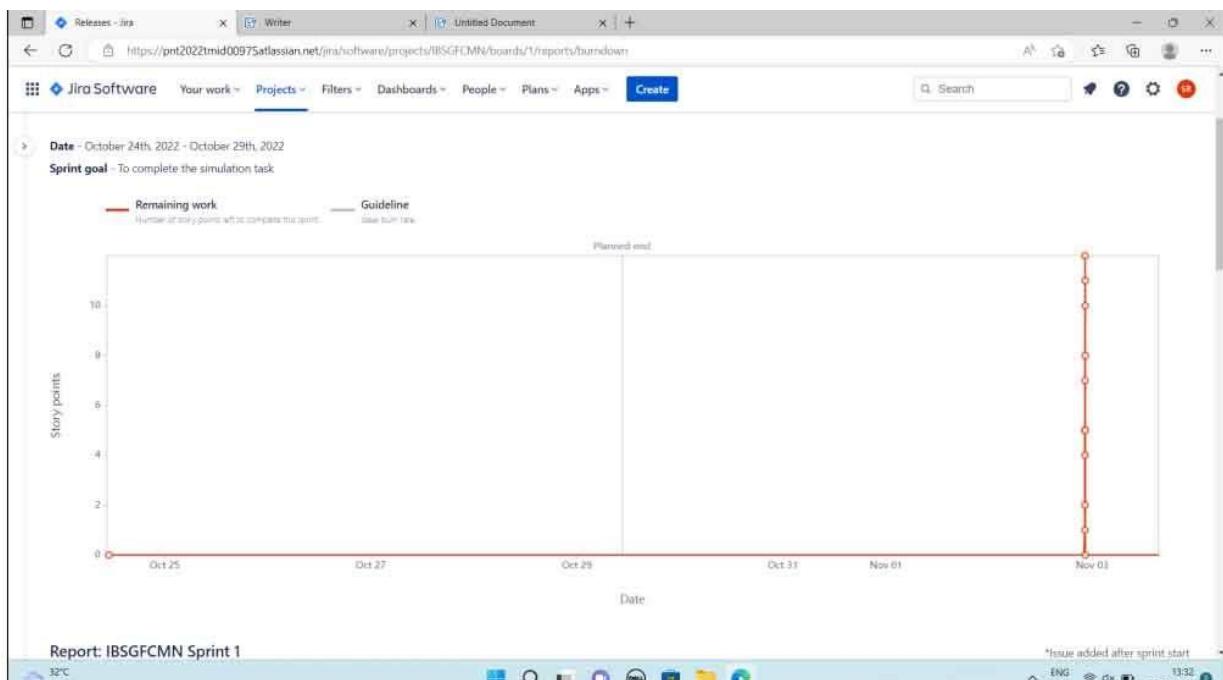
Sprint 3:

	NOV					
	7	8	9	10	11	12
Sprints	IBSGFCMN Sprint 3					
> ⚡ IBSGFCMN-7 Registration						
> ⚡ IBSGFCMN-8 Login						
> ⚡ IBSGFCMN-9 Dashboard						
> ⚡ IBSGFCMN-12 Login						
> ⚡ IBSGFCMN-15 Login						
> ⚡ IBSGFCMN-16 Dashboard						

Sprint 4:

	NOV
Sprints	**IBSG...**
> ⚡ IBSGFCMN-7 Registration	
> ⚡ IBSGFCMN-8 Login	
> ⚡ IBSGFCMN-9 Dashboard	
> ⚡ IBSGFCMN-12 Login	
> ⚡ IBSGFCMN-15 Login	
> ⚡ IBSGFCMN-16 Dashboard	
⚡ IBSGFCMN-17 Login	
> ⚡ IBSGFCMN-19 Login	

Burndown chart:

Sprint 1:

Report: IBSGFCMN Sprint 1
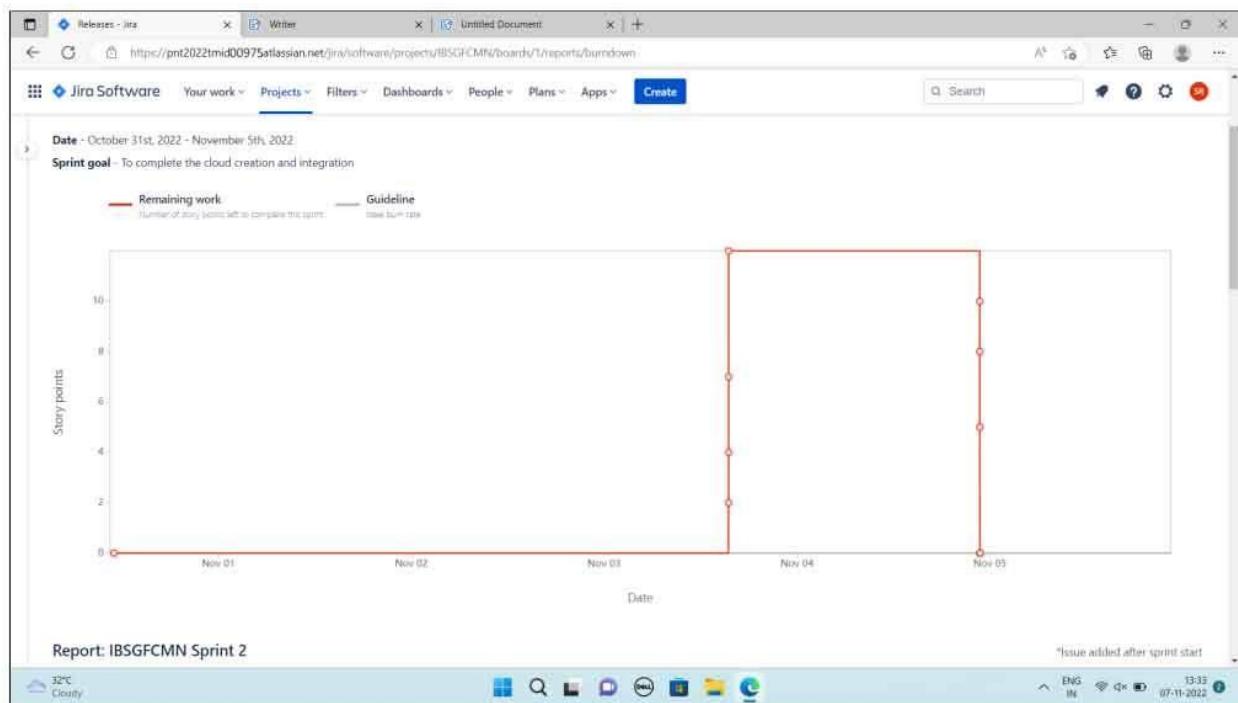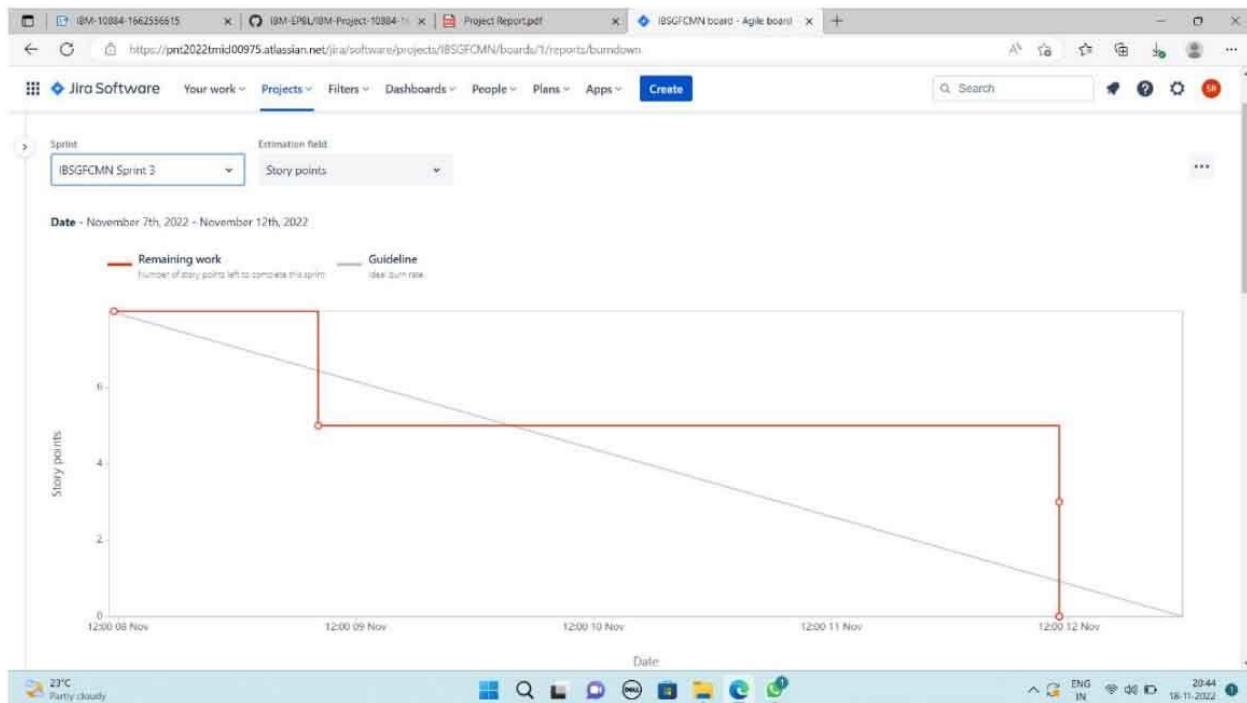
Sprint 2:
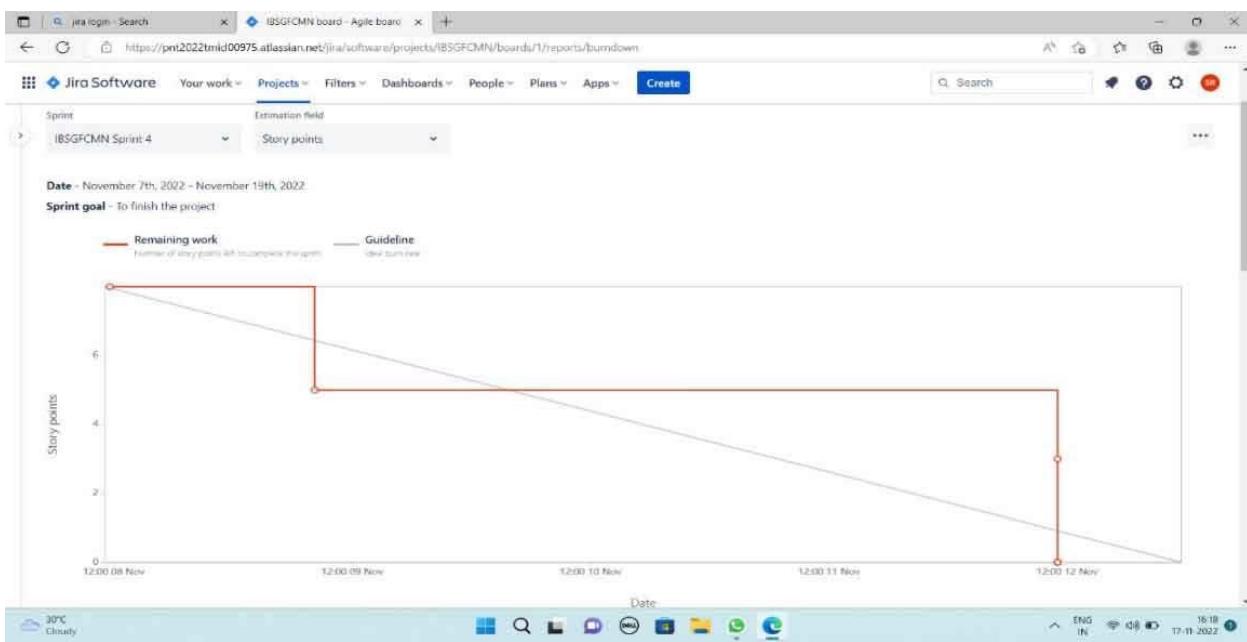
Report: IBSGFCMN Sprint 2
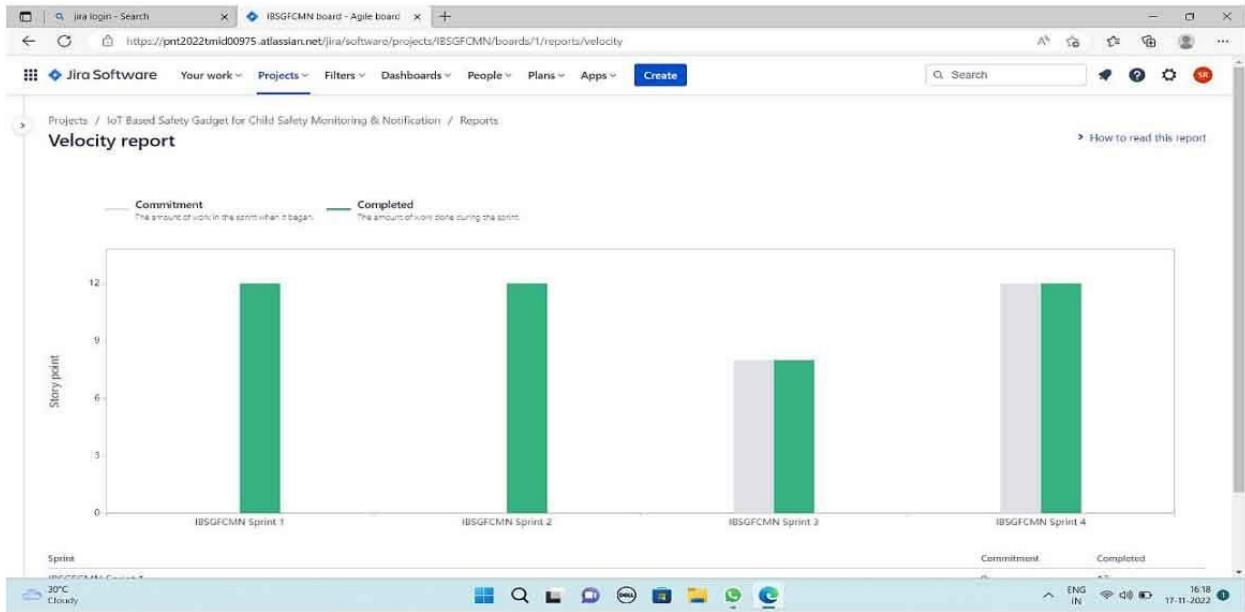
Sprint 3:

Sprint 4:

<u>Velocity report:</u>

7.CODING & SOLUTIONING:

7.1.Feature 1:

- A GPS tracker so you can see where your child is at all times and an SOS button that your child can press to send an emergency alert to you.

7.2.Feature 2:
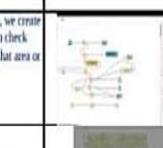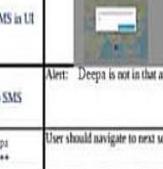
It should also have a two-way communication system so you can talk to your child and they can talk to you.

8. TEST CASES:

TEST SCENARIOS:

1. Verify python code is run without error.

2. Verify the login the cloud services.

3. Verify create a device in the IBM Watson IoT platform and get the device credentials.

4. Verify the events is shown in the card.

5. Verify the events is stored in the database,

6. Verify to create a node-red services.

7. To create a web UI to interact with user.

8. To send SMS to the particular child's guardian.

9. Verify user is able to log into app with valid credentials.

10. Verify it show the location in app

8.1 Test cases:

Sprint	Test case ID	Feature Type	Component	Test Scenario	Pre-Requisite	Steps To Execute	Test Data	Expected Result	Actual Result	Status	TC for Automation(Y/N)	BUG ID	Executed By
Sprint-1	PythonCode_TC_OO1	Code	Python3.7.4	Verify python code is run without error	Software	1.Download the python version3.7.4 2.Type the program and save it 3.Verify it is run continuously	import json import wiotp.sdk.device import time myConfig = { "identity": { "orgId": "f2i5o"	2022-11-16 15:17:30.513 wiotp.sdk.device.client.DeviceClient INFO Connected successfully: d:43j9jz:NODE:1501 Data published to IBM IoT platform:	Working as expected	Pass	YES	NIL	Deepa
Sprint-2	IBMCloud_TC_OO2	Functional	IBM Cloud Services	Verify the login the Cloud Services	IBM Cloud Services	1.Login in cloud.ibm.com 2.Obtain promocode in ICT	email id: aakkash@gmail.com	Successfully created the IBM account	Working as expected	Pass	YES	NIL	Anjali
Sprint-2	IBM Watson IoT Platform_TC_OO3	Functional	IBM Cloud Services	Verify create a device in the IBM Watson IoT platform and get the device credentials.	IBM Cloud Services	1.In IBM Cloud Service go to catalog 2.To create an Internet of things platform 3.Launch the IBM Watson IoT Platform 4.Login the Platform by clicking organization ID 5.Create a device & configure the	Create a device & integrate with code	{"name":" Deepa ","lat":9.28,"lon":78.5488783}	Working as expected	Pass	YES	NIL	Dharshini
Sprint-2	Board_TC_OO4	Non-Functional	IBM Cloud Services	Verify the events is shown in the card	IBM Cloud Services	1.Go to IBM Watson IoT Platform 2.Create the board 3.Create name board 4.Create latitude board	BOARD; LOCATION	Test: Gauge: Latitude Gauge: Longitude	Working as expected	Pass	YES	NIL	Abirami
Sprint-2	CloundantDB_TC_OO4	Dataset	IBM Cloud Services	Verify the events is stored in the database	IBM Cloud Services	1.Go to IBM Cloud Services 2.In resources list, click on cloudant 3.In database, create a document to	Document: tracker	Successfully created the Database	Working as expected	Pass	NO	NIL	Divya
Sprint-3	NodeRedService_TC_OO5	Functional	IBM Cloud Services	Verify to create a node -red services	IBM Cloud Services	1.In IBM Cloud Service go to catalog 2.To create a NODE-RED app 3. Deploy the app 4.Visit the app URL 5. In node-red, we need to connect	Using geofence node, we create in form of circle to check whether the child in that area or not		Working as expected	Pass	NO	NIL	Dharshini
Sprint-3	WebUI_TC_OO6	Functional	Node-Red Service	To create a web UI to interact with user	Node-Red Service	1.Go to dashboard 2.Open a link UI dashboard 5.Display the location 4.pop up SMS if person not in area	Show the pop up SMS in UI		Working as expected	Pass	NO	NIL	Deepa
Sprint-4	FastSMS Service_TC_OO7	Functional	Fast2SMS Service	To send SMS to the particular child's guardian	Software	1.login Fast2SMS Service 2.GO to Dev API 3.Sending SMS using HTTP Package	Show the pop up SMS	Alert: Deepa is not in that area	Working as expected	Pass	NO	NIL	Anjali
Sprint-4	MobileApp_TC_OO8	Functional	MIT APP Inventor	Verify user is able to log into app with Valid credentials	Software	1.login MIT APP Inventor 2.Design Frontend & Backend	Username: Deepa Password:****	User should navigate to next screen	Working as expected	Pass	YES	NIL	Divya
Sprint-4	MobileApp_TC_OO9	Functional	MIT APP Inventor	Verify it show the location in app	Software	1.login MIT APP Inventor 2.Design Frontend & Backend 3.Connect to node -red	Name: Deepa Latitude: ***** Longitude: *****	The App shows the location value	Working as expected	Pass	NO	NIL	Deepa

8.2. User Acceptance Testing :

1. Purpose of Document:

The purpose of this document is to briefly explain the test coverage and open issues of the project[IOT based safety gadget for child monitoring and notificatSion] at the time of the release to User Acceptance Testing.

2.Detect 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	5	3	2	0	10
Duplicate	0	0	0	1	1
External	2	0	0	1	3
Fixed	6	2	0	0	8
Not Reproduced	0	1	1	0	2
Skipped	0	0	0	0	0
Won't Fix	0	0	0	0	0
Totals	13	6	3	2	24

3.**Test case analysis:**
      This report shows the number of test cases that have passed, failed and untested.

Section	Total Cases	Not Tested	Fail	Pass
Print Engine	1	0	0	1
Client Application	2	0	0	2
Security	1	0	0	1
Outsource Shipping	1	0	0	1
Exception Reporting	1	0	0	1
Final Report Output	2	0	0	2
Version Control	2	0	0	2

9. Results:
9.1. Performance Testing:

			NFT - Risk Assessment				
S.No	Project Name	Scope/feature	Functional Changes	Hardware Changes	Software Changes	Risk Score	Justification
1	IoT Based Safety Gadget for Child Safety Monitoring & Notification	Existing	No Changes	No Changes	No Changes	GREEN	As we have completed the project successfully

	NFT - Detailed Test Plan	
S.No	Project Overview	NFT Test approach
1	Track the location & send an alert to the particular's person	Load Test

	End Of Test Report			
S.No	Project Overview	NFT Test approach	Test Outcome	Approvals/SignOff
1.	We need to Track the location of particular child suppose, If the child crosses the geofence. It is send SMS to that parents/guardian then we need to track the location.	Load Test	Response time meets the actual Result.	Project's Mentors

NFT Test approach	
Load Test	
Scenario Name	Load Test – Location Tracker SAMPLE PROJECT
Scenario Type	Load Test - Duration 30 minutes
Scenario Objectives	To Stimulate Python Code(Location Details) and to monitor the performance of Location Tracker SAMPLE PROJECT
Steps	1. We have integrate IBM Watson IoT Platform in order to get this Location details from python program. 2. We also integrate fast SMS service in order to send an alert to guardian or parent
Entry Criteria	Test data is set-up. All the Components(software & hardware) is set-up. It is completed successfully.
Exit Criteria	Response time meets the actual Result. Test completion report is agreed upon by mentors.

10.Advantages & Disadvantages:

Advantages:

- They can help to prevent accidents, they can provide peace of mind for parents, and they can help children to stay safe.

- Quick recovery of network connections in case of bad signal reception.

- Real time location tracking.

- Storage of co-ordinates in the cloud for later usage.

Disadvantages:

- Network dependent.

- Geo fence consisting of limited range.

- Occasional inaccurate data.

11.Conclusion:

A child safety gadget is a device that is designed to help keep children safe. It is designed to help keep children safe in case of an emergency. It is important to choose one that is durable and easy to use. It is necessary to make sure that it is easy to use and that it is comfortable for the child to wear. child safety gadgets can help prevent children from getting lost or from being abducted. The cloud storage of coordinates of the child can be of good use in case the child is lost. This gadget helps Monitoring children in a more efficient and does not take much time or effort. Added features helps the application in two-way communication and pre-stored emergency messages for quick transmission of messages. This gadget reduces half of parent's worry and effort when it comes to monitoring the child.

12. Future Scope:

A child safety gadget is a device that is designed to help keep children safe. There are many different types of child safety gadgets available, including devices that help to prevent accidents, those that help to keep children from getting lost, and those that help to keep them from being harmed by strangers.

The Proposed system can be used for the child security. The product can be sold directly to the parents and childcare centres. Worry of the parents increased crime rates in the country can be brought down a notch with this gadget.

With the advancement of technology, there are many new and innovative products being developed that can help keep children safe. Some of the newer products include GPS tracking devices, wireless camera systems, and even biometric devices that can identify a child by their unique physical characteristics. With the continued development of these and other child safety products, the future may always be benefitted by the child safety gadgets.

13.APPENDIX:
Source code:

1. **REGISTRATION:**

HTML:

```html
<!DOCTYPE html>

<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta http-equiv="X-UA-Compatible" content="IE=edge">

  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <link rel="stylesheet" href="/css/login.css">

  <title>Sign Up</title>
  <script>
    if (window.location.hostname !== "localhost")

      {if (location.protocol

        !== "https:") {

        location.replace(

          `https:${location.hr

            ef.substring(

            location.p

            rotocol.length

          )}`

        )

      }

    }
  </script>

  <script src="./localforage.js"></script>
</head>

<body>
  <div class="wrapper">
```

```html
<div class="loginContainer">

  <span>Login to Continue</span>

  <div class="traditionalLoginContainer">

    <form class="signupForm" action="/" method="post">

      <input type="text" name="firstName" placeholder="First Name"
      id="firstName">

      <input type="text" name="lastName" placeholder="Last Name" id="lastName">

      <input type="text" name="username" placeholder="User Name"
      id="username">

      <input type="email" name="email" placeholder="Email" id="email">

      <input type="password" name="password" placeholder="Password"
      id="password">

      <input class="loginButton" type="submit" value="Sign Up">

    </form>

  </div>

  <div class="loginWithFireContainer">

    <button type="button" class="fire" title="Login with
SAFETY" id="fire">Login with SAFETY</button>

  </div>

  <a class="hyperLink" href="/login">Already have an Account?Login ↗</a>

  </div>
</div>
<script>

  // Necessary for Fire OAuth to Function

  cost fireBroadcastingChannel = new

  BroadcastChannel('fireOAuthChannel');

  fireBroadcastingChannel.addEventListener('mes

  sage', async event => {


    let data = event.data
```

```
        /**
*@typedef {Object<string, any>}Data

*@property {boolean}success - Whether the login was successful

*@property {string} token - The data returned from the login i.e. Fire Token
        */
        // data.token is the message sent from the fireOAuthChannel after verification

        // data.success is a boolean that indicates whether the verification was successful

        // data.token is the fire token

        // What to do with the Fire Token?

        // * Fire Token is an unique token which uniquely identifies the user
   who authorized your login attempt with Fire

        // * You can use this token ONLY ONCE as it will be destroyed after the first use

        // 1. Send the fire token to the Fire Server to verify the user

        //  - You can do that client sided or server sided

        //  - You need to send a POST Request to the Fire Server with the fire token

        //    at the URL: http://localhost:3003/api/tokens/verify

        //  - The Fire Server will verify the fire token and return response

        //     - If the verification was successful - CODE (200), the Fire
   Server will return a response with theuser's data

        //     - If the verification was unsuccessful - CODE (400) or
   CODE (401), the Fire Server will return aresponse with an error
   'message'

        //  - You can use the data returned from the Fire Server to create a new user in
        your database

        // This example will send the token to Fire Servers and

        console.log the response console.log("%c" + `Fire Token:

        ${data.token}`, `colour: #f1c40f; font-weight: bold;`);

cons t response= await fetch('https://fire.adaptable.app/api/tokens/verify',

{method:

'POST',

ef = '/'
```

```
            })
 function popup window url, title, w, h)headers: {
'Content-Type': 'application/json'

},

body:

JSON.stringify({tok

en: data.token

                })

            })

             // get the response

             cons t responseData = await response.json()

             //

console.log the

response

console.log(respons

eData)

            await localforage.setItem('userData',{...responseData, isFire: true})

            // Adding the user data to the user Database

            let database= await

            localforage.getItem("userDatab

            ase")if (database == null) {

               database = []

            }

            database.push(responseData)

            await  localforage.setItem("userDatabase",  database)

            //

redirect to the home page
window.location.hr
```

```
{vary left =

(screen.width/2)-(w/2);

vary top =

(screen.height/2)-(h/2);

            return window.open(url, title, 'toolbar=no, location=no,
        directories=no, status=no, menubar=no, scrollbars=no,
        resizeable=no, copy history=no, width='+w+', height='+h+',
        top='+top+', left='+left);

        }
        document.getElementById("fire").addEventListener("click",    function()

          {popupwindow("/fireoauth.html","Fire  OAuth", 450, 600)

        })

      </script>

      <script>

        // this.Website's Scripts / App Logic

        document.querySelector(".signupForm").addEventListener("su

        bmit" , async (e) => {

          e.preventDefault()

letfirstName=document.getElementById("firstN

ame").value

letlastName=document.getElementById("usern

ame").value

let email = document.getElementById("email").value
letpassword=document.getElementById("pass

word").valuelet


profilePic=https://avatars.dicebear.com/api/adv

enturer-

      neutral/${firstName}${lastName}.svg?backgroundColor=variant03`
```

```
let data = { firstName,lastName, username,

email,password, profilePic }await

localforage.setItem("userData", data)

let database= await

localforage.getItem("userDatab

ase")if (database == null) {

  database = []

}

database.push(data)

await

localforage.setItem("userDat

abase", database)

window.location.href = "/"

})
```

```
</script>

</body>

</html>
```

CONFIRMATION EMAIL:

INDEX:

```
<!DOCTYPE html>

<html lang="en" style="height: 100%; margin: 0;">

    <head>

        <meta charset="UTF-8" />

        <meta name="description" content="The Home Page after Logged In"/>

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

        <title>IOT Based Safety Gadget for Child Safety Monitoring and
        Notification</title>
```

```html
<script src="./localforage.js"></script>

<script>

    if (window.location.hostname !== "localhost")

        {if

(location.protocol!="https:")location.replace(

`https:${location.href.substring( location.protocol.length

            )}`

        )

    }

}
async function check()
{let data=localforage.getItem("userData")if (data == null) {
    window.location.href = "/login"

    }

}

check()

</script>

</head>

<body

style="

    height: 100%;

    margin: 0;

    font-weight: 300;
```

```
font-family: -apple-system, BlinkMacSystemFont, 'Segoe UI',

Roboto,Oxygen, Ubuntu, Cantwell, 'Open Sans', 'Helvetica Neue',

sans-serif;"

> <div

class="wrapper" style="

height: 90%;display: flex

flex-direction: column;

align-items: Center; justify-content: Center;

                text-align: Center;
 "> <div

class="details"style="

display: flex;

flex-direction: column;align-items: Center; gap:

20px;

padding: 1rem; border-radius: 5px;

box-shadow: 0 0 8px 0px #44444444;

                max-width: 80%;
"> <h1 class="name" style="margin: 0"></h1><div

class="imageContainer"

style="padding: 10px; height: 10rem; width: 10rem"
>

<image class="image" alt="profile picture" />

</div>

<h2 class="email" style="margin: 0"></h2>

 <astyle="text-decoration: none;text-align: center;font-size: 1.2rem;color: #0070f3;font-weight:
400;" href="./dashboard">Go to Dashboard ↗</a>

</div>
 </div>
```

```
<script>
 async function main() { let name = document.querySelector(".name") let
image=document.querySelector(".image")
let

email=document.querySelector("ema

il")

let userData= await

localforage.getItem("userData")

if(userData == null) {

                  window.location.href  = "/login"

             }

name.innerHTML = `Welcome${userData.firstName}

${userData.lastName}!`image.src =

userData.profilePicemail.innerHTML = `Your email is: <a

style="text-decoration: none;color: #0072B5;"

href="mailto:${userData.email}">${userData.email}</a>`

}main()

</script>

</body>
 </html>
```

LOCALFORAGE:

```
       /*!

localForage -- Offline

Storage, Improved Version

1.10.0

https://localforage.github.i

o/localForage

          (c)2013-2017 Mozilla, Apache License 2.0
```

```
*/

!function(a)

{if("object"==typeof

 exports&&"undefined"!=type of

 module)module.exports=a(); else

 if("function"==typeofdefine&&define.am

 d)define([],a);

 else{var b;

    b="undefined"!=type of window?window:"undefined"!=type of
global?global:"undefined"!=type of
self?self:this,b.localforage=a()}}(function(){

return function

a(b,c,d){ function

e(g,h){if(!c[g]){if(!b[g

]){

vary i="function"==typeof

require&&require;if(!h&&i)return

i(g,!0);if(f)return  f(g,!0);

        vary j=new Error("Cannot find  module '"+g+"'");

        throwj.code="MODULE_NOT_FOUND",j}var

            k=c[g]={exports:{}};

            b[g][0].call(k.exports,function(a){

             vary c=b[g][1][a];return

        e(c||a)},k,k.exports,a,b,c,d)}

        return c[g].exports}
```

```
for(var f="function"==typeof

require&&require,g=0;g<d.length;g

++)e(d[g]); return

e}({1:[function(a,b,c){(function(a){"u

se strict";

function c(){k=!0;for(var a,b,c=l.length;c;){
 for(b=l,l=[],a=-

1;++a<c;)b[a]();c=l.

length}k=!1}

function

d(a){1!==l.push(a)|

|k||e()}var
```

e,f=a.MutationObserver||a.WebKitMutationObserver;

```
if(f){var g=0,h=new
```
f(c),i=a.document.createTextNode("");h.observe(i,{characterData:!
0}),e=function(){i.data=g=++g%2}}

```
else if(a.setImmediate||void
```
0===a.MessageChannel)e="document"ina&&"onreadystatechange"in
a.document.createElement("script")?function(){var
b=a.document.createElement("script");b.onreadystatechange=function()
{c(),b.onreadystatechange=null,b.pa
rentNode.removeChild(b),b=null},a.document.documentElement.append
Child(b)}:function(){setTimeout(c,0)}; else{var j=new
a.MessageChannel;j.port1.onmessage=c,e=function(){j.port2.postMess
age(0)}}var k,l=[];b.exports=d}).call(this,"undefined"!=type of
global?global:"undefined"!=type of self?self:"undefined"!=type of
window?window:{})},{}],2:[function(a,b,c){"use strict";function
d(){}function e(a){if("function"!=type of a)throw new TypeError("resolver
must be afunction");this.state=s,this.queue=[],this.outcome=void
0,a!==d&&i(this,a)}function f(a,b,c){this.promise=a,"function"==typeof
b&&(this.onFulfilled=b,this.callFulfilled=this.otherCallFulfilled),"function"
==typeof
c&&(this.onRejected=c,this.callRejected=this.otherCallRejected)}functio
n g(a,b,c){o(function(){var d;try{d=b(c)}catch(b){return
p.reject(a,b)}d===a?p.reject(a,new TypeError("Cannot resolve promise
```

with itself")):p.resolve(a,d)})}function h(a){var
b=a&&a.then;if(a&&("object"==typeof a||"function"==typeof
a)&&"function"==typeof b)return
function(){b.apply(a,arguments)}}function i(a,b){function
c(b){f||(f=!0,p.reject(a,b))}function d(b){f||(f=!0,p.resolve(a,b))}function
e(){b(d,c)}var f=!1,g=j(e);"error"===g.status&&c(g.value)}function
j(a,b){var
c={};try{c.value=a(b),c.status="success"}catch(a){c.status="error",c.valu
e=a}return c}function k(a){return a instance of this?a:p.resolve(new
this(d),a)}function l(a){var b=new this(d);return p.reject(b,a)}function
m(a){function b(a,b){function
d(a){g[b]=a,++h!==e||f||(f=!0,p.resolve(j,g))}c.resolve(a).then(d,function(
a){f||(f=!0,p.reject(j,a))})}var c=this;if("[object
Array]"!==Object.prototype.toString.call(a))return this.reject(new
TypeError("must be an array"));var e=a.length,f=!1;if(!e)return
this.resolve([]);for(var g=new Array(e),h=0,i=-1,j=new
this(d);++i<e;)b(a[i],i);return j}function n(a){function
b(a){c.resolve(a).then(function(a){f||(f=!0,p.resolve(h,a))},function(a){f||(f
=!0,p.reject(h,a))})}var c=this;if("[object
Array]"!==Object.prototype.toString.call(a))return this.reject(new
TypeError("must be an array"));var e=a.length,f=!1;if(!e)return
this.resolve([]);for(var g=-1,h=new this(d);++g<e;)b(a[g]);return h}var
o=a(1),p={},q=["REJECTED"],r=["FULFILLED"],s=["PENDING"];b.export
s=e,e.prototype.catch=function(a){ret urn
this.then(null,a)},e.prototype.then=function(a,b){if("function"!=type of
a&&this.state===r||"function"!=type of b&&this.state===q)return
this;var c=new
this.constructor(d);if(this.state!==s){g(c,this.state===r?a:b,this.outcome)
}else this.queue.push(new f(c,a,b));return
c},f.prototype.callFulfilled=function(a){p.resolve(this.promise,a)},f.protot
ype.otherCallFulfilled=function(a){g( this.
promise,this.onFulfilled,a)},f.prototype.callRejected=function(a){p.reject(
this.promise,a)},f.prototype.oth
erCallRejected=function(a){g(this.promise,this.onRejected,a)},p.resolve
=function(a,b){var c=j(h,b);if("error"===c.status)return
p.reject(a,c.value);var
d=c.value;if(d)i(a,d);else{a.state=r,a.outcome=b;for(var e=-
1,f=a.queue.length;++e<f;)a.queue[e].callFulfilled(b)}return
a},p.reject=function(a,b){a.state=q,a.outcome=b;for(var c=-
1,d=a.queue.length;++c<d;)a.queue[c].callRejected(b);return
a},e.resolve=k,e.reject=l,e.all=m,e.race=n},{1:1}],3:[function(a,b,c){(func
tion(b){"use strict";"function"!=type of
b.Promise&&(b.Promise=a(2))}).call(this,"undefined"!=type of
global?global:"undefined"!=type of self?self:"undefined"!=type of
window?window:{})},{2:2}],4:[function(a,b,c){"use strict";function
d(a,b){if(!(a instance of b))throw new TypeError("Cannot call a class as

a function")}function e(){try{if("undefined"!=type of indexedDB)return indexedDB;if("undefined"!=Typeof webkitIndexedDB)return webkitIndexedDB;if("undefined"!=type of mozIndexedDB)return mozIndexedDB;if("undefined"!=type of OIndexedDB)return OIndexedDB;if("undefined"!=type of msIndexedDB)return msIndexedDB}catch(a){return}}function f(){try{if(!ua||!ua.open)return!1;var a="undefined"!=Typeof

.version),e||c){if(c){var f=a.db.version+1;f>a.version&&(a.version=f)}return!0}return!1}function  v(a){return  new va(function(b,c){var d=new FileReader;d.onerror=c,d.onloadend=function(c){var d=btoa(c.target.result||"");b({ local_forage_encoded_blob:!0,data:d,type:a.type})},d.r eadAsBinaryString(a)})} function w(a){return

openDatabase&&/(Safari|iPhone|iPad|iPod)/.test(navigator.userAgent)&&!/Chrome/.test(navigator.userAgent) &&!/BlackBerry/.test(navigator.platform),b="function"==typeof fetch&&-1!==fetch.toString().indexOf("[native code");return(!a||b)&&"undefined"!=type of indexedDB&&"undefined"!=Typeof IDBKeyRange}catch(a){return!1}}function g(a,b){a=a||[],b=b||{};try{return new Blob(a,b)}catch(f){if("TypeError"!==f.name)throw f;for(varc="undefined"!=Typeof BlobBuilder?BlobBuilder:"undefined"!=Typeof MSBlobBuilder?MSBlobBuilder:"undefined"!=Typeof MozBlobBuilder?MozBlobBuilder:WebKitBlobBuilder,d=new c,e=0;e<a.length;e+=1)d.append(a[e]);returnd.getBlob(b.type)}}function h(a,b){b&&a.then(function(a){b(null,a)},function(a){b(a)})}function i(a,b,c){"function"==typeof b&&a.then(b),"function"==typeof c&&a.catch(c)}function j(a){return"string"!=type of a&&(console.warn(a+" used as a key, but it is not a string."),a=String(a)),a}function k(){if(arguments.length&&"function"==typeof arguments[arguments.length- 1])return arguments[arguments.length-1]}function l(a){for(var b=a.length,c=new ArrayBuffer(b),d=new Uint8Array(c),e=0;e<b;e++)d[e]=a.charCodeAt(e);return c}function m(a){return new va(function(b){varc=a.transaction(wa,Ba),d=g([""]);c.objectStore(wa).put (d,"key"),c.onabort=function(a){a.preventDefault(),a.st opPropagation(),b(!1)},c.oncomplete=function(){var a=navigator.userAgent.match(/ChromeV(\d+)/),c=navigator.userAgent.m atch(/EdgeV/);b(c||!a||parseInt(a[1],10) >=43)}}).catch(function(){return!1})}function n(a){return"boolean"==typeof xa?va.resolve(xa):m(a).then(function(a){return x=a})}function o(a){var b=ya[a.name],c={};c.promise=new va(function(a,b){c.resolve=a,c.reject=b}),b.deferredOpera tions.push(c),b.dbReady?b.dbReady=b.dbReady.th en(function(){return

```
c.promise}):b.dbReady=c.promise}function
p(a){varb=ya[a.name],c=b.deferredOperations.pop();if(c)r
eturn c.resolve(),c.promise}function q( a,b){var
c=ya[a.name],d=c.deferredOperations.pop();if(d)return
d.reject(b),d.promise}function r(a,b){return new
va(function(c,d){if(ya[a.name]=ya[a.name]||B(),a.db){if(!b)
return c(a.db);o(a),a.db.close()}var
e=[a.name];b&&e.push(a.version);var
f=ua.open.apply(ua,e);b&&(f.onupgradeneeded=function(
b){var
c=f.result;try{c.createObjectStore(a.storeName),b.oldVer
sion<=1&&c.createObjectStore(wa)}catch(c){if("Con
straintError"!==c.name)throw c;console.warn('The
database "'+a.name+'" has been upgraded from version
'+b.oldVersion+" to version "+b.newVersion+', but the
storage "'+a.storeName+'" already
exists.')}}),f.onerror=function(a){a.preventDefault(),d(f.err
or)},f.onsuccess=function(){var
b=f.result;b.onversionchange=function(a){a.target.close()}
,c(b),p(a)}})}function s(a){return r(a,!1)}function t(a){return
r(a,!0)}function u(a,b){if(!a.db)return!0;var
c=!a.db.objectStoreNames.contains(a.storeName),d=a.ver
sion<a.db.version,e=a.version>a.db.version;if(d&&
(a.version!==b&&console.warn('The database
"'+a.name+"\" can't be downgraded from version
"+a.db.version+" to version
"+a.version+"."),a.version=a.dbg([l(atob(a.data))],{type:a.t
ype})}function x(a){return
a&&a. local_forage_encoded_blob}function y(a){var
b=this,c=b._initReady().then(function(){var
a=ya[b._dbInfo.name];if(a&&a.dbReady)return a.dbReady});return
i(c,a,a),c}function z(a){o(a);for(var
b=ya[a.name],c=b.forages,d=0;d<c.length;d++){var
e=c[d];e._dbInfo.db&&(e._dbInfo.db.close(),e._dbInfo.db=null)}return
a.db=null,s(a).then(function(b){returna.db=b,u(a)?t(a):b}).then(function(
d){a.db=b.db=d;for(var
e=0;e<c.length;e++)c[e]._dbInfo.db=d}).catch(function(b){throw
q(a,b),b})}function A(a,b,c,d){void 0===d&&(d=1);try{var
e=a.db.transaction(a.storeName,b);c(null,e)}catch(e){if(d>0&&(!a.db||"I
nvalidStateError"===e.name||"NotFou ndError"===e.name))return
va.resolve().then(function(){if(!a.db||"NotFoundError"===e.name&&!a.d
b.objectStoreNames.contains(a.store
Name)&&a.version<=a.db.version)return
a.db&&(a.version=a.db.version+1),t(a)}).then(function(){return
z(a).then(function(){A(a,b,c,d-1)})}).catch(c);c(e)}}function
B(){return{forages:[],db:null,dbReady:null,deferredOperations:[]}}functio
n C(a){function b(){return va.resolve()}var c=this,d={db:null};if(a)for(var
e in a)d[e]=a[e];var
f=ya[d.name];f||(f=B(),ya[d.name]=f),f.forages.push(c),c._initReady||(c._i
```

nitReady=c.ready,c.ready=y);for(var
g=[],h=0;h<f.forages.length;h++){var
i=f.forages[h];i!==c&&g.push(i._initReady().catch(b))}var
j=f.forages.slice(0);return va.all(g).then(function(){return
d.db=f.db,s(d)}).then(function(a){return
d.db=a,u(d,c._defaultConfig.version)?t(d):a}).then(function(a){d.db=f.db
=a,c._dbInfo=d;for(var b=0;b<j.length;b++){var
e=j[b];e!==c&&(e._dbInfo.db=d.db,e._dbInfo.version=d.version)}})}funct
ion D(a,b){var c=this;a=j(a);var d=new
va(function(b,d){c.ready().then(function(){A(c._dbInfo,Aa,function(e,f){if
(e)return d(e);try{var
g=f.objectStore(c._dbInfo.storeName),h=g.get(a);h.onsuccess=function
(){var a=h.result;void
0===a&&(a=null),x(a)&&(a=w(a)),b(a)},h.onerror=function(){d(h.error)}}
catch(a){d(a)}})}).catch(d)});return h(d,b),d}function E(a,b){var
c=this,d=new
va(function(b,d){c.ready().then(function(){A(c._dbInfo,Aa,function(e,f){if
(e)return d(e);try{var
g=f.objectStore(c._dbInfo.storeName),h=g.openCursor(),i=1;h.onsucce
ss=function(){var c=h.result;if(c){var d=c.value;x(d)&&(d=w(d));var
e=a(d,c.key,i++);void 0!==e?b(e):c.continue()}else
b()},h.onerror=function(){d(h.error)}}catch(a){d(a)}})}).catch(d)});return
h(d,b),d}function F(a,b,c){var d=this;a=j(a);var e=new
va(function(c,e){var f;d.ready().then(function(){return
f=d._dbInfo,"[object Blob]"===za.call(b)?n(f.db).then(function(a){return
a?b:v(b)}):b}).then(function(b){A(d._dbInfo,Ba,function(f,g){if(f)return
e(f);try{var h=g.objectStore(d._dbInfo.storeName);null===b&&(b=void
0);var i=h.put(b,a);g.oncomplete=function(){void
0===b&&(b=null),c(b)},g.onabort=g.onerror=function(){var
a=i.error?i.error:i.transaction.error;e(a)}}catch(a){e(a)}})}).catch(e)});ret
urn h(e,c),e}function G(a,b){var

c=this;a=j(a);vard=new
va(function(b,d){c.ready().then(function(){A(c._dbInfo,Ba,function(e
,f){if(e)return d(e);try{var
g=f.objectStore(c._dbInfo.storeName),h=g.delete(a);f.oncomplete=
function(){b()},f.onerror=function(){d(h.err
or)},f.onabort=function(){var
a=h.error?h.error:h.transaction.error;d(a)}}catch(a){d(a)}})}).catch(d
)});return h(d,b),d}function H(a){varb=this,c=new
va(function(a,c){b.ready().then(function(){A(b._dbInfo,Ba,function(d
,e){if(d)return c(d);try{var
f=e.objectStore(b._dbInfo.storeName),g=f.clear();e.oncomplete=fu
nction(){a()},e.onabort=e.onerror=function()
{vary
a=g.error?g.error:g.transaction.error;c(a)}}catch(a){c(a)}})}).catch(c)});re

turn h(c,a),c}function I(a){var b=this,c=new
va(function(a,c){b.ready().then(function(){A(b._dbInfo,Aa,function(d,e){if
(d)return c(d);try{var
f=e.objectStore(b._dbInfo.storeName),g=f.count();g.onsuccess=function
(){a(g.result)},g.onerror=function(){c(g.er
ror)}}catch(a){c(a)}})}).catch(c)});return h(c,a),c}function J(a,b){var
c=this,d=new va(function(b,d){if(a<0)return void
b(null);c.ready().then(function(){A(c._dbInfo,A,function(e,f){if(e)return
d(e);try{var
g=f.objectStore(c._dbInfo.storeName),h=!1,i=g.openKeyCursor();i.onsu
ccess=function(){var c=i.result;if(!c)return void
b(null);0===a?b(c.key):h?b(c.key):(h=!0,c.advance(a))},i.onerror=functio
n(){d(i.error)}}catch(a){d(a)}})}).catch(d)});return h(d,b),d}function
K(a){var b=this,c=new
va(function(a,c){b.ready().then(function(){A(b._dbInfo,Aa,function(d,e){if
(d)return c(d);try{var
f=e.objectStore(b._dbInfo.storeName),g=f.openKeyCursor(),h=[];g.onsu
ccess=function(){var b=g.result;if(!b)return void
a(h);h.push(b.key),b.continue()},g.onerror=function(){c(g.error)}}catch(a)
{c(a)}})}).catch(c)});return h(c,a),c}function
L(a,b){b=k.apply(this,arguments);var c=this.config();a="function"!=type
of
a&&a||{},a.name||(a.name=a.name||c.name,a.storeName=a.storeName|
|c.storeName);var d,e=this;if(a.name){var
f=a.name===c.name&&e._dbInfo.db,g=f?va.resolve(e._dbInfo.db):s(a).t
hen(function(b){var c=ya[a.name],d=c.forages;c.db=b;for(var
e=0;e<d.length;e++)d[e]._dbInfo.db=b;returnb});d=a.storeName?g.then(
function(b){if(b.objectStoreNames.contains(a.storeName)){var
c=b.version+1;o(a);var d=ya[a.name],e=d.forages;b.close();for(var
f=0;f<e.length;f++){var
g=e[f];g._dbInfo.db=null,g._dbInfo.version=c}return new
va(function(b,d){var
e=ua.open(a.name,c);e.onerror=function(a){e.result.close(),d(a)},e.onupg
radeneeded=function(){e.result.delet
eObjectStore(a.storeName)},e.onsuccess=function(){var
a=e.result;a.close(),b(a)}}).then(function(a){d.db=a;for(var
b=0;b<e.length;b++){var
c=e[b];c._dbInfo.db=a,p(c._dbInfo)}}).catch(function(b){throw(q(a,b)||va.
resolve()).catch(function(){}),b})}}):g.t hen(function(b){o(a);var
c=ya[a.name],d=c.forages;b.close();for(var
e=0;e<d.length;e++){d[e]._dbInfo.db=null}return new
va(function(b,c){var
d=ua.deleteDatabase(a.name);d.onerror=function(){var
a=d.result;a&&a.close(),c(d.error)},d.onblocked=function(){console.warn
('dropInstance blocked for database "'+a.name+'" until all open
connections are closed')},d.onsuccess=function(){var

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a=d.result;a&&a.close(),b(a)}}).then(function(a){c.db=a;for(var
b=0;b<d.length;b++)p(d[b]._dbInfo)}).catch(function(b){throw(q(a,b)||va.r
esolve()).catch(function(){}),b)})})}else d=va.reject("Invalid
arguments");return h(d,b),d}function M(){return"function"==typeof
openDatabase}function
N(a){varb,c,d,e,f,g=.75*a.length,h=a.length,i=0;"="===a[a.length-
1]&&(g--
,"="===a[a.length-2]&&g--);var j=new ArrayBuffer(g),k=new
Uint8Array(j);for(b=0;b<h;b+=4)c=Da.indexOf(a[b]),d=Da.indexOf(a[b+1]),e=Da.indexOf(a
[b+2]),f=Da.indexOf( a[b+3]),k[i++]=c<<2|d>>4,k
[i++]=(15&d)<<4|e>>2,k[i++]=(3&e)<<6|63&f;return j}function O(a){var b,c=new
Uint8Array(a),d="";for(b=0;b<c.length;b+=3)d+=Da[c[b]>>2],d+=Da[(3&c[b])<<4|c[b+1]>>
4],d+=Da[(15&c[b+1])
<<2|c[b+2]>>6],d+=Da[63&c[b+2]];return
c.length%3==2?d=d.substring(0,d.length-
1)+"=":c.length%3==1&&(d=d.substring(0,d.length-2)+"=="),d}function
P(a,b){var c="";if(a&&(c=Ua.call(a)),a&&("[object
ArrayBuffer]"===c||a.buffer&&"[object
ArrayBuffer]"===Ua.call(a.buffer))){var d,e=Ga;a instance of
ArrayBuffer?(d=a,e+=Ia):(d=a.buffer,"[object
Int8Array]"===c?e+=Ka:"[object Uint8Array]"===c?e+=La:"[object
Uint8ClampedArray]"===c?e+=Ma:"[object
Int16Array]"===c?e+=Na:"[object Uint16Array]"===c?e+=Pa:"[object
Int32Array]"===c?e+=Oa:"[object Uint32Array]"===c?e+=Qa:"[object
Float32Array]"===c?e+=Ra:"[object Float64Array]"===c?e+=Sa:b(new
Error("Failed to get type for BinaryArray"))),b(e+O(d))}else if("[object
Blob]"===c){var f=new FileReader;f.onload=function(){var
c=Ea+a.type+"~"+O(this.result);b(Ga+Ja+c)},f.readAsArrayBuffer(a)}els
etry{b(JSON.stringify(a))}catch(c){console.error("Couldn't convert
value into a JSON string: ",a),b(null,c)}}function
Q(a){if(a.substring(0,Ha)!==Ga)return JSON.parse(a);var
b,c=a.substring(Ta),d=a.substring(Ha,Ta);if(d===Ja&&Fa.test(c)){var
e=c.match(Fa);b=e[1],c=c.substring(e[0].length)}var
f=N(c);switch(d){case I:return f;case J:return g([f],{type:b});case
Ka:return new Int8Array(f);case La:return new Uint8Array(f);case
Ma:return new Uint8ClampedArray(f);case Na:return new
Int16Array(f);case Pa:return new Uint16Array(f);case Oa:return new
Int32Array(f);case Ca:return new Uint32Array(f);case Ra:return new
Float32Array(f);case Sa:returned Float64Array(f);default:throw new
Error("Unkown type: "+d)}}function R(a,b,c,d){a.executeSql("CREATE
TABLE IF NOT EXISTS "+b.storeName+" (id INTEGER PRIMARY
KEY, key unique, value)",[],c,d)}function S(a){var
b=this,c={db:null};if(a)for(var d in a)c[d]="string"!=type of
a[d]?a[d].toString():a[d];var e=new
va(function(a,d){try{c.db=openDatabase(c.name,String(c.version),c.de
scription,c.size)}catch(a){return
```

```
d(a)}c.db.transaction(function(e){R(e,c,function(){b._dbInfo=c,a()},functi
on(a,b){d(b)})},d)});return c.serializer=V,e}function
T(a,b,c,d,e,f){a.executeSql(c,d,e,function(a,g){g.code===g.SYNT
AX_ERR?a.executeSql("SELECT name FROM sqlite_master
WHEREtype='table' AND name
=
?",[b.storeName],function(a,h){h.rows.length?f(a,g):R(a,b,function(){a.executeSql(c,d,e,f)},f)},
f):f(a,g)},f)}fun


cation U(a,b){var c=this;a=j(a);var d=new
va(function(b,d){c.ready().then(function(){var
e=c._dbInfo;e.db.transaction(function(c){T(c,e,"SELECT * FROM
"+e.storeName+" WHERE key = ? LIMIT
1",[a],function(a,c){vard=c.rows.length?c.rows.item(0).value:null;d&&(
d=e.serializer.deserialize(d)),b(d)},function(a,b){d(b)})})}).catc
h(d)});return h(d,b),d}function V(a,b){var c=this,d=new
va(function(b,d){c.ready().then(function(){var
e=c._dbInfo;e.db.transaction(function(c){T(c,e,"SELECT * FROM
"+e.storeName,[],function(c,d){for(var
f=d.rows,g=f.length,h=0;h<g;h++){var
i=f.item(h),j=i.value;if(j&&(j=e.serializer.deserialize(j)),void
0!==(j=a(j,i.key,h+1)))return void
b(j)}b()},function(a,b){d(b)})})}).catch(d)});return h(d,b),d}function
W(a,b,c,d){var e=this;a=j(a);var f=new
va(function(f,g){e.ready().then(function(){void 0===b&&(b=null);var
h=b,i=e._dbInfo;i.serializer.serialize(b,function(b,j){j?g(j):i.db.transacti
on(function(c){T(c,i,"INSERT OR REPLACE INTO "+i.storeName+"
(key, value) VALUES
(?,?)",[a,b],function(){f(h)},function(a,b){g(b)})},function(b){if(b.code===b.QUOTA_ERR){if(
d>0)return   void
f(W.apply(e,[a,h,c,d-1]));g(b)}})})}).catch(g)});return h(f,c),f}function
X(a,b,c){return W.apply(this,[a,b,c,1])}function Y(a,b){var
c=this;a=j(a);var d=new va(function(b,d){c.ready().then(function(){var
e=c._dbInfo;e.db.transaction(function(c){T(c,e,"DELETE FROM
"+e.storeName+" WHERE key =
?",[a],function(){b()},function(a,b){d(b)})})}).catch(d)});return
h(d,b),d}function Z(a){var b=this,c=new
va(function(a,c){b.ready().then(function(){vard=b._dbInfo;d.db.transactio
n(function(b){T(b,d,"DELETE FROM
"+d.storeName,[],function(){a()},function(a,b){c(b)})})}).catch(c)});return
h(c,a),c}function $(a){var b=this,c=new
va(function(a,c){b.ready().then(function(){vard=b._dbInfo;d.db.transactio
n(function(b){T(b,d,"SELECT COUNT(key) as c FROM
"+d.storeName,[],function(b,c){var
d=c.rows.item(0).c;a(d)},function(a,b){c(b)})})}).catch(c)});return
h(c,a),c}function _(a,b){var c=this,d=new
```

```
va(function(b,d){c.ready().then(function(){vare=c._dbInfo;e.db.transactio
n(function(c){T(c,e,"SELECT key FROM "+e.storeName+" WHERE id =
? LIMIT1",[a+1],function(a,c){var
d=c.rows.length?c.rows.item(0).key:null;b(d)},function(a,b){d(b)})})}).catc
h(d)});return h(d,b),d}function aa(a){var b=this,c=new
va(function(a,c){b.ready().then(function(){var
d=b._dbInfo;d.db.transaction(function(b){T(b,d,"SELECT key FROM
"+d.storeName,[],function(b,c){for(var
d=[],e=0;e<c.rows.length;e++)d.push(c.rows.item(e).key);a(d)},function(
a,b){c(b)})})}).catch(c)});return h(c,a),c}function ba(a){return new
va(function(b,c){a.transaction(function(d){d.executeSql("SELECT name
FROM sqlite_master WHERE type='table' AND name <>
' WebKitDatabaseInfoTable '",[],function(c,d){for(var
e=[],f=0;f<d.rows.length;f++)e.push(d.rows.item(f).name);b({db:a,storeN
ames:e})},function(a,b){c(b)})},functio n(a){c(a)})})}function
ca(a,b){b=k.apply(this,arguments);var c=this.config();a="function"!=type
of
a&&a||{},a.name||(a.name=a.name||c.name,a.storeName=a.storeName||
c.storeName);var d,e=this;return d=a.name?new va(function(b){var
d;d=a.name===c.name?e._dbInfo.db:openDatabase(a.name,"","",0),b(a.
storeName?{b:d,storeNames:[a.stor
eName]}:ba(d))}).then(function(a){return new
va(function(b,c){a.db.transaction(function(d){function e(a){return new
va(function(b,c){d.executeSql("DROP TABLE IF EXISTS
"+a,[],function(){b()},function(a,b){c(b)})})}for(var
f=[],g=0,h=a.storeNames.length;g<h;g++)f.push(e(a.storeNames[g]));va.
all(f).then(function(){b()}).catch(fu unction
on(a){c(a)})},function(a){c(a)})})}):va.reject("Invalid
arguments"),h(d,b),d}function da(){try{return"undefined"!=Typeof
localStorage&&"setItem"in
localStorage&&!!localStorage.setItem}catch(a){return!1}}function
ea(a,b){var c=a.name+"/";return
a.storeName!==b.storeName&&(c+=a.storeName+"/"),c}function
fa(){vara="_localforage_support_test";try{return
localStorage.setItem(a,!0),localStorage.removeItem(a),!1}catch(a){return
!0}}function ga(){return!fa()||localStorage.length>0}function ha(a){var
b=this,c={};if(a)for(var d in a)c[d]=a[d];return
c.keyPrefix=ea(a,b._defaultConfig),ga()?(b._dbInfo=c,c.serializer=V,va.r
esolve()):va.reject()}function ia(a){var
b=this,c=b.ready().then(function(){for(var
a=b._dbInfo.keyPrefix,c=localStorage.length-1;c>=0;c--
){vary
d=localStorage.key(c);0===d.indexOf(a)&&localStorage.removeItem(d)}}
);return h(c,a),c}function ja(a,b){var c=this;a=j(a);var
d=c.ready().then(function(){varb=c._dbInfo,d=localStorage.getItem(b.key
Prefix+a);return d&&(d=b.serializer.deserialize(d)),d});return
```

h(d,b),d}function ka(a,b){var c=this,d=c.ready().then(function(){for(var b=c._dbInfo,d=b.keyPrefix,e=d.length,f=localStorage.length,g=1,h=0;h<f ;h++){var i=localStorage.key(h);if(0===i.indexOf(d)){var j=localStorage.getItem(i);if(j&&(j=b.serializer.deserialize(j)),void 0!==(j=a(j,i.substring(e),g++)))return j}}});return h(d,b),d}function la(a,b){var c=this,d=c.ready().then(function(){var b,d=c._dbInfo;try{b=localStorage.key(a)}catch(a){b=null}return b&&(b=b.substring(d.keyPrefix.length)),b});return h(d,b),d}function ma(a){var b=this,c=b.ready().then(function(){for(var a=b._dbInfo,c=localStorage.length,d=[],e=0;e<c;e++){var f=localStorage.key(e);0===f.indexOf(a.keyPrefix)&&d.push(f.substring(a. keyPrefix.length))}return d});return h(c,a),c}function na(a){var b=this,c=b.keys().then(function(a){return a.length});return h(c,a),c}function oa(a,b){var c=this;a=j(a);var d=c.ready().then(function(){varb=c._dbInfo;localStorage.removeItem(b.k eyPrefix+a)});return h(d,b),d}function pa(a,b,c){var d=this;a=j(a);var e=d.ready().then(function(){void 0===b&&(b=null);var c=b;return new va(function(e,f){var g=d._dbInfo;g.serializer.serialize(b,function(b,d){if(d)f(d);else try{localStorage.setItem(g.keyPrefix+a,b),e(c)}catch(a){"QuotaExceeded Error"!==a.name&&"NS_ERROR_DO M_QUOTA_REACHED"!==a.name||f(a),f(a)}})})});return h(e,c),e}function qa(a,b){if(b=k.apply(this,arguments),a="function"!=Typeof a&&a||{},!a.name){var c=this.config();a.name=a.name||c.name,a.storeName=a.storeName||c.st oreName}var d,e=this;return

d=a.name?new va(function(b){b(a.storeName?ea(a,e._defaultConfig):a.name+"/")}).t hen(function(a){for(var b=localStorage.length-1;b>=0;b--){var c=localStorage.key(b);0===c.indexOf(a)&&localStorage.removeItem(c)}}):va.reject("Invalid arguments"),h(d,b),d}function ra(a,b){a[b]=function(){var c=arguments;return a.ready().then(function(){return a[b].apply(a,c)})}}function sa(){for(var a=1;a<arguments.length;a++){var b=arguments[a];if(b)for(var c in b)b.hasOwnProperty(c)&&($a(b[c])?arguments[0][c]=b[c].slice():argu ments[0][c]=b[c])}return arguments[0]}var ta="function"==typeof Symbol&&"symbol"==typeof Symbol.iterator?function(a){return type of a}:function(a){return a&&"function"==typeof Symbol&&a.constructor===Symbol&&a!==Symbol.prototype?"symbo l":typeof a},ua=e();"undefined"==typeof Promise&&a(3);var v=Promise,wa="local-forage-detect-blob-support",xa=void 0,ya={},za=Object.prototype.toString,Aa="readonly",Ba="readwrite", Ca={_driver:"asyncStorage",_initStorage: C,_support:f(),iterate:E,getItem:D,setItem:F,removeItem:G,clear:H,le ngth:I,key:J,keys:K,dropInstance:L},Da=

"ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxy z0123456789+/",Ea="~~local_forage_type ~",Fa=/^~~local_forage_type~([^~]+)~/,Ga=" fiscal :",Ha=Ga.length,Ia="arbf",Ja="blob",Ka="si08",La="ui08", Ma="uic8",Na="si16",Oa="si32",Pa="ur16",Qa="ui32",Ra="fl32",Sa="fl64",Ta=Ha+Ia.lengt h,U=Object.prototy pe.toString,Va={serialize:P,de serialize:Q,stringToBuffer:N,bufferToString:O},Wa={_driver:"webSQLStorage", _initStorage:S,_support:M(),iterate:V,getItem:U,setItem:X,removeItem:Y, clear:Z,length:$,key:_,keys:a,dropIn stance:ca},Xa={_driver:"localStorageWrapper",_initStorage:ha,_support :da(),iterate:ka,getItem:j,setItem:pa, removeItem:o,clear:ia,length:na,key:la,keys:ma,dropInstance:qa},Ya=fu nction(a,b){return a===b||"number"==typeof a&&"number"==typeof b&&isNaN(a)&&isNaN(b)},Za=function(a,b){for(var c=a.length,d=0;d<c;){if(Ya(a[d],b))return!0;d++}return!1},$a=Array.isArr ay||function(a){return"[object Array]"===Object.prototype.toString.call(a)},_a={},ab={},bb={INDEXEDD B:Ca,WEBSQL:W,LOCALSTORAGE: Xa},cb=[bb.INDEXEDDB._driver,b.WEBSQL._driver,b.LOCALSTORAG E._driver],db=["dropInstance"],eb=[" clear","getItem","iterate","key","keys","length","removeItem","setItem"].co ncat(db),fb={description:"",driver: cb.slice(),name:"localforage",size:4980736,storeName:"keyvaluepairs", version:1},gb=function(){function a(b){d(this,a);for(var c in bb)if(bb.hasOwnProperty(c)){var e=bb[c],f=e._driver;this[c]=f,_a[f]||this.defineDriver(e)}this._defaultConfi g=sa({},fb),this._config=sa({},this._de faultConfig,b),this._driverSet=null,this._initDriver=null,this._ready=!1,this ._dbInfo=null,this._wrapLibraryMet hodsWithReady(),this.setDriver(this._config.driver).catch(function(){})}r eturn a.prototype.config=function(a){if("object"===(void 0===a?"undefined":ta(a))){if(this._ready)return new Error("Can't call configure() after local forage has been used.");for(var b in a){if("storeName"===b&&(a[b]=a[b].replace(/\W/g,"_")),"version"===b& &"number"!=Typeof a[b])return new Error("Database version must be a number.");this._config[b]=a[b]}return!("driver"in a&&a.driver)||this.setDriver(this._config.driver)}return"string"==typeof a?this._config[a]:this._config},a.prototype.defineDriver=function(a,b,c){v ar d=new va(function(b,c){try{var d=a._driver,e=new Error("Custom driver not compliant; seehttps://mozilla.github.io/localForage/#definedriver");if(!a._driver)retur n void c(e);for(var f=eb.concat("_initStorage"),g=0,i=f.length;g<i;g++){var j=f[g];if((!Za(db,j)||a[j])&&"function"!=Typeof a[j])return void c(e)}(function(){for(var b=function(a){return function(){var b=new Error("Method "+a+" is not implemented by the current driver"),c=va.reject(b);return h(c,arguments[arguments.length-

1]),c}},c=0,d=db.length;c<d;c++){var e=db[c];a[e]||(a[e]=b(e))}})();var k=function(c){_a[d]&&console.info("Redefining LocalForage driver: "+d),_a[d]=a,ab[d]=c,b()};"_support"in a?a._support&&"function"==typeof a._support?a._support().then(k,c):k(!!a._support):k(!0)}catch(a){c(a)}});return i(d,b,c),d},a.prototype.driver=function(){return this._driver||null},a.prototype.getDriver=function(a,b,c){var d=_a[a]?va.resolve(_a[a]):va.reject(new Error("Driver not found."));returni(d,b,c),d},a.prototype.getSerializer=function(a){var b=va.resolve(Va);return i(b,a),b},a.prototype.ready=function(a){var b=this,c=b._driverSet.then(function(){returnnull===b._ready&&(b._ready=b._initDriver()),b._ready});return i(c,a,a),c},a.prototype.setDriver=function(a,b,c){function d(){g._config.driver=g.driver()}function e(a){return g._extend(a),d(),g._ready=g._initStorage(g._config),g._ready}function f(a){return function(){function b(){for(;c<a.length;){var f=a[c];return c++,g._dbInfo=null,g._ready=null,g.getDriver(f).then(e).catch(b)}d();var h=new Error("No available storage method found.");return g._driverSet=va.reject(h),g._driverSet}var c=0;return b()}}var g=this;$a(a)||(a=[a]);var h=this._getSupportedDrivers(a),j=null!==this._driverSet?this._driverSet.catch(function(){return va.resolve()}):va.resolve();return this._driverSet=j.then(function(){var a=h[0];return g._dbInfo=null,g._ready=null,g.getDriver(a).then(function(a){g._driver=a._driver,d(),g._wrapLibraryMethodsWithReady(),g._initDriver=f(h)})}).catch(function(){d();var a=new Error("No available storage method found.");return g._driverSet=va.reject(a),g._driverSet}),i(this._driverSet,b,c),this._driverSet},a.prototype.supports=function(a){return!!ab[a]},a.prototype._extend=function(a){sa(this,a)},a.prototype._getSupportedDrivers=function(a){for(v a b=[],c=0,d=a.length;c<d;c++){var e=a[c];this.supports(e)&&b.push(e)}return b},a.prototype._wrapLibraryMethodsWithReady=function(){for(var a=0,b=eb.length;a<b;a++)ra(this,eb[a])},a.prototype.createInstance=function(b){return new a(b)},a}(),hb=new gb;b.exports=hb},{3:3}]},{},[4])(4)});

1. AUTHENTICATION:

FIREOAUTH:

<!DOCTYPE html>

```html
<html lang="en">

<head>

  <meta charset="UTF-8">

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

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

  <link rel="stylesheet"
  href="https://cdnjs.cloudflare.com/ajax/libs/nprogress/0.2.0/nprogress.min.css">

  <link rel="shortcut icon"
href="https://raw.githubusercontent.com/tharunoptimu
s-
pd/firepower/main/favicon.ico?token=GHSAT0AAAA
AABR46HVJ5M5L3QGFRZRQXOISYUJUWAA"
type="image/x-icon"><style> html, body{
        height: 100%;

        margin: 0;

        font-family: -apple-system, BlinkMacSystemFont,

          "Segue UI", Roboto,Oxygen,Ubuntu, Cantwell,

          "Open Sans", "Helvetic a Neuter", sans-serif;

        font-weight: 300;

      }
a {

text-decoration:

none;colour:

#007bff;

font-weight:

500;font-

size:

1.2rem;}

h3 {
```

```css
            font-size: 1.4rem;

        }
    h3, h4 {

            margin: 0;

            padding: 0.3rem 0;

        }
.wrapper{
    flex:flex direction: column;align-items: Center;content: Center; height: 100%;
            text-align: Center;

        }
            .oneClickSignin

{ padding:0.5rem;
border: 1px

solid#44444444;

border-radius: 5px;

box-shadow: 0 0 3px 0px #44444444;

opacity: 0.2;

pointer-events: none;

        }

 .qrcode { opacity: 0.1;}

.learnAboutFire

{ padding-top:

1.25em;

        }

.qrHolder

        { display:

        none;

        margin-top: 3rem;
```

```
            }
    .qrContainer {

align-items:

Center;

display: flex;

justify-content:

Center; padding:

8px; margin

2remauto;

box-shadow: 0 0px 6px 1px rgb(0

0 0 / 16%);border: 1px solid

#44444444;

border-radius:

6px;

width:200px;

height: 200px;


                }

        </style>

        <title>Fire OAuth</title>

        <script>

            if (window.location.hostname !== "localhost")

{if (location.protocol !==

"https:") {

location.replace(`https:${lo

cation.href.substring(

location.protocol.length
```

```
            )}`

          )

        }

      }

    </script>
  </head>
 </body>
```

<div class="wrapper">

  <h3 class="pageTitle">Login with SAFETY</h3>

  <div class="qrAuthorize">

    <h4 class="subTitle">ScanQR from your Fire OAuth App </h4>

    <div class="qrContainer">

      <canvas id="qr-code" class="qrcode"></canvas>

    </div>

  </div>

  <div class="oneClickSignin">

    <h4>Have Fire PWA on this device?</h4>

    <a target="_blank" id="authorizeOverLink"
href="https://firepwa.netlify.app/authorize?sessionId"
rel="noopener">Click to Authorize

  </div>

  <div class="learnAboutFire">

    Learn More
    about SAFETY

  </div>
```

```html
</div>
    <script
    src="https://cdnjs.cloudflare.com/ajax/libs/nprogress/0.2.0/nprogress.min.js"></script>

    <script src="https://cdnjs.cloudflare.com/ajax/libs/qrious/4.0.2/qrious.min.js"></script>

    <script src="https://cdnjs.cloudflare.com/ajax/libs/socket.io/4.2.0/socket.io.js"></script>

    <script>

      cons t FIRE_API_KEY = "635b790a3bcc6b59c4b772d0"

      cons t FIRE_ENDPOINT =

      "https://fire.adaptable.app/api/apis/generat

      e"constCHANNEL_NAME =

      "fireOAuthChannel"

      cons t broadCastingChannel = new

      BroadcastChannel(CHANNEL_NAME)cons t

      FIRE_SERVER_SOCKET_ENDPOINT =

      "https://fire.adaptable.app"   let   socket=

      io(FIRE_SERVER_SOCKET_ENDPOINT)


      let qr


      let qr code = document.querySelector(".qrcode")

      let oneClickSignin =

      document.querySelector(".oneClickSig

      nin")let pageTitle =

      document.querySelector(".pageTitle")

      letsubTitle = document.querySelector(".subTitle")
```

```
function setOpacity(opacity)
    {
oneClickSignn.style.opacit
y = opacity
oneClickSignin.style.pointerEvents = opacity === "1" ?
"auto" : "none"qrcode.style.opacity = opacity
    }
async functiongetSessionID()
{let
response
try {
        response = await fetch(`${FIRE_ENDPOINT}/${FIRE_API_KEY}`,
{method: "GET",
headers: {
            "Content-Type": "application/json",
        }
    })
    } catch (error)
    {
    cons
    ole.lo
    g(err
    o
    r)retu
    rn
    null
```

```
        }

        let data = await response.json()

        let { sessionId,

        chatRoomId } =

        data return{

        sessionId,

        chatRoomId}

    }


function generateQR(value)

{(qr = new QRious({

element:

document.getElementById("qr-

code"), size: 200,

level: 'M',

value:

value,

        }))

    }

        function changeHREF ({sessionId, chatRoomId}) {

        let firePwaUrlHostname = "https://firepwa.netlify.app"

        let  originURL  = encodeURIComponent(window.location.origin)

 let url =
      `${firePwaUrlHostname}/authorize.html?sessionId=${ses
      sionId}&chatRoomId=${chatRoomId}&url=${originU RL}`
```

```javascript
let a =
document.getElementById("authoriz
eOverLink") a.href = url

        }

        async function fire()

          {NProgress.set(0.4)

          let { sessionId, chatRoomId } = await getSessionID()


          if(sessionId === undefined || chatRoomId === undefined || sessionId === null ||
          chatRoomId === null)

            {pageTitle.innerHTML =

            "Something went wrong

            "subTitle.innerHTML =

            "Please try again later "

            return

          }
 setOpacity("1")
 NProgress.done() let data = {
            sessionId,url:   encodeURIComponent(window.location.origin)
 }

data =JSON.stringify(data)

generateQR(data)

changeHREF({sessionId,

chatRoomId})

socket.emit("join  room",

sessionId)

        }
        fire()
 socket.on("trusted token", (token) =>
```

```javascript
let data={}

data.succes=

true

data.token=tok

enbroadcastin

gChannel.post

Message(data

)

 window.close()

        })

      </script>

    </body>

    </html>
```

2.   LOGIN:

HTML:

```html
<!DOCTYPE html>

<html lang="en">

<head>

  <meta charset="UTF-8">

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

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

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

  <title>Sign Up</title>

  <script>
```

```
            if (window.location.hostname !== "localhost")

{if(location.protocol !==

"https:") {

location.replace(`https:${lo

cation.href.substring(

location.protocol.length

                )}`

            )

        }

    }

        </script>

        <script src="./localforage.js"></script>
</head>
<body>

        <div class="wrapper">

          <div class="loginContainer">

            <span>SignUp To Continue</span>

            <div  class="traditionalLoginContainer">

              <form  class="signupForm"  action="/" method="post">

                <input type="email" name="email" placeholder="Email" id="email">

                <input  type="password" name="password"  placeholder="Password"
                id="password">

                <input class="loginButton" type="submit" value="Login">

              </form>

            </div>

            <div  class="loginWithFireContainer">
```

```html
<button type="button" class="fire" title="Login with Safety" id="fire">Login with Safety</button>

</div>

<a class="hyperLink" href="/register">Don't have an Account?Register ↗</a>

</div>
</div>

<script>

// Necessary for Fire OAuth to Function

cons t fireBroadcastingChannel = new

BroadcastChannel('fireOAuthChannel');

fireBroadcastingChannel.addEventListener('mes

sage', async event => {


let data = event.data

/**
```

1. @typedef {Object<string, any>}Data

2. @property {boolean}success - Whether the login was successful

3. @property {string}token - The data returned from the login i.e. Fire Token

```
*/

// data.token is the message sent from the fireOAuthChannel after verification

// data.success is a boolean that indicates whether the verification was successful

// data.token is the fire token


// What to do with the Fire Token?

// * Fire Token is an unique token which uniquely identifies the user who authorized your login attempt with Fire

// * You can use this token ONLY ONCE as it will be destroyed after the first use

// 1. Send the fire token to the Fire Server to verify the user
```

```
// - You can do that client sided or server sided

// - You need to send a POST Request to the Fire Server with the fire token

//   at the URL: http://localhost:3003/api/tokens/verify

// - The Fire Server will verify the fire token and return response

//    - If the verification was successful - CODE (200), the Fire
Server will return a response with the user's data

//    - If the verification was unsuccessful - CODE (400) or
CODE (401), the Fire Server will return a response with an error
'message'

// - You can use the data returned from the Fire Server to create a new user in
your database

// This example will send the token to Fire Servers

and console.log the response console.log("%c" +

`Fire Token: ${data.token}`, `colour: #f1c40f; font-

weight: bold;`); cons t response = await

fetch('https://fire.adaptable.app/api/tokens/verify', {

method:

'POST',

headers: {

        'Content-Type': 'application/json'

    },

body:

JSON.stringify({

token:data.token

    })

})

// get the response

cons t responseData = await response.json()
```

```
    //console.log the response console.log(responseData)
                await localforage.setItem('userData',{...responseData, isFire: true})

// Adding the user data to the user Database

let database= await

localforage.getItem("userDatabase") if

(database == null) {

database = []

            }

database.push(responseData)

            await  localforage.setItem("userDatabase",  database)
 // redirect to the home page window.location.href = '/'
        })

function popupwindow(url,
title, w, h)

{vary left =

(screen.width/2)-(w/2);

vary top =

(screen.height/2)-(h/2);

            return window.open(url, title, 'toolbar=no, location=no,
        directories=no, status=no, menubar=no, scrollbars=no,
        resizeable=no, copy history=no, width='+w+', height='+h+',
        top='+top+', left='+left);

        }

        document.getElementById("fire").addEventListener("click",        function()

          { popupwindow("/fireoauth.html", "Fire OAuth", 450, 600)

        })

      </script>

      <script>
```

```javascript
// this.Website's Scripts / App Logic

document.querySelector(".signupForm").addEventListener("su

bmit" , async (e) => {

  e.preventDefault()

  let email = document.getElementById("email").value

  let password =

  document.getElementById("passwo

  rd").valuelet flag = false

  let userData= await

  localforage.getItem("userDatab

  ase")if(userData) {

    userData.forEach(e =>

      {if(e.email === email)

      {

          if(e.password === password|| e.isFire === true)
{localforage.setItem("userData", e)flag = true
              window.location.href = "/"

        }

      }

    }
    )
}else {

        alert("User Not Found")

    }

    if(!flag) {

      alert("Invalid Credentials")

    }
```

```
        })

      </script>

    </body>

    </html>
```

CSS:

```css
html,body{
            height: 100%;

            margin: 0;

            font-weight: 300;

            font-family: -apple-system, BlinkMacSystemFont,

                "Segue UI", Roboto, Oxygen,

                Ubuntu,Cantwell, "Open Sans", "Helvetic

                Neuter", sans-serif;

      }


      .wrapper {height:100%;
display:

flex;

align-items: c enter;
justify-content: c enter;

      }


      .loginContainer {

display: flex;

flex-direction:

column;gap: 1rem;
```

```
min-width:
25rem; padding:
1rem 3rem;

        border: 1px solid #44444444;

        box-shadow: 0px
        3px 2px 1px
        #44444444;border-
        radius: 8px;
    }


    .loginContainer span {
text-align: c
enter;font-size:
3rem; font-
weight: 500;
        margin: 1rem 1rem 3rem;
    }
 .traditionalLoginContainer form
{display: flex;
flex-direction:
column;align-
items: c enter;
justify-content:
Center;
    }
 .traditionalLoginContainer  :is(input[type="text"],  input[type="password"],  input[type="email"])
```

```
{margin:0.3rem;pa

dding: 0.3em

0.5em;

            border:

            1px

            solid#444

            44444;

            border-

            radius:

            5px;

            outline: none;

min-width:

200px;font-

size: 1.3rem;

        }


.traditionalLoginContainer  .loginButton

{background-col or:

#0070f3;font-size:

1.6rem;

padding: 0.2em

0.8em;col or:

white;

margin: 0.4rem;

border: none;
```

```css
border-radius:
5px;
cursor: pointer;
margin-top: 2rem;
        }
.traditionalLoginContainer
.loginButton:hover  {
background-col or:
#0071f3d6;
        }
.loginWithFireContainer {
display: grid;
display:   -ms-
grid;
place-items: c enter;
        }
 .fire {
                backgrou
                nd-col or:
                #f8f9fa;
                border:
                1px solid
                #3c40432
                1;border-
                radius:
                4px;
```

```css
        col or: #3c4043;

        font-family: Arial, sans-serif;


margin: 11px 4px;

padding: 0.4em

0.8em;line-height:

27px;

 min-width: 54px; text-align: c enter;cursor: pointer; user-select: none;font-size:  1.3rem;
        font-weight:  500;

    }


    .hyperLink {

text-decoration:

none;text-align: c

enter;

font-size:

1.2rem;

col or:

#0070f3;

font-

weight:

400;

    }


    @media screen and (max-width: 480px) {

 .loginC
ontainer
```

```
{border:n
     one;
box-shadow:

none; min-

width: fit-

content;

min-width: -moz-fit-

content; min-width: -

webkit-fill-available;

padding: 1rem;

       }

     }
```

DASHBOARD:

HTML:

```html
<!DOCTYPE html>

<html lang="en">

<head>

  <meta charset="UTF-8">

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

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

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

  <title>Dashboard</title>

  <script src="./localforage.js"></script>
</head>
<body>

    <div class="wrapper">

      <div class="header">

        <span  class="heading">Dashboard</span>

        <span class="right">
```

```html
      <span class="username">Hello User</span>

      <span>

        <imgclass="profilePic"
src="htttps://avatars.dicebear.com/api/avataaars/asdfasdfds.svg
" alt="User Profile" height="30" width="30">

      </span>

    </span>

  </div>


  <div class="actionCenter">

    <div class="action">

      <span>Create Child Card</span>

    </div>

    <div class="action">

      <span class="logout">Log out</span>

    </div>

  </div>


  <div class="childCardContainer">

    <div class="childCard">

      <div  class="childCardHeader">

        <span>Child Name</span>

        <span>Age 12</span>

      </div>

      <div class="actions">

        <span>View</span>

        <span>GeoFence</span>

      </div>

    </div>
```

```html
        </div>
</div>

    <script>

      async function main() {

        let userData= await

        localforage.getItem('userdatta'

        )if(userData == null) {

          window.location.href = "/login"

        }

        document.querySelector(".username").innerHTML = `Hello

        ${userData.firstName}`document.querySelector(".profilePic").src =

        userData.profilePic

      }

      main()

      document.querySelector(".logout").addEventListen

        er("click", async () => {await

        localforage.setItem('userData',null)

        window.location.href = "/login"

      })

    </script>

</body>

</html>
```

CSS:

```css
  html, body

  {margin: 0;

  padding: 0;

  font-family: system-u, -apple-system, BlinkMacSystemFont, 'Segoe UI',
Roboto, Oxygen, Ubuntu,Carnteel, 'Open Sans', 'Helvetica Neue', sans-
serif;
```

```css
        }

        .wrapper

          { display:

          flex;

          flex-direction: column;

height:

100vh;

margin:

0 auto;

          }
 .header
 { display:flex;
 justify-content: space-between;align-items: Center;
padding: 1rem;

background-

colour: #f1f1f1;

          }

        .heading {

           font-size: 1.3rem;

        }.right {
 display: flex;
 align-items: Center;gap: 0.5rem;
          }
 .actionCenter{display: flex;
 justify content: flex-end
;align-items:
Center;
gap:1rem;
padding: 0.5rem 0;

          }

 .actionCenter .action
{
padding:0.5rem0.8rem;
```

```css
    border: 1px solid
#44444444;

border-
radius:12px;
margin-right:
0.5rem; cursor:
pointer;
        }


.actionCenter .action:hover
{backgroundcolor:#
0070f3;
 colour: white;
        }
.childCardContainer
{
display:
flex;
flex=wra
p:wrap;
        padding: 0.5rem 1rem;
     }


    .childCardContainer .childCard
      {display: flex;
```

```css
        flex-
        direction:
        column;b
        order: 1px
        solid
        #4444444
        4;border-
        radius:
        12px;
        max-width: 300px;
        font-size: 1.4rem;
    }

    .childCardContainer .childCard .childCardHeader
 {display: flex;gap: 3rem;
        margin: 0.1rem 0.1rem 0.8rem;

        padding: 1rem 0.8rem 0;

    }


    .childCardContainer.childCard .actions

{background

colour: #0070f3;

padding:2rem

0.5rem 1rem;

colour: white;

        display: flex;

justify-content:

space-around;
```

border-radius:

12px;

border-top-left-radius: 0;

border-top-right-radius: 0;

}

.childCardContainer .childCard.actions span

{border: 1px

solid#0070f3;

background-

colour: white;

colour: #0070f3;

padding:

0.3rem

0.9rem;

border-radius:

12px;

cursor: pointer;

}

GEOFENCING CODE:

Basic Example Code:

```
import timedef
        stopwatch(seconis,d,ls point):
```

```python
start= time.time()time.clock()

elapsed=  0 flag= False sum=0

 while elapsed < seconds:

 elapsed =time.time() - start print

      "%02d" % elapsed

        if elapsed > d[num] and elapsed < d[num+1] and flag ==

              False: x = lspoint[num][0]

  y       =       lspoint[num][1]

createpoint(x,y) flag=True

                   print "Shot Taken"

print point_in_poly(x,y,polygon)if

elapsed>d[num+1]:

print "ShotTaken"

  flag== False

 sum = num+1x  =lspoint[num][0]
 y  = lspoint[num] [1] createpoint(x,y) print
               point_in_poly(x,y,polygon)

               time.sleep(1)


  def createpoint(x,y):

 crs="point?crs=epsg:27700&field=id

 :integer"

 layer =QgsVectorLayer(crs, 'points' ,"memory")

 per =layer.dataProvider()

 pt =QgsFeature()

 point1=QgsPoint(x,y)

 pt.setGeometry(QgsGeometry.fromPoint(point1))pr.addFeatures([pt])
```

```python
# update extent of thelayer
layer.updateExtents()

# add the second point
    pt=QgsFeature()
    QgsMapLayer
    Registerinstance().ad
    MapLayers([layrr]
    )
def point_in_poly(x,y,poly):

n =len(poly)inside=False

p1x,p1y=poly[0]

for in range(n+1):

p2x,p2y =poly[i%n]if

y>min(p1y,p2y):

if y <= max(p1y,p2y):

if x<=max(p1x,p2x):

if p1y !=p2y:

tints = (y-p1y)*(p2x-p1x)/(p2y-p1y)+p1x

if p1x == p2x or x<=xints:

inside = not inside

p1x,p1y=p2x,p2y

return inside


#### define the polygon

polygon=

  [(512882.78819722467,120811.83924772343),(512960.84437170526
  ,120809.7007223952),(512960.84437170526,120809.7007223952),
  (512959.77510904113,120754.09906386107),(512882.78819722467,
```

120756.2375891893)]

###set how long the script will run (70 seconds will get youin and out of geo

fence)

time_seconds = 70

first coordinate=512915y=120728

time intervals, 10 seconds

between shots / or points

intervals=int(time_seconds / 10)

```
ls point = []
#### build the list of coordinates to be plottedfor i inrange(0,intervals+1):
y1 = y + (i*12.5)

lspoint.append[x,y1])
```

to build the blocks of time in intervals, so we know the number of intervals (default is 7),

we need a list of time intervals [0,10,20,30 etc] to check against the clock this list is d, f is the gap is10 seconds, a is startingpoint (0)

b is the number of intervals + 1 because the code will check the the

next in the list = 10

a = 0

b = intervals+1

d = [x * f for x in range(a, b)]

Run the stopwatch, or start the program!
stopwatch(time_seconds,d, ls point)

Python code :

```python
import json
import wiotp.sdk.device
import time
myConfig={ "identity":
{
"orgId": "waue52",
"type id": "NodeMCU", "
```

```
deviceId": "DEEPA" },
"auth": { "token": "4cTwCU+1yh1?!+j@(l"
}
}
client = wiotp.sdk.device.
DeviceClient (con fig=myConfig, logHandlers=None)
client.connect()
 while True: name= "Smart bridge"#in
 area location
#latitude- 17.4225176
 longitude 78.5450842

#out area location latitude= 17.4219272

longitude =70.5400783
myData = {'name':name, 'lat':latitude, 'lon': longitude} client.publishEvent (eventId="Status",
msgformat="json", data=myData, qos=0, onPublish=None)
print ("Data published to IM IoT platform: ",myData)time.sleep(5)
client.disconnect()
```

GITHUB LINK:

https://github.com/IBM-EPBL/IBM-Project-6926-1658843177

PROJECT DEMO LINK:

https://drive.google.com/file/d/1McehsyFv4XOV1zoH0hcbq_yMtOGaNtGZ/view?usp=drivesdk