Project Title: Containment Zone Alerting ApplicationTeam ID: PNT2022TMID00768

COLLEGE NAME: PANIMALAR ENGINEERING COLLEGE

Team Members:

Vishwa S (Team Leader)

B Harsha Vardhan

Srivas C

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PROJECT REPORT

1. INTRODUCTION:

1.1 Project Overview

The World Health Organization has declared the outbreak of the novel coronavirus, Covid-19 as pandemic across the world. With its alarming surge of affected cases throughout the world. lockdown, and awareness (social distancing, use of masks etc.) among people are found to be the only means for restricting the community transmission. In a densely populated country like india, it is very difficult to prevent the community transmission even during lockdown without social awareness and precautionary measures taken by the people. Recently, several containment zones had been identified throughout the country and divided into red, orange and green zones, respectively. The red zones indicated the infection hotspots, orange zones denotes some infection and green zones indicate an area with no infection. This paper mainly focuses on development of an android application which can inform people of the Covid-19 containment zones and prevent trespassing into these zones. This android application updates the locations of the areas in a google map which are identified to be the containment zones. The application also notifies the users if they have entered a containment zone and uploads the user's IMEI number to the online database. To achieve all these functionalities, many tools, and APIs from google like fire base and geo fencing API are used in these application. Therefore, this application can be used as a tool for creating further social awareness about the arising need of precautionary measures to be taken by the people of India.

1.2 Purpose

currently there are several research works undergoing to prevent Covid-19. In this paper, we

mainly focus on developing an android based application to identify the Covid-19 containment zone in india. We have used geo fencing and fire base APIs (application program interface) from google as the base for development of this application. Geo fencing is a tool from Android which is used to create virtual boundaries of fences around geographical location. The developers can add geo fences at different locations by providing the latitudes and longitudes along with radius to highlight the proximity of the location. Geo fences technology senses the user's current location and checks whether that location belong to the set of pre-identified geofences. After creating the geo fences, each geo fence has the permission to get information from the location services of google about entering, dwelling and exit events triggered by the users of the application when they enter or exit the geo fence. Upon receiving a trigger event, the geo fences can be program to notify the user about the information of the location they have entered or exited. These geo fences can be useful in preventing its uses from trespassing inside the targeted locations. Firebase is a real time database from google. It is used for development of applications in google cloud platform. Data is stored directly to the fire base and pulled rightout of the fire base; hence it is known as backend-as-a-service (BaaS). The database provides data to uses on the basics of the user demand. When an application is to fire base, they are not connected through normal http(Hyper text transfer protocol) but are connected by the use of websocket. The websocket transfers data at the higher speed than http. The fire base transfers new data to the user as soon as it is updated. When a user's client saves the changes occurred in the database then all connected client receives the updated data almost instantly in this research work we use both geo fencing and fire base technology in our proposed android application to effectively identified and provide alarm to the ones who trespassed the containment zones of Covid-19. We have tested our application with different user in different locations across west bengal and it works efficiently and is able to attain our target.

2. LITERATURE SURVEY:

2.1 Existing Problem:

The Covid-19 pandemic is a global issue, the European Union presented a solution for communication between national applications in the fight against the coronavirus. In some countries, a great number of applications has been developed such as in India, for instance, where there have been over 40 applications registered so far. Some of these applications are simple applications used for getting informed about the number of infected persons in a certain area, where as other applications possess a great number of features.

i) Bluetooth Connectivity

Bluetooth signals work within a range of 3 meters (nearly 10-feet) which can also turn out as one of the limitations Aarogya app.lt's necessary to have a Bluetooth enabled phone to nearby to detect a possible infected case around you. The technology can yield overwhelming results given that different Bluethooth versions have a wider

range.

Close contact with a COVID-19 patient can be detected within a range of 2 meters(6-feet). The advanced versions of Bluetooth in the latest smartphone devices vary from device to device. As the threshold range for a close contact is 2 meters, a Bluetooth connection is capable of identifying a contact within a wider range. This may create false results, and lead to confusion and distress among users.

ii) Trouble in device detection

At times, most smartphones are difficult to detect other phones with bluetooth visibility settings hidden. If an infected person has set his/her phone's visibility hidden, your device may not be able to help. Also there are also concerns whether this app works effectively in a interoperable environment or not. Smartphone owners may have difficult spotting a potential case owning an iPhone.

iii) GPS Range

GPS typically generates data depending on the accuracy of a location. Maps and location-targeted apps use geographic data that uses landmarks. Even you are located 5 or 6 meters away from anyone, the GPS may put you in close proximity to others. GPS -based data is not 100 % sure to rely on which raises alarm about its use finding the patients spot-on.

2.2 References

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2.3 Problem Statement Definition

A correlation study to assess the knowledge and self-expressed stigma regarding COVID-19 outbreak among adults at selected society of Pune city.

INTRODUCATION

Corona viruses are zoonotic. This means they first develop in animals before developing in humans. For the virus to pass from animal to humans, a person has to come into close contact with an animal that carries the infection. Once the virus develops in people, corona viruses can be spread from person to person through respiratory droplets. This is a technical name for the wet stuff that moves through the air when you cough or sneeze. The viral material hangs out in these droplets and can be breathed into the respiratory tract (your windpipe and lungs), where the virus can then lead to an infection.

1. Coronavirus disease (COVID-19) is an infectious disease caused by a newly discovered coronavirus. The virus that causes COVID-19 is mainly transmitted through droplets generated when an infected person coughs, sneezes, or exhales. These droplets are too heavy to hang in the air, and quickly fall on floors or surfaces. People can be infected by breathing in the virus if you are within close proximity of someone who has COVID-19, or by touching a contaminated surface and then your eyes, nose or mouth. Most people who fall sick with COVID-19 will experience mild to moderate

symptoms and recover without special treatment.

2. Common symptoms:
Fever.
Tiredness.
Dry cough.
Some people may experience:
Aches and pains.
Nasal congestion.
Runny nose.
Sore throat.
Diarrhea.
On average it takes 5–6 days from when someone is infected with the virus for symptoms to show, however it can take up to 14 days. Older people and people with certain health conditions have a higher risk for severe complications if they contract the virus. These health conditions include.
lung conditions, such as COPD and asthma

certain heart conditions

immune system conditions, such as HIV

cancer that requires treatment

severe obesity

other health conditions, if not well-controlled, such as diabetes, kidney disease, or liver disease

Pregnant women have a higher risk of complications from other viral infections, but it's not yet known if this is the case for COVID-19.

COVID-19 can be diagnosed similarly to other conditions caused by viral infections:using a blood, saliva, or tissue sample.

However, most tests use a cotton swab to retrieve a sample from the inside nostrils. There's currently no treatment specifically approved for COVID-19, and no cure for an

infection, although treatments and vaccines are currently under study.

Instead, treatment focuses on managing symptoms as the virus runs its course. Corona viruses like SARS and MERS are also treated by managing symptoms. In somecases, experimental treatments are tested to see how effective they are.

Examples of therapies used for these illnesses include:

antiviral or retro-viral medications

breathing support, such as mechanical ventilation

steroids to reduce lung swelling

blood plasma transfusions

3. To prevent the spread of COVID-19:

Avoid large events and mass gatherings.

Avoid close contact (within about 6 feet, or 2 meters) with anyone who is sick or hassymptoms.

Stay home as much as possible and keep distance between yourself and others (within about 6 feet, or 2 meters) if COVID-19 is spreading in your community, especially if you have a higher risk of serious illness. Keep in mind some people may have COVID-19 and spread it to others, even if they don't have symptoms or don't know they have COVID-19.

Wash your hands often with soap and water for at least 20 seconds, or use an alcohol-based hand sanitizer that contains at least 60% alcohol.

Cover your face with a cloth face covering in public spaces, such as the grocery store, where it's difficult to avoid close contact with others, especially if you're in an area with ongoing community spread. Only use non medical cloth masks — surgical masks and N95 respirators should be reserved for health care providers.

Cover your mouth and nose with your elbow or a tissue when you cough or sneeze. Throw away the used tissue.

Avoid touching your eyes, nose and mouth.

Avoid sharing dishes, glasses, bedding and other household items if you're sick.

Clean and disinfect high-touch surfaces daily.

Stay home from work, school and public areas if you're sick, unless you're going to get

medical care. Avoid taking public transportation if you're sick.

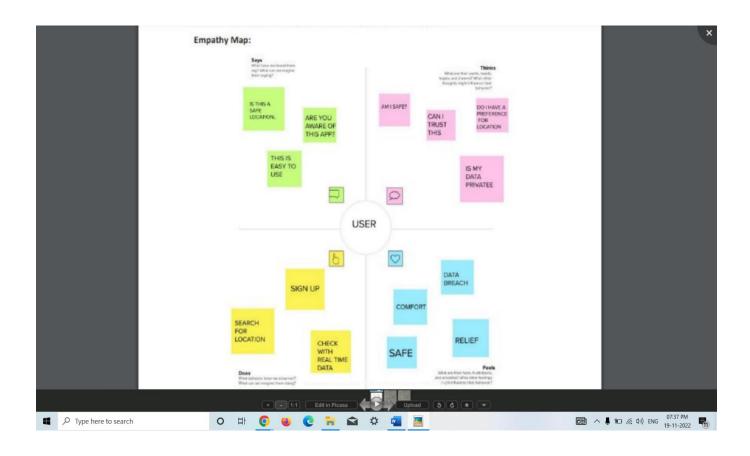
OBJECTIVES

- 1. To assess the knowledge regarding COVID-19 Outbreak among adults
- 2. study to assess self-expressed stigma regarding COVID-19 Outbreak among adults
- 3. To assess the correlation between knowledge and self-expressed stigma regarding COVID-19 Outbreak among adults
- 4. To associate the major findings of knowledge regarding COVID-19 Outbreak with selected demographic
- 5. To associate the major findings of self-expressed stigma regarding COVID-19 Outbreak with selected demographic.

3. IDEATION & PROPOSED SOLUTION

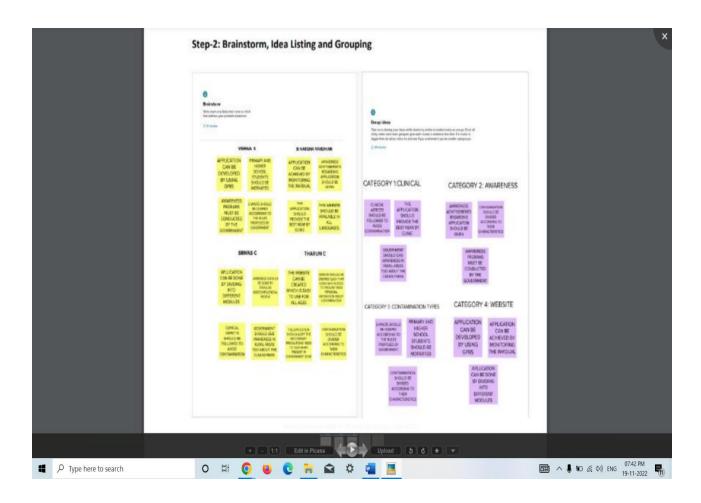
3.1 Empathy map canvas

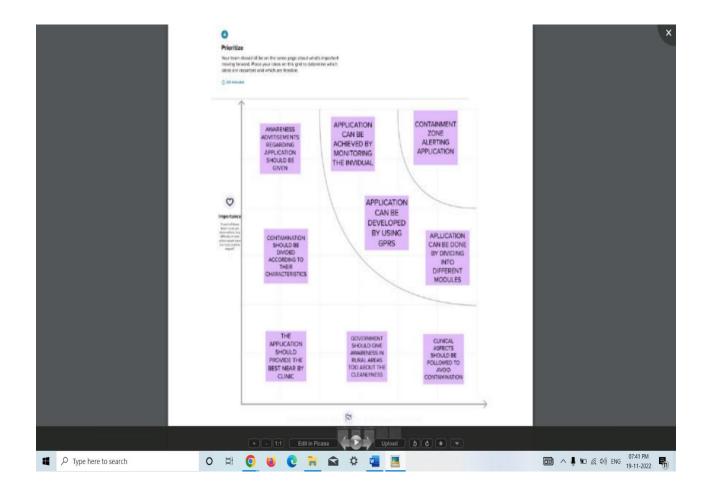
An empathy map is a collaborative tool teams can use to gain a deeper insight into their customers. Much like a user persona, an empathy map can represent a group of users, such as a customer segment. The empathy map was originally created by Dave Gray and has gained much popularity within the agile community.



3.2 Ideation&Brainstorming

Ideation refers to the whole creative process of coming up with and communicating new ideas. It can take many different forms, from coming up with a totally new idea to combining multiple existing ideas to create a new process or organizational system. Ideation is similar to a practice known as brainstorming.



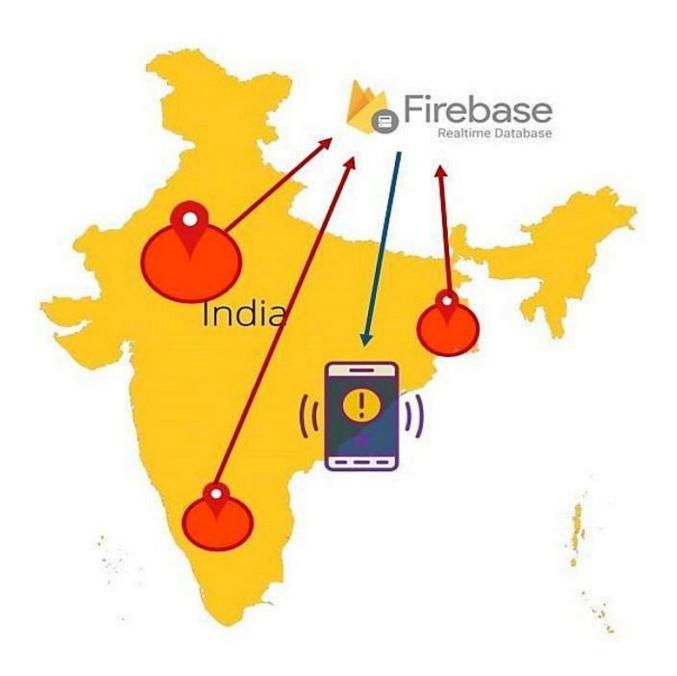


we focus on developing a mobile based application to provide information regarding the Covid-19 containment zones. The application further tracks the user's location and provides notification alert if the user has entered a containment zone. The application also provides daily Covid-19 case statistics to the users to keep them updated. The application is developed on Android SDK and uses Firebase Cloud Fire store to store the location data. Android's geo fencing client is used to create geo fences around the containment zones and notification manager is used to provide notifications. The application also uses RESTful web services to show the Covid-19 case.

3.3. Proposed solution

Proposed Solution means the technical solution to be provided by the Implementation agency in response to the requirements and the objectives of the Project. Sample 1Sample 2. Proposed Solution means the Proposed System with modifications that meet the Agency's requirements as set forth in this RFP.

The Android application shows the location of the containment zones to the users. It also notifies the user when he or she trespasses the boundary of a containment zone or stays in the containment zones.



Project Design Phase-I Proposed Solution Template

Date	19 September 2022		
Team ID	PNT2022TMID00768		
Project Name	Project-Containment zone alerting application		
Maximum Marks	2 Marks		

Proposed Solution Template:

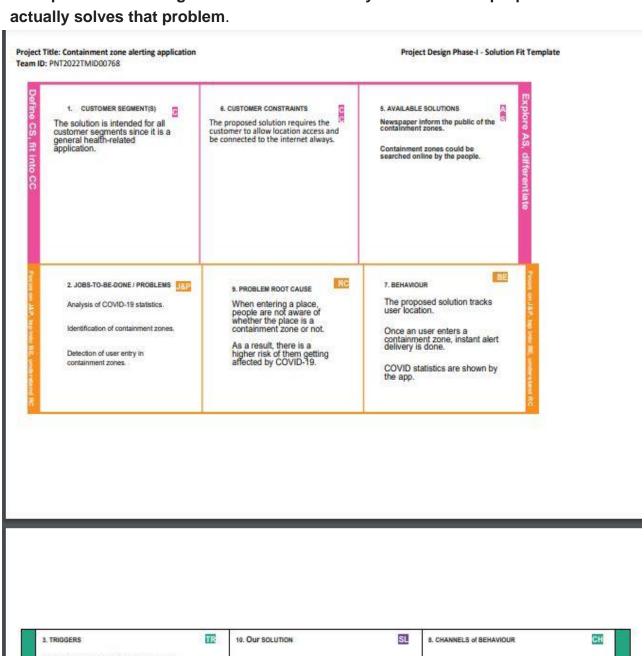
Project team shall fill the following information in proposed solution template.

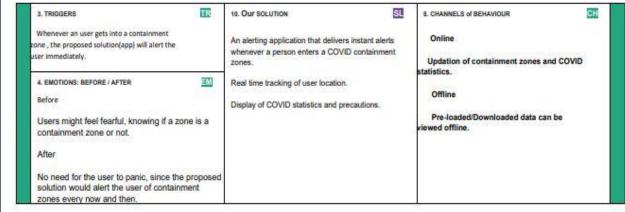
S.No.	Parameter	Description				
1.	Problem Statement (Problem to be solved)	People travel to different places unaware of the fact that it is a containment zone and hence don't take necessary precautions. As a result, the people getting inside a containment zone are at a higher risk of getting affected by the disease.				
2.	Idea / Solution description	An Alerting application that delivers instant alerts whenever a person enters a Containment Zone. This application is intended to provide information about containment zones in a particular region by alerting people, through continuous monitoring of an individual's location				
3.	Navelty / Uniqueness	The proposed solution makes use of a cloud store to update and store geolocations of containment zones in real time. For containment zones, geofences are created with the help of the Location Based services of Android				
4.	Social Impact / Customer Satisfaction	As a general healthcare application, the social impact of the proposed solution is huge.				
5.	Business Model (Revenue Model)	Since the proposed solution is a general healthcare app, it does not have a business motive. However, a subscription based health tracking option could be added in the future				

6. Scalability of the solution	Although the application is intended for COVID-19 as of now, it can be extended and made use of in the containment and prevention of any disease in the future.
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3.4. Problem solution fit

Problem-solution fit is a term used to describe the point validating that the base problem resulting in a business idea really exists and the proposed solution actually solves that problem.





Covid-19 Tracker App is an Android based application. user can download their application in your mobile. As everyone are aware the world is facing one of the unconditional outbreaks. The outburst of Covid-19 during this time period is to design and develop Covid-19 Tracker Android App using REST API which will track the Global Stats and gives the probability of total number of active cases, recovered cases and death rates in all.

4. REQUIREMENT ANALYSIS

4.1 Functional requirement

In software engineering and systems engineering, a functional requirement **defines** a function of a system or its component, where a function is described as a specification of behavior between inputs and outputs.

USER-Alert when user enters containment zone MOBILE APP- Interacts with the user & the server USER LOCATION

FLASK WEB APP-Backend of the app

DOCKER CONTAINER-Handles API requests, serves data by fetching from DB SENDGRID-Sends Email Notifications

IBM DB2-Stores User Data &Details of Containment Zones

NewsAPI-Scraps COVID news from websites

Admin - update the DB with containment zones & maintains the app

4.2 Non-Functional requirements

Nonfunctional Requirements (NFRs) define system attributes such as security, reliability, performance, maintainability, scalability, and usability. They serve as constraints or restrictions on the design of the system across the different backlogs. Efficiency: Specifies how well the software utilizes resources (CPU cycles, disk space,memory).

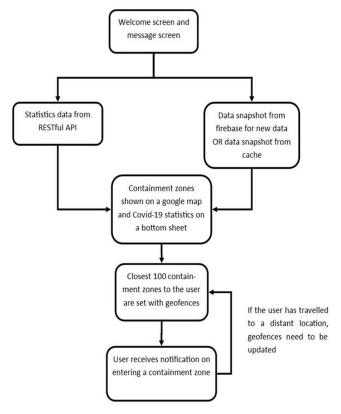
Fleibility: increase or extend the functionality of the software after it is deployed, that should be planned from the beginning; it influences choices made during the design, development, testing and deployment of the system.

Portability: Portability specifies the ease with which the software can be installed on all necessary platforms.

5.PROJECT DESIGN

5.1 Data flow diagrams

A data flow diagram shows the way information flows through a process or system. It includes **data inputs and outputs**, **data stores**, **and the various sub processes the data moves through**. DFDs are built using standardized symbols and notation to describe various entities and their relationships.



5.2 Solution & Technical architecture

A solution architecture (SA) is **an architectural description of a specific solution**. SAs combine guidance from different enterprise architecture viewpoints (business, information and technical), as well as from the enterprise solution architecture (ESA).

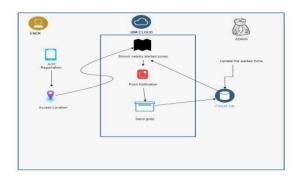
Technical Architecture (TA) is a form of IT architecture that is used to design computer systems. It involves the development of a technical blueprint with regard to the arrangement, interaction, and interdependence of all elements so that system-relevant requirements are met.

Project Design Phase-II Technology Stack (Architecture & Stack)

Date	03 October 2022
Team ID	PNT2022TMID00768
Project Name	Project - Containment Zone Alerting Application
Maximum Marks	4 Marks

Technical Architecture:

The Deliverable shall include the architectural diagram as below and the information as per the table 1 & table 2



Guidelines:

- Include all the processes (As an application logic / Technology Block)
- 2. Provide infrastructural demarcation (Local / Cloud)
- 3. Indicate external interfaces (third party API's etc.)
- 4. Indicate Data Storage components / services
- 5. Indicate interface to machine learning models (if applicable)

5.3 User Stories

A user story is an informal, general explanation of a software feature written from the perspective of the end user or customer. The purpose of a user story is to articulate how a piece of work will deliver a particular value back to the customer.

User Stories

User Type	Functional Requirement (Epic)	User Story Number	User Story / Task	Acceptance criteria	Priority	Release
Customer	Registration	USN-1	As a user, I can register for the application by entering my email, password.	I can access my account	High	Sprint-1
		USN-2	As a user, I will receive confirmation email once I have registered for the application.	I can receive confirmation email	High	Sprint-1
	Login	USN-3	As a user, I can log into the application by entering email & password.	I can access my account with Login	High	Sprint-2
		USN-4	As a user, I can give forgot password and verify through my email.	I can login even when password is unknown	Medium	Sprint-2
	Input	USN-5	As a user, I can give my present location.	I can enter my location.	High	Sprint-3
		USN-6	As a user, I can update my location in google map.	I can set my location.	High	Sprint-3
		USN-7	As a user, I can enter my loction.	I can input location.	Low	Sprint-5
	Dashboard	USN-8	As a user, once I logged in Graphical representation of my location is achieved.	I can view my updated dashboard	Medium	Sprint-4
		USN-9	As a user, I can track my location daily, monthly.	I can track my location.	High	Sprint-4
		USN-10	As a user, I can revisit my location on a specific day.	I can revisit my location.	Low	Sprint-5
	Notifications	USN-11	As a user, I can receive alert messages from containment zones.	I can be notified.	High	Sprint-3
		USN-12	As a user, I can receive suggestion notifications.	I can be notified.	Medium	Sprint-4
Customer Care Executive	Customer Care	USN-13	As an executive, I can solve the queries and issues regarding the application	I can give 24/7 support	Low	Sprint-5
Administrator	Application	USN-14	As an administrator, I can upgrade or update the application.	I can fix the bugs and improve the application.	High	Sprint-5

6. PROJECT DESIGN

6.1 Sprint planning & Estimation

Sprint planning is **an event in scrum that kicks off the sprint**. The purpose of sprint planning is to define what can be delivered in the sprint and how that work will be achieved. Sprint planning is done in collaboration with the whole scrum team.

Estimation is done by the entire team during Sprint Planning Meeting. The objective of the Estimation would be to consider the User Stories for the Sprint by Priority and by the Ability of the team to deliver during the Time Box of the Sprint.

6.2 Sprint delivery schedule

Date	25 October 2022
Team ID	PNT2022TMID00768
Project Name	Project - CONTAINMENT ZONE ALERTING APPLICATION
Maximum Marks	8 Marks

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

Use the below template to create product backlog and sprint schedule

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Registration	USN-1	USER: I can register for the application by entering my email, password, and confirming my password.	3	High	B Harsha Vardhan Srivas C Vishwa S Tharun C
		USN-2	USER: I will receive confirmation email once I have registered for the application	2	High	B Harsha Vardhan Srivas C Vishwa S Tharun C
	Login	USN-3	USER: I can register for the application through Facebook	3	High	B Harsha Vardhan Srivas C Vishwa S Tharun C

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-2	Dashboard	USN-4	USER: I can register for the application through Gmail	5	High	B Harsha Vardhan Srivas C Vishwa S Tharun C
		USN-5	USER: I can log into the application by entering email & password	5	High	B Harsha Vardhan Srivas C Vishwa S Tharun C
	Service	USN-6	ADMIN: I need to update the containment zones.	5	High	B Harsha Vardhan Srivas C Vishwa S Tharun C

Sprint	Functional Requirement (Epic)	User Story Number	User Story/Task	Story Points	Priority	Team Members
Sprint-3	Service	USN -7	ADMIN: I need to differentiate the containment zone based on the intensity of infection.	3	Low	B Harsha Vardhan Srivas C Vishwa S Tharun C
		USN-8	ADMIN: I need to provide precautionary measures When they travel.	3	Medium	B Harsha Vardhan Srivas C Vishwa S Tharun C
		USN-9	ADMIN: I need to provide the information about the nearby hospitals.	3	Low	B Harsha Vardhan Srivas C Vishwa S Tharun C

Sprint	Functional Requirement (Epic)	User Story Number	User Story/Task	Story Points	Priority	Team Members
SPRINT-4	Service	USN -10	ADMIN: I need to alert the user when they enter the containment zone through email or SMS.	5	High	B Harsha Vardhan Srivas C Vishwa S Tharun C
		USN -11	ADMIN: I need to provide medical recommendations by collaborating with hospitals.	3	Medium	B Harsha Vardhan Srivas C Vishwa S Tharun C
	Data Collection	USN -12	ADMIN: I need to store user details on the cloud.	5	High	B Harsha Vardhan Srivas C Vishwa S Tharun C
		USN -13	ADMIN: I need to collect details about covid-19 cases from verified sources.	5	High	B Harsha Vardhan Srivas C Vishwa S Tharun C

Project Tracker, Velocity & Burndown 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	30 Oct 2022	20	31 Oct 2022
Sprint-2	20	6 Days	31 Oct 2022	05 Nov 2022	20	06 Nov 2022
Sprint-3	20	6 Days	06 Nov 2022	12 Nov 2022	20	13 Nov 2022
Sprint-4	20	6 Days	13 Nov 2022	19 Nov 2022	20	19 Nov 2022

Velocity:

We have a 6-day sprint duration, and the velocity of the team is 20 (points per sprint). Let's calculate the team's average velocity (AV) per iteration unit (story points per day)

AV =
$$\frac{\text{sprint duration}}{\text{Velocity}} = \frac{20}{6} = 3.33$$

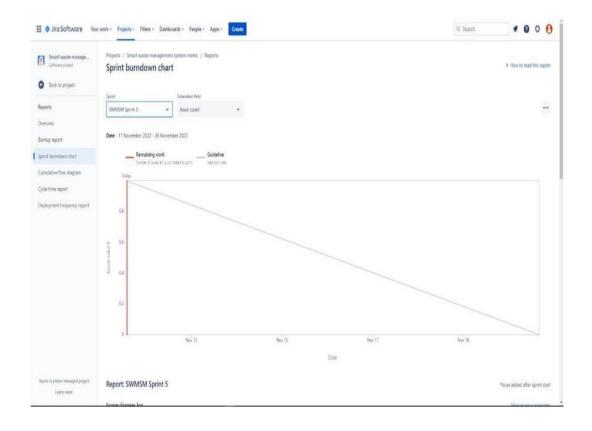
Burndown Chart:

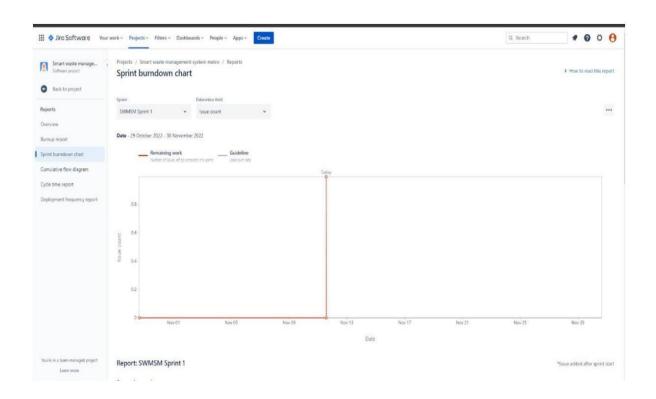
A burn down chart is a graphical representation of work left to do versus time. It is often used in agile software development methodologies such as Scrum. However, burn down charts can be applied to any project containing measurable progress over time.

6.3 Reports from JIRA

Jira helps teams plan, assign, track, report, and manage work and brings teams together for everything from agile software development and customer support to start-ups and enterprises. Software teams build better with Jira Software, the #1 tool for agile teams.

BURNDOWN CHART

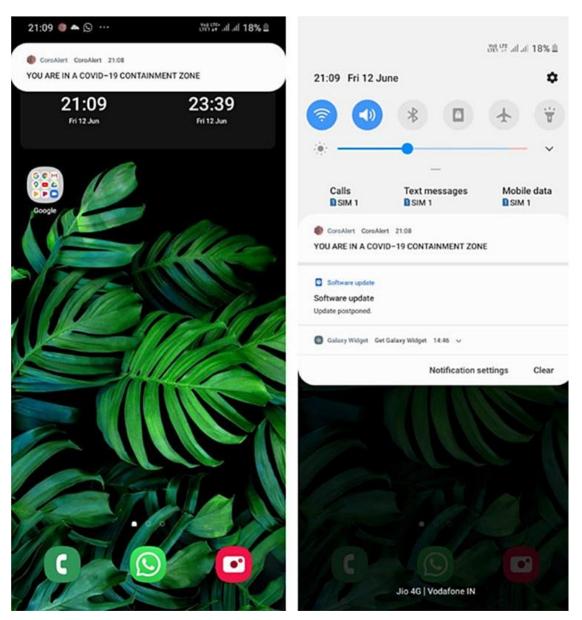




7. CODINGS & SOLUTIONING

7.1 Feature 1

The developed android application further extracts the IMEI number of the trespasser in the containment zones and uploads it in the online database. The identified containment zones chosen for the testing of the application were visited one by one. The various containment zones identified for conducting the test, the date, time of entry and exit, time of receiving the notifications alerts upon entering or exiting in the containment zones. The notifications given to the user according to the triggering event upon entering or exiting in the containment zones. One IMEI number among the various IMEI numbers of the trespassing in the containment zones which is extracted by the Andriod application and updated in the online database in real-time. It is highlighted that the application sends notification alerts with in 30 seconds on entering and exiting the containment zones respectively.

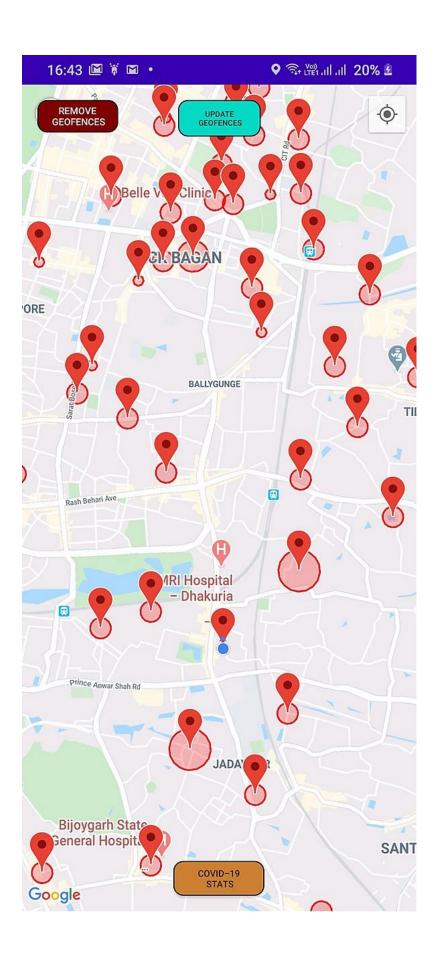


7.2 Feature 2

The application provides an efficient way of showing the identified Covid-19 containment zones to the users in a google map. With the alarming increase of Covid-19 affected cases through out the world, this developed application can be employed as a tool for creating further social awareness among the people. This application further tracks the users location and checks whether it is present in the list of identified containment zones. It sends separate notification alerts to the user on entering the containment areas. The application has been tested in various locations and has been found to yield accurate results. The application can be

further used for many purposes like forest safety to prevent users from entering restricted areas.

The application provides an efficient way of showing the identified Covid-19 containment zones to the users in a Google map. With the alarming increase of Covid-19 affected cases throughout the world, this developed application can be employed as a tool for creating further social awareness among the people. This application further tracks the user's location and checks whether it is present in the list of identified containment zones. It sends separate notification alerts to the user on entering.



8. TESTING

8.1 Test Cases

A test case is a set of actions performed on a system to determine if it satisfies software requirements and functions correctly.

The application uses Fire store which is a flexible and scalable database for mobile, web and server developments from Firebase and Google cloud platform. In Cloud Fire store, the mobile application supports serverless app architecture where the application connects to the Cloud Fire store database directly without any intermediate servers in between (Cloud Fire store SDKs and client libraries). The application receives data from the database using WebSocket. The Web Socket transfers data at a higher speed than HTTP. The database transfers new data to the user as soon as it is updated. When changes are saved in the database then all connected clients receive the updated data almost instantly. The Cloud Fire store does not always fetch data from the database unless the data has been changed, it gathers previous data from the cache memory which also enables its offline functioning.

8.2 User Acceptance Testing

Acceptance Testing UAT Execution & Report Submission

Date	03 November 2022
Team ID	PNT2022TMID00768
Project Name	Project - Containment zone alerting application
Maximum Marks	4 Marks

1. Purpose of Document

The purpose of this document is to briefly explain the test coverage and open issues of the [ProductName] project at the time of the release to User Acceptance Testing (UAT).

2. Defect Analysis

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

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

User acceptance testing (UAT), also called application testing or end-user testing, is a

phase of software development in which the software is tested in the real world by its intended audience.

Representational State Transfer (REST) API or RESTful web services are architectural styles for communications often used in web services development (RESTful API).

These APIs use less bandwidth than the Simple Object Access Protocol (SOAP) and hence they are useful for cloud applications. The RESTful API uses the HTTP methodologies which are defined by the RFC 2616 protocol. The information stored in a RESTful API are resources which can be read, updated, or deleted using resource methods like GET, POST or DELETE. The resources are accessed using Uniform Resource Identifiers (URIs). In this application, we have used a RESTful API from COVID19 India API (COVID19 India API) and the resource that we have used is the Country and State wise data. We have used the GET method to receive the data of containment zones as a JSON object in the application and show it in a bottom sheet.

9.RESULTS

9.1 Performance Matrices

Performance metrics are **used to measure the behavior**, **activities**, **and performance of a business**. This should be in the form of data that measures required data within a range, allowing a basis to be formed supporting the achievement of overall business goals.

Geo-fencing API from Android is used to create virtual boundaries or fences around geographical locations (Create and monitor geo-fences). The developers can add geo-fences at different locations by providing the latitudes and longitudes along with radius to define the virtual boundary at that location. Geo-fencing technology senses the user's current location and checks whether the location is inside any of the geo-fences created. A broadcast receiver receives intent contained in a pending-intent (an android API) sent by the location services when the user has entered, dwelt, or exited a geo-fence as shown in and can initiate a background work or send a notification. The geo-fence transitions events include enter, exit, and dwell and multiple transition events can be set for the geo-fences. In this application, the dwell transition is set for the containment zones with a loitering delay of 5 seconds and an expiration duration set to never expire. The broadcast receiver is set to initiate a notification by the notification manager upon receiving an intent. Once the geo-fences are set, the user would receive notification on entering and dwelling inside a containment zone.

10. ADVANTAGES &

DISADVANTAGESAdvantages

The android application shows the location of the containment zones to the users.

It also notifies the user when he or she trespasses the boundary of the containment zones or stays in the containment zones.

The application provides an efficient way of showing the identified Covid-19 containment zones to the users in google map.

With the alarming increase of Covid-10 affected cases through out the world.

This developed application can be employed as a tool for creating further social awareness among the people.

This application further tracks the users location and checks whether it is present in the list of identified containment zones.

It sends separate notifications alert to the user on entering the containment zones.

The application can be further used for many purposes like forest safety to prevent users from entering restricted areas.

Disadvantages

1.bluetooth

connectivity

Bluetooth signals work within a range of 3 meters (nearly 10-feet) which can also turn out as one of the limitations of Aarogya App. It's necessary to have a Bluetooth enabledphone to nearby to detect a possible infected case around you. The technology can

yield overwhelming results given that different Bluetooth versions have a wider range.

2. Trouble in device detection

At times, most smartphones are difficult to detect other phones with Bluetooth visibility settings hidden. If an infected person has set his/her phone's visibility hidden, your device may not be able to help. Also, there are also concerns whether this app works effectively in an interoperable environment or not. Smartphone owners may have difficulty spotting a potential case owning an iPhone.

11. CONCLUSION

The pandemic caused by the Covid-19 virus requires cooperation at the global level and a multi disciplinary approach. Great opportunities and potentials of implementing various technologies have become especially important for monitoring of patient and remote assistance, monitoring and forecasting of the pandemic spreading, control and prevention of the pandemic spreading, vaccine and medicine development, supply chains etc. This paper has presented the possibilities of implementing certain technologies for the development of advanced mobile applications used in fighting pandemic. In this paper, we focus on developing a mobile based application to provide information regarding the Covid-19 containment zones. The application further tracks the user's location and provides notification alert if the user has entered a containment zone. The application also provides daily Covid-19 case statistics to the users to keep them updated. The application is developed on Android SDK and uses Firebase Cloud Fire store to store the location data. Android's geo-fencing client is used to create geofences around the containment zones and notification manager is used to provide notifications. The application also uses RESTful web services to show the Covid-19 cases.

12. FUTURE SCOPE

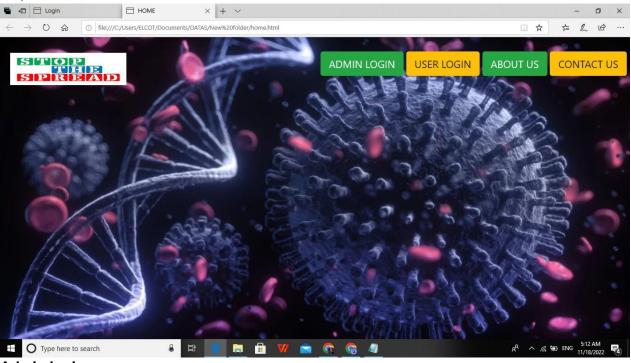
The application provides an efficient way of showing the identified Covid-19 containment zones to the users in a Google map. With the alarming increase of Covid-19 affected cases throughout the world, this developed application can be employed as a tool for creating further social awareness among the people. This application further

tracks the user's location and checks whether it is present in the list of identified containment zones. It sends separate notification alerts to the user on entering. The developed android application further extracts the IMEI Number of the trespasser in the containment zones which can be useful to the local police to track and identify people who are frequently trespassing the containment zones. Thereby this application identifies the containment zones and highlights the need for taking further precautionary measures for combating Covid-19. The application has been tested in various locations and has been found to yield accurate results. The application can be further used for many purposes like maritime and forest safety to prevent users from entering restricted areas.

```
13. APPENDIX
 SOURCE
 CODE
home page
<!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">
  <title>HOME</title>
  <meta charset="UTF-8">
    <!-- favicon -->
    <!-- <li><!-- <li>k rel="shortcut icon" href="/assets/img/favicon.ico" type="image/x-icon"> -->
    <!-- <li>k rel="icon" href="/assets/img/favicon.ico" type="image/x-icon"> -->
     rimage/png" sizes="16x16" href="/assets/img/favicon-32x32.png">
    <!-- bootstrap css cdn -->
    k rel="stylesheet"
href="https://stackpath.bootstrapcdn.com/bootstrap/4.5.2/css/bootstrap.min.css"
integrity="sha384-
JcKb8q3iqJ61gNV9KGb8thSsNjpSL0n8PARn9HuZOnIxN0hoP+VmmDGMN5t9UJ0Z
"crossorigin="anonymous">
    k rel="stylesheet" href="https:/ cdnjs.cloudflare.com/ajax/libs/font-
awesome/4.7.0/css/font-awesome.css">
    <!-- css stylesheet -->
    k rel="stylesheet" href="css/style.css">
    <!-- font styles cdn -->
    k rel="preconnect" href="https:/ fonts.gstatic.com">
    k href="https:/ fonts.googleapis.com/css2?family=Alegreya&display=swap"
```

```
rel="stylesheet">
    k href="https:/ fonts.googleapis.com/css2?family=Alegreya:wght@600&display=swap"
rel="stylesheet">
</head>
<body>
    <!-- bootstrap navbar -->
    <nav class="navbar sticky-top navbar-expand-lg navbar-dark">
      <div class="container-fluid">
       <a class="main-logo-img mt-3" href="#"><img src="https:/ mani07.s3.jp-tok.cloud-
object-storage.appdomain.cloud/Screenshot%20(9).png" alt="sheep-logo" height="50px"
width="180px">
        <!-- <a class="navbar-brand" href="index.html">J</a> -->
       </a>
       <div class="row donate-sponsor">
        <a type="button" class="btn btn-success mr-1" id="donate" href="/adminlogin"
target="_blank">ADMIN LOGIN</a>
                                                                             <a type="button"
class="btn btn-warning mr-1" id="donate" href="/userlogin" target="_blank">USER LOGIN</a>
         <a type="button" class="btn btn-success mr-1" id="sponsor" href="/aboutpage"
target=" blank">ABOUT US</a>
         <a type="button" class="btn btn-warning mr-1" id="sponsor" href="/contactus"
target="_blank">CONTACT US</a>
       </div>
      </div>
     </nav>
     <!-- navbar ends -->
     <style>
      body {
       background-image: url('https:/ mani07.s3.jp-tok.cloud-object-
storage.appdomain.cloud/Screenshot%20(16).png');
       background-repeat: no-repeat;
       background-attachment: fixed;
       background-size: 100% 100%;
      </style>
   </div>
```

```
</body>
</html>
output:
```



Admin login

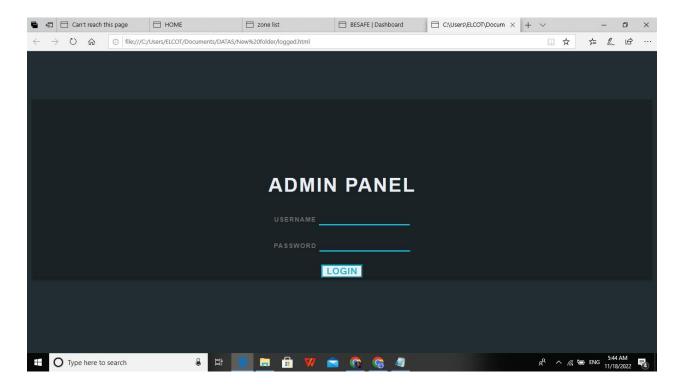
```
<!DOCTYPE html>
<html lang="en">
<head>
</head>
<body>
  <style>
body {
  background: #222D32;
  font-family: 'Roboto', sans-serif;
}
.login-box {
  margin-top: 75px;
  height: auto;
  background: #1A2226;
  text-align: center;
  box-shadow: 0 3px 6px rgba(0, 0, 0, 0.16), 0 3px 6px rgba(0, 0, 0, 0.23);
}
```

```
.login-key {
  height: 100px;
  font-size: 80px;
  line-height: 100px;
  background: -webkit-linear-gradient(#27EF9F, #0DB8DE);
  -webkit-background-clip: text;
  -webkit-text-fill-color: transparent;
}
.login-title {
  margin-top: 15px;
  text-align: center;
  font-size: 30px;
  letter-spacing: 2px;
  margin-top: 15px;
  font-weight: bold;
  color: #ECF0F5;
}
.login-form {
  margin-top: 25px;
  text-align: center;
}
input[type=text] {
  background-color: #1A2226;
  border: none;
  border-bottom: 2px solid #0DB8DE;
  border-top: 0px;
  border-radius: 0px;
  font-weight: bold;
  outline: 0;
  margin-bottom: 20px;
  padding-left: 0px;
  color: #ECF0F5;
  text-align: center;
}
input[type=password] {
  background-color: #1A2226;
```

```
border: none;
  border-bottom: 2px solid #0DB8DE;
  border-top: 0px;
  border-radius: 0px;
  font-weight: bold;
  outline: 0;
  padding-left: 0px;
  margin-bottom: 20px;
  color: #ECF0F5;
}
.form-group {
  margin-bottom: 40px;
  outline: 0px;
}
.form-control:focus {
  border-color: inherit;
  -webkit-box-shadow: none;
  box-shadow: none;
  border-bottom: 2px solid #0DB8DE;
  outline: 0;
  background-color: #1A2226;
  color: #ECF0F5;
}
input:focus {
  outline: none;
  box-shadow: 0 0 0;
}
label {
  margin-bottom: 0px;
}
.form-control-label {
  font-size: 10px;
  color: #6C6C6C;
  font-weight: bold;
  letter-spacing: 1px;
}
```

```
.btn-outline-primary {
  border-color: #0DB8DE;
  color: #0DB8DE;
  border-radius: 0px;
  font-weight: bold;
  letter-spacing: 1px;
  box-shadow: 0 1px 3px rgba(0, 0, 0, 0.12), 0 1px 2px rgba(0, 0, 0, 0.24);
}
.btn-outline-primary:hover {
  background-color: #0DB8DE;
  right: 30px;
}
.login-btm {
  float: center;
}
.login-button {
  padding-right: 0px;
  text-align: center;
  margin-bottom: 25px;
}
.login-text {
  text-align: center;
  padding-left: 0px;
  color: #A2A4A4;
}
.loginbttm {
  padding: 0px;
}
  </style>
  <div class="container">
    <div class="row">
       <div class="col-lg-3 col-md-2"></div>
       <div class="col-lg-6 col-md-8 login-box">
```

```
<div class="col-lg-12 login-key">
           <i class="fa fa-key" aria-hidden="true"></i>
         </div>
         <div class="col-lg-12 login-title">
           ADMIN PANEL
         </div>
         <div class="col-lg-12 login-form">
           <div class="col-lg-12 login-form">
             <form action="/host" method="post">
                <div class="msg" style="color:white"></div>
                <div class="group">
                  <label class="form-control-label">USERNAME</label>
                  <input type="text" class="input" name="uname" required>
                </div>
                <div class="group">
                  <label class="form-control-label">PASSWORD</label>
                  <input type="password" class="input" name="pwd" required>
                </div>
                <div class="col-lg-12 loginbttm">
                  <div class="col-lg-6 login-btm login-text">
                    <!-- Error Message -->
                  </div>
                  <div class="col-lg-6 login-btm login-button">
                    <button type="submit" class="btn btn-outline-primary">LOGIN</button>
                  </div>
                </div>
              </form>
           </div>
         </div>
         <div class="col-lg-3 col-md-2"></div>
       </div>
    </div>
</body>
</html>
```



Add & Remove Zone

```
<html>
<head>
 <title>CONTAINMENT ZONES</title>
 k href="https:/ mani07.s3.jp-tok.cloud-object-storage.appdomain.cloud/login.css"
rel="stylesheet"/>
  </head>
  <body>
<h2>ADD/REMOVE ZONE</h2>
<a href="/home"style="text-decoration: none;position: absolute; top: 10px; right: 20px;
background-color: red; color: white; padding: 5px 20px; border-radius: 5px;">HOME</a>
<div class="bg-1"></div>
<div class="container" id="container">
 <div class="form-container sign-up-container">
 <form action="#">
<h1>ZONE DETAILS</h1>
<input type="text" placeholder="DISTRICT NAME" />
<input type="text" placeholder="AREA NAME" />
<input type="number" placeholder="PIN CODE" />
 <input type="number" placeholder="TODAY CASES" />
 <form action="/action_page.php">
 <label for="Type">Zone Type:</label>
```

```
<select id="Zone Type" name="ZONE TYPE">
       <option value="volvo">RED</option>
       <option value="saab">YELLOW</option>
       <option value="mercedes">GREEN</option>
    </select>

<button> <a href="/zone"target="_blank">UPDATE</a></button>
</div>
<div class="form-container sign-in-container">
<form action="#">
k rel="stylesheet" href="F:\ibm\sprint\sprint 1 duplicate\login\css\login3.css">
<h1>REMOVE ZONE</h1>
<input type="text" placeholder="DISTRICT NAME" />
 <input type="text" placeholder="AREA NAME" />
 <input type="number" placeholder="PIN CODE" />
<button><a href="/remove" target="_blank">REMOVE</a></button>
</form>
</div>
<div class="overlay-container">
 <div class="overlay">
 <div class="overlay-panel overlay-left">
 <h1>UPDATE UPDATED DATA!</h1>
 To keep the containment zones current data...
<button class="ghost" id="signIn" >REMOVE ZONE/button>
</div>
<div class="overlay-panel overlay-right">
<h1>UPDATE UPDATED DATA!</h1>
To keep the containment zones current data...
<button class="ghost" id="signUp">ADD ZONE</a></button>
</div>
</div>
</div>
</div>
<script src="https:/ mani07.s3.jp-tok.cloud-object-storage.appdomain.cloud/login3.js"></script>
<script src="https:/ cdnjs.cloudflare.com/ajax/libs/firebase/7.14.1-0/firebase.js"></script>
<script src="./mail.js"></script>
</body>
</html>
```

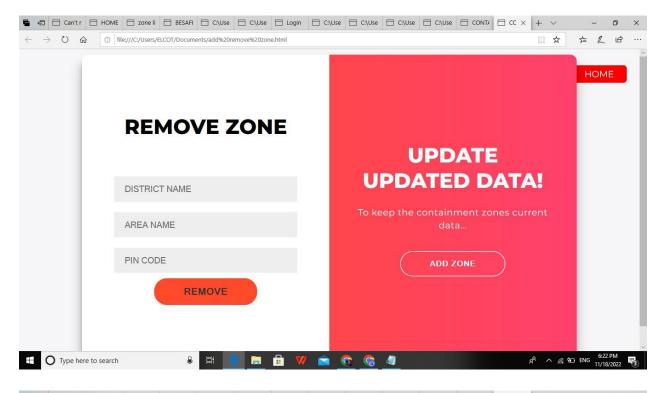
```
<!DOCTYPE html>
<html lang="en">
<head>
</head>
<body>
 <style>
 body{
 margin:0;
 color:#6a6f8c;
 background:#c8c8c8;
 font:600 16px/18px 'Open Sans',sans-serif;
*,:after,:before{box-sizing:border-box}
.clearfix:after,.clearfix:before{content:";display:table}
.clearfix:after{clear:both;display:block}
a{color:inherit;text-decoration:none}
.login-wrap{
 width:100%;
 margin:auto;
 max-width:525px;
 min-height:670px;
 position:relative;
background:url(https:/cdn.shrm.org/image/upload/c_crop%2ch_617%2cw_1099%2cx_0%2cy_0
/c fit%2cf auto%2cq auto%2cw 767/v1/Legal%20and%20Compliance/coronavirus4m_utz5jt?d
atabtoa=eylxNng5ljp7lngiOjAslnkiOjAslngyljoxMDk5LCJ5Mil6NjE3LCJ3ljoxMDk5LCJoljo2MTd9
fQ%3d%3d) no-repeat center;
 box-shadow: 0 12px 15px 0 rgba(0,0,0,.24), 0 17px 50px 0 rgba(0,0,0,.19);
.login-html{
 width:100%;
 height:100%;
 position:absolute;
 padding:90px 70px 50px 70px;
 background:rgba(40,57,101,.9);
.login-html .sign-in-htm,
.login-html .sign-up-htm{top:0;
 left:0;
 right:0;
```

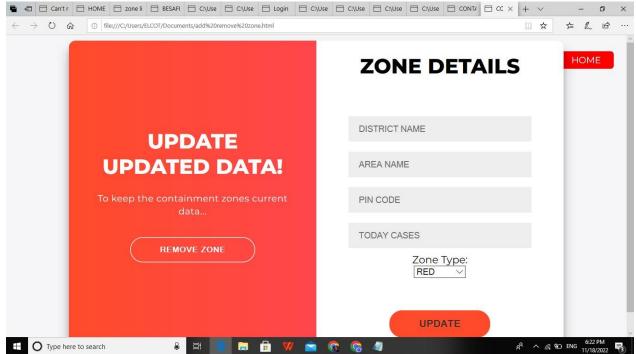
```
bottom:0;
 position:absolute;
 transform:rotateY(180deg);
 backface-visibility:hidden;
 transition:all .4s linear;
.login-html .sign-in,
.login-html .sign-up,
.login-form .group .check{
display:none;
}
.login-html .tab,
.login-form .group .label,
.login-form .group .button{
text-transform:uppercase;
}
.login-html .tab,
 font-size:22px;
 margin-right:15px;
 padding-bottom:5px;
 margin:0 15px 10px 0;
 display:inline-block;
 border-bottom:2px solid transparent;
.login-html .sign-in:checked + .tab,
.login-html .sign-up:checked + .tab{
 color:#fff;
 border-color:#1161ee;
.login-form{
 min-height:345px;
 position:relative;
 perspective:1000px;
 transform-style:preserve-3d;
}
.login-form .group{
 margin-bottom:15px;
.login-form .group .label,
.login-form .group .input,
.login-form .group .button{
```

```
width:100%;
 color:#fff;
 display:block;
.login-form .group .input,
.login-form .group .button{
 border:none;
 padding:15px 20px;
 border-radius:25px;
 background:rgba(255,255,255,.1);
.login-form .group input[data-type="password"]{
 text-security:circle;
 -webkit-text-security:circle;
.login-form .group .label{
 color:#aaa;
 font-size:12px;
.login-form .group .button{
 background:#1161ee;
.login-form .group label .icon{
 width:15px;
 height:15px;
 border-radius:2px;
 position:relative;
 display:inline-block;
 background:rgba(255,255,255,.1);
}
.login-form .group label .icon:before,
.login-form .group label .icon:after{
 content:";
 width:10px;
 height:2px;
 background:#fff;
 position:absolute;
 transition:all .2s ease-in-out 0s;
.login-form .group label .icon:before{
 left:3px;
```

```
width:5px;
 bottom:6px;
 transform:scale(0) rotate(0);
.login-form .group label .icon:after
 top:6px;
 right:0;
 transform:scale(0) rotate(0);
}
.login-form .group .check:checked + label{
 color:#fff;
.login-form .group .check:checked + label .icon{
 background:#1161ee;
.login-form .group .check:checked + label .icon:before{
 transform:scale(1) rotate(45deg);
}
.login-form .group .check:checked + label .icon:after{
 transform:scale(1) rotate(-45deg);
.login-html .sign-in:checked + .tab + .sign-up + .tab + .login-form .sign-in-htm{ transform:rotate(0);
.login-html .sign-up:checked + .tab + .login-form .sign-up-htm{
 transform:rotate(0);
}
.hr{
 height:2px;
 margin:60px 0 50px 0;
 background:rgba(255,255,255,.2);
}
.foot-lnk{
 text-align:center;
}
</style>
 <div class="login-wrap">
 <div class="login-html">
 <label for="tab-2" class="tab" style="color:white">ADD ZONE</label>
 <div class="login-form">
```

```
<form action="/addzone" method="post">
 <div class="group">
 <label for="latitude" class="label">Latitude</label>
 <input type="number" step="0.01" name="latitude" class="input" id="latitude" required>
 </div>
 <div class="group">
 <label for="longitude" class="label">Longitude</label>
 <input type="number" step="0.01" name="longitude" class="input" id="longitude"required>
 </div>
 <div class="group">
 <label for="city" class="label">City</label>
 <input type="text" name="city" class="input" id="city" required>
 </div>
 <div class="group">
 <label for="pincode" class="label">Pincode</label>
 <input type="number" name="pincode" class="input" id="pincode" required>
 </div>
 <div class="group">
 <input type="submit" class="button" value="Add Zone">
 </div>
 </div>
 </div>
</div>
</body>
</html>
```





Success.html

<!DOCTYPE html>

<html lang="en">

<head>

</head>

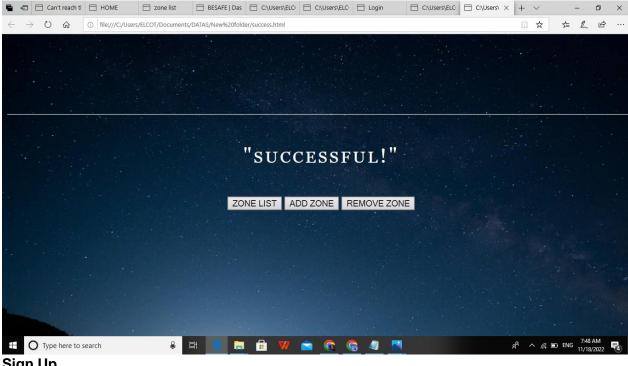
```
<body>
  <style>
html, body {
 overflow-x: hidden;
 overflow-y: hidden;
 height: 100%;
 width:
             100%;
 position: absolute;
 background-color: black;
 background-image: url('https:/ wallpapercave.com/wp/5KLTq1z.jpg');
 background-repeat: no-repeat;
 background-size: cover;
 background-position: top;
 z-index: -2;
#display {
color: white;
font-size: 2.9em;
top: 10px;
 border-bottom: thin solid;
 padding-bottom: 20px;
 opacity: 0.80;
 filter: alpha(opacity=80); /* For IE8 and earlier */
}
#date {
 color: white;
 font-size: 1.3em;
 font-family: Georgia, "Times New Roman", Times, serif;
 font-weight: normal;
 letter-spacing: 0.2em;
 opacity: 0.6;
 filter: alpha(opacity=60); /* For IE8 and earlier */
}
#footer {
width: 100%;
 height: 40px;
 position: fixed;
 bottom: -1px;
```

```
background-color: white;
 text-align: center;
 opacity: 0.5;
 filter: alpha(opacity=50); /* For IE8 and earlier */
}
#line {
 width: 100%;
 bottom: 4em;
 position: fixed;
 border-bottom: solid white;
 padding: 15px;
 opacity: 0.5;
filter: alpha(opacity=50); /* For IE8 and earlier */
}
.navbar {
 position: fixed;
 width: 100%;
 opacity: 0.6;
filter: alpha(opacity=60); /* For IE8 and earlier */
}
.wrapper {
background-color: red;
}
span {
 border-radius: 100px;
 opacity: 0.75;
 filter: alpha(opacity=75); /* For IE8 and earlier */
}
#content {
 height: 45em;
} p {
 max-width: 30em;
 color: white;
 font-family: "Adobe Caslon Pro", "Hoefler Text", Georgia, Garamond, Times, serif;
 letter-spacing:0.1em;
 text-align:center;
```

```
margin: 40px auto;
 text-transform: lowercase;
 line-height: 145%;
font-size: 2em;
font-variant: small-caps;
}
p:hover{
text-decoration: none;
}
.container {
 padding-top: 6em;
 text-align: center;
}
#b-nav {
 padding-bottom: 5em;
 position: fixed;
width: 100%;
 bottom: 2em;
}
#b-nav ul {
 margin: 0;
 padding: 0.5em;
 list-style-type: none;
 text-align: center;
}
#b-nav ul li {
display: inline;
}
#b-nav ul li a {
 text-decoration: none;
 padding: .2em 1em;
 background-color: black;
 opacity: 0.4;
filter: alpha(opacity=40); /* For IE8 and earlier */
}
```

```
.hold {
width: 100%;
text-align: left;
#gen {
 outline: none;
 padding-top: 5px;
 text-decoration: none;
 opacity: 0.6;
 background-color: black;
 color: white;
 border: thin solid white;
 height: 40px;
 width: 100px;
 border-radius: 2px;
 transition: 0.5s;
 padding-bottom: 5px;
#gen:hover {
 background-color: white;
 color: black;
 border: thin solid black;
 opacity: 0.8;
}
#gen a {
text-decoration: none;
}
#date {
 color: white;
}
@media screen
and (max-device-width: 800px) and
(max-device-height: 640px) and (-
 webkit-device-pixel-ratio: 2) and
 (orientation: portrait) {
```

```
p {
   font-size: 1em;
}
.fa-twitter {
font-size: 30px !important;
margin-left: 20px;
}
  </style>
 k rel="stylesheet" type="text/css" href="https:/ cdnjs.cloudflare.com/ajax/libs/font-
awesome/4.7.0/css/font-awesome.min.css">
 <body onload="startTime(); startDate()">
  <div class="container">
   <div id="date"></div>
   <div id="display"></div>
   <div id="content">
   <div class="logged"> </div>
    "SUCCESSFUL!"
    <a href="\table"><button type="button">ZONE LIST</button></a>
    <a href="\addzone"><button type="button">ADD ZONE</button></a>
    <a href="\removezone"><button type="button">REMOVE ZONE</button></a>
  </div>
 </div>
</body>
</html>
```



Sign Up

<html>

<head>

<title>CONTAINMENT ZONE ALERTING APPLICATION</title>

k href="https:/ mani07.s3.jp-tok.cloud-object-storage.appdomain.cloud/login.css"

rel="stylesheet"/>

</head>

<body>

<h2 style="margin-left: 500px;">ADMIN LOGIN PAGE <button style="margin-left: 350px;">

HOME

</button> </h2>

<div class="container" id="container">

<div class="form-container sign-up-container">

<form action="#">

<h1>Create Account</h1>

<input type="text" placeholder="Name" />

<input type="email" placeholder="Email" />

<input type="number" placeholder="Mobile number" />

<input type="password" placeholder="Password" /><i class="bi bi-eye-slash"

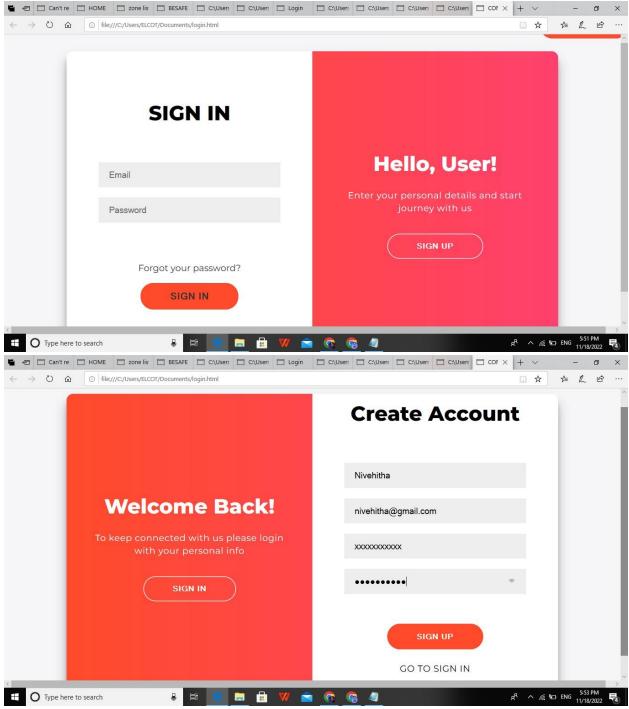
id="togglePassword"></i>

<buty>
button>Sign Up</button></br/>

GO TO SIGN IN

</form>

```
</div>
<div class="form-container sign-in-container">
 <form action="#">
 <link rel="stylesheet" href="F:\ibm\sprint\sprint 1 duplicate\login\css\login3.css">
 <h1>SIGN IN</h1>
 <input type="email" placeholder="Email" />
 <input type="password" placeholder="Password" />
 <a href="#">Forgot your password?</a>
 <but>
 <a href="/s2" target="_blank">
  Sign In</a></button>
  </form>
</div>
<div class="overlay-container">
<div class="overlay">
<div class="overlay-panel overlay-left">
 <h1>Welcome Back!</h1>
  To keep connected with us please login with your personal info
  <button class="ghost" id="signIn">Sign In</button>
</div>
<div class="overlay-panel overlay-right">
 <h1>Hello, User!</h1>
 Enter your personal details and start journey with us
 <button class="ghost" id="signUp">Sign Up</button>
 </div>
 </div>
</div>
</div>
 <script src="https:/ mani07.s3.jp-tok.cloud-object-</pre>
storage.appdomain.cloud/login3.js"></script>
 <script src="https:/ cdnjs.cloudflare.com/ajax/libs/firebase/7.14.1-0/firebase.js"></script>
 <script src="./mobilecallmail.js"></script>
</body>
</html>
```



User login

- <!DOCTYPE html>
- <html>
- <head>
- <meta charset="utf-8">
- <meta name="viewport" content="width=device-width, initial-scale=1, shrink-to-fit=no">
- <meta name="description" content="Start your development with a Dashboard for Bootstrap</p>

```
4.">
 <meta name="author" content="Creative Tim">
 <title>BESAFE | Dashboard</title>
 <!-- Favicon -->
 k rel="icon" href="static/img/brand/favicon.png" type="image/png">
 <!-- Fonts -->
 k rel="stylesheet"
href="https:/ fonts.googleapis.com/css?family=Open+Sans:300,400,600,700">
 <!-- Icons -->
 k rel="stylesheet" href="static/vendor/nucleo/css/nucleo.css" type="text/css">
 k rel="stylesheet" href="static/vendor/@fortawesome/fontawesome-free/css/all.min.css"
type="text/css">
 <!-- Page plugins -->
 <!-- Argon CSS -->
 k rel="stylesheet" href="static/css/argon.css?v=1.2.0" type="text/css">
</head>
<body>
 <!-- Sidenav -->
 <nav class="sidenav navbar navbar-vertical fixed-left navbar-expand-xs navbar-light bg-white"</p>
id="sidenay-main">
  <div class="scrollbar-inner">
   <!-- Brand -->
   <div class="sidenav-header align-items-center">
    <a class="navbar-brand" href="javascript:void(0)">
     <img src="E:\besafe.jpg" class="navbar-brand-img" alt="besafe"</pre>
style="width:100px;height:100px;">
    </a>
   </div>
   <div class="navbar-inner">
    <!-- Collapse -->
    <div class="collapse navbar-collapse" id="sidenav-collapse-main">
     <!-- Nav items -->
     ul class="navbar-nav">
       cli class="nav-item">
        <a class="nav-link active" href="E:\Project Development Phase\sprint
2\dashboard.html">
         <i class="ni ni-tv-2 text-primary"></i>
         <span class="nav-link-text">Dashboard</span>
        </a>
```

```
class="nav-item">
         < <a class="nav-link" href="/verify">i class="ni ni-square-pin text-primary"></i>
         <span class="nav-link-text">Verify your location</span>
        </a>
      class="nav-item">
        <a class="nav-link" href="E:\Project Development Phase\sprint 2\visitedzones.html">
         <i class="ni ni-bullet-list-67 text-default"></i>
         <span class="nav-link-text">Visited zones</span>
        </a>
      <!-- Divider -->
     <hr class="my-3">
     <!-- Navigation -->
     </div>
   </div>
  </div>
 </nav>
 <!-- Main content -->
 <div class="main-content" id="panel">
  <!-- Topnav -->
  <nav class="navbar navbar-top navbar-expand navbar-dark bg-primary border-bottom">
   <div class="container-fluid">
    <div class="collapse navbar-collapse" id="navbarSupportedContent">
     <!-- Search form -->
     <form class="navbar-search navbar-search-light form-inline mr-sm-3" id="navbar-search-main">
      <div class="form-group mb-0">
        <div class="input-group input-group-alternative input-group-merge">
         <div class="input-group-prepend">
          <span class="input-group-text"><i class="fas fa-search"></i></span>
         </div>
         <input class="form-control" placeholder="Search" type="text">
        </div>
      </div>
      <button type="button" class="close" data-action="search-close" data-target="#navbar-
search-main" aria-label="Close">
```

```
<span aria-hidden="true">x</span>
     </button>
    </form>
    <!-- Navbar links -->
    cli class="nav-item d-xl-none">
      <!-- Sidenav toggler -->
      <div class="pr-3 sidenav-toggler sidenav-toggler-dark" data-action="sidenav-pin" data-
target="#sidenav-main">
       <div class="sidenav-toggler-inner">
        <i class="sidenav-toggler-line"></i>
        <i class="sidenav-toggler-line"></i>
        <i class="sidenav-toggler-line"></i>
       </div>
      </div>
     <a class="nav-link" href="#" data-action="search-show" data-target="#navbar-search-
main">
       <i class="ni ni-zoom-split-in"></i>
      </a>
     <a class="nav-link pr-0" href="#" role="button" data-toggle="dropdown" aria-
haspopup="true" aria-expanded="false">
       <div class="media align-items-center">
        <span class="avatar avatar-sm rounded-circle">
         <img alt="Image placeholder" src="static/images/icon.jpg">
        </span>
        <div class="media-body ml-2 d-none d-lg-block">
         <span class="mb-0 text-sm font-weight-bold">{{user}}</span>
        </div>
       </div>
       </a>
       <div class="dropdown-menu dropdown-menu-right">
       <div class="dropdown-header noti-title">
        <h6 class="text-overflow m-0">Welcome!</h6>
```

```
</div>
      <a href="#!" class="dropdown-item">
       <i class="ni ni-single-02"></i>
       <span>My profile</span>
      </a>
      <a href="#!" class="dropdown-item">
       <i class="ni ni-settings-gear-65"></i>
       <span>Settings</span>
      </a>
      <div class="dropdown-divider"></div>
      <a href="/logout" class="dropdown-item">
       <i class="ni ni-user-run"></i>
       <span>Logout</span>
      </a>
     </div>
    </div>
 </div>
</nav>
<!-- Header -->
<!-- Header -->
<div class="header bg-primary pb-6">
 <div class="container-fluid">
  <div class="header-body">
   <div class="row align-items-center py-4">
    <div class="col-lg-6 col-7">
     <h6 class="h2 text-white d-inline-block mb-0">Default</h6>
     <nav aria-label="breadcrumb" class="d-none d-md-inline-block ml-md-4">

    class="breadcrumb breadcrumb-links breadcrumb-dark">

       <a href="#"><i class="fas fa-home"></i></a>
       class="breadcrumb-item"><a href="#">Dashboards</a>
       Default
      </01>
     </nav>
    </div>
    <div class="col-lg-6 col-5 text-right">
     <a href="/dashboard" class="btn btn-sm btn-neutral">Refresh</a>
    </div>
   </div>
   <!-- Card stats -->
```

```
<div class="row">
 <div class="col-xl-3 col-md-6">
  <div class="card card-stats">
   <!-- Card body -->
   <div class="card-body">
    <div class="row">
     <div class="col">
      <h5 class="card-title text-uppercase text-muted mb-0">Active cases</h5>
      <span class="h2 font-weight-bold mb-0">{{activecases}}</span>
     </div>
     <div class="col-auto">
      <div class="icon icon-shape bg-gradient-red text-white rounded-circle shadow">
       <i class="ni ni-active-40"></i>
      </div>
     </div>
    </div>
    <span class="text-nowrap">Total cases across our nation </span>
    </div>
  </div>
 </div>
 <div class="col-xl-3 col-md-6">
  <div class="card card-stats">
   <!-- Card body -->
   <div class="card-body">
    <div class="row">
     <div class="col">
      <h5 class="card-title text-uppercase text-muted mb-0">New Cases</h5>
      <span class="h2 font-weight-bold mb-0">{{newcases}}</span>
     </div>
     <div class="col-auto">
      <div class="icon icon-shape bg-gradient-orange text-white rounded-circle shadow">
       <i class="ni ni-chart-pie-35"></i>
      </div>
     </div>
    </div>
    <span class="text-success mr-2"><i class="fa fa-arrow-up"></i> </span>
     <span class="text-nowrap">Since 24 hrs</span>
```

```
</div>
 </div>
</div>
<div class="col-xl-3 col-md-6">
 <div class="card card-stats">
  <!-- Card body -->
  <div class="card-body">
   <div class="row">
    <div class="col">
     <h5 class="card-title text-uppercase text-muted mb-0">Deaths</h5>
     <span class="h2 font-weight-bold mb-0">{{deaths}}</span>
    </div>
    <div class="col-auto">
     <div class="icon icon-shape bg-gradient-green text-white rounded-circle shadow">
      <i class="ni ni-money-coins"></i>
     </div>
    </div>
   </div>
   <span class="text-nowrap">Since 24 hrs </span>
   </div>
 </div>
</div>
<div class="col-xl-3 col-md-6">
 <div class="card card-stats">
  <!-- Card body -->
  <div class="card-body">
   <div class="row">
    <div class="col">
     <h5 class="card-title text-uppercase text-muted mb-0">Recovered </h5>
     <span class="h2 font-weight-bold mb-0">{{recovered}}</span>
    </div>
    <div class="col-auto">
     <div class="icon icon-shape bg-gradient-info text-white rounded-circle shadow">
      <i class="ni ni-chart-bar-32"></i>
     </div>
    </div>
   </div>
   <span class="text-success mr-2"><i class="fa fa-arrow-up"></i> </span>
```

```
<span class="text-nowrap">Total recovered cases</span>
         </div>
       </div>
      </div>
     </div>
    </div>
   </div>
  </div>
  <!-- Page content -->
      <div class="card-body">
       <!-- Chart -->
       <div class="chart">
        <!-- Chart wrapper -->
       <!-- Projects table -->
   <!-- Footer -->
   <footer class="footer pt-0">
    <div class="row align-items-center justify-content-lg-between">
     <div class="col-lg-6">
      <div class="copyright text-center text-lg-left text-muted">
       © 2021 <a href="https://www.instagram.com/asuvath.in/" class="font-weight-bold ml-
1" target="_blank">@asuvath.in</a>
      </div>
     </div>
     <div class="col-lg-6">
      class="nav-item">
        <a href="/" class="nav-link" target="_blank">About Us</a>
       </div>
    </div>
   </footer>
  </div>
 </div>
 <!-- Argon Scripts -->
 <!-- Core -->
```

```
<script src="static/vendor/jquery/dist/jquery.min.js"></script>
 <script src="static/vendor/bootstrap/dist/js/bootstrap.bundle.min.js"></script>
 <script src="static/vendor/js-cookie/js.cookie.js"></script>
 <script src="static/vendor/jquery.scrollbar/jquery.scrollbar.min.js"></script>
 <script src="static/vendor/jquery-scroll-lock/dist/jquery-scrollLock.min.js"></script>
 <!-- Optional JS -->
 <script src="static/vendor/chart.js/dist/Chart.min.js"></script>
 <script src="static/vendor/chart.js/dist/Chart.extension.js"></script>
 <!-- Argon JS -->
 <script src="static/js/argon.js?v=1.2.0"></script>
</div>
</body>
</html>
REGISTER PAGE:
login.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">
k rel="stylesheet" type="text/css" href="style.css">
k rel="stylesheet"
href="https://stackpath.bootstrapcdn.com/bootstrap/4.3.1/css/bootstrap.min.css">
<title>Login</title>
</head>
<body class="bg-nav">
<nav class="navbar">
<a href="" class="navbar-brand text-light">IBM PROJECT</a>
</nav>
<div class="container">
<div class="row">
<div class="col-md-8">
<h1 class="text-light display-4 mt-100" style="font-size:80px">Containment Zone Alerting
Application</h1>
</div>
<div class="col-md-4">
<div class="card mt-100">
<div class="card-body">
<form>
```

```
<label>Email</label><br>
<input type="email" class="form-control"><br>
<label>Password/label><bre>
<input type="password" class="form-control"><br><br>
<input type="submit" class="btn btn-primary btn-block btn-lg" value="Login">
</form>
Not a member? <a href="register.html">Create Account</a>
</div>
</div>
</div>
</div>
</div>
</body>
</html>
main.py
from flask import Flask
app=Flask( name )
@app.route('/')
def home():
return 'login.html'
@app.route('/register')
def about():
return 'register.html'
@app.route('/mlogin')
def about():
return 'mlogin.html'
@app.route('/mregister')
def about():
return 'mregister.html'
if__name_=="__main__":
app.run(debug=True)
mlogin.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">
k rel="stylesheet" type="text/css" href="style.css">
k rel="stylesheet"
href="https://stackpath.bootstrapcdn.com/bootstrap/4.3.1/css/bootstrap.min.css">
```

```
<title>Management Login</title>
</head>
<body class="bg-nav">
<nav class="navbar">
<a href="" class="navbar-brand text-light">IBM PROJECT</a>
</nav>
<div class="container">
<div class="row">
<div class="col-md-8">
<h1 class="text-light display-4 mt-100" style="font-size:80px">Containment Zone Alerting
Application</h1>
</div>
<div class="col-md-4">
<div class="card mt-100">
<div class="card-body">
<form>
<label>Hospital ID</label><br>
<input type="text" class="form-control"><br>
<label>Password</label><br>
<input type="password" class="form-control"><br><br>
<input type="submit" class="btn btn-primary btn-block btn-lg" value="Login">
</form>
Not a member? <a href="mregister.html">Create Hospital Account</a>
</div>
</div>
</div>
</div>
</div>
</body>
</html>
mregister.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">
k rel="stylesheet" type="text/css" href="style.css">
k rel="stylesheet"
href="https://stackpath.bootstrapcdn.com/bootstrap/4.3.1/css/bootstrap.min.css">
<title>Register</title>
```

```
</head>
<body class="bg-nav">
<nav class="navbar">
<a href="" class="navbar-brand text-light">IBM PROJECT</a>
</nav>
<div class="container">
<div class="row">
<div class="col-md-8">
<h1 class="text-light display-4 mt-100" style="font-size:80px">Containment Zone Alerting
Application</h1>
</div>
<div class="col-md-4">
<div class="card mt-100">
<div class="card-body">
<form>
<label>Hospital Name</label><br>
<input type="text" class="form-control"><br>
<label>Email</label><br>
<input type="email" class="form-control"><br>
<label>Password</label><br>
<input type="password" class="form-control"><br>
<label>Address</label><br>
<input type="text" class="form-control"><br><br><
<input type="submit" class="btn btn-primary btn-block btn-lg" value="Register">
</form>
Already a member? <a href="mlogin.html">Login with hospital id</a>
</div>
</div>
</div>
</div>
</div>
</body>
</html>
register.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">
k rel="stylesheet" type="text/css" href="style.css">
```

```
k rel="stylesheet"
href="https://stackpath.bootstrapcdn.com/bootstrap/4.3.1/css/bootstrap.min.css">
<title>Register</title>
</head>
<body class="bg-nav">
<nav class="navbar">
<a href="" class="navbar-brand text-light">IBM PROJECT</a>
</nav>
<div class="container">
<div class="row">
<div class="col-md-8">
<h1 class="text-light display-4 mt-100" style="font-size:80px">Containment Zone Alerting
Application</h1>
</div>
<div class="col-md-4">
<div class="card mt-100">
<div class="card-body">
<form>
<label>Name</label><br>
<input type="text" class="form-control"><br>
<label>Email</label><br>
<input type="email" class="form-control"><br>
<label>Password</label><br>
<input type="password" class="form-control"><br><br><br><br></pr>
<input type="submit" class="btn btn-primary btn-block btn-lg" value="Register">
</form>
Already a member? <a href="login.html">Login here</a>
</div>
</div>
</div>
</div>
</div>
</body>
</html>
style.css
.bg-nav
background: #ff0084;
}
.mt-100
```

```
margin-top: 100px;
margin-left: 10px;
font-weight: bold;
                                                ☐ BESAFE | Dashboar ☐ C:\Users\ELCOT\Dc ☐ C:\Users\ELCOT\Dc ☐ Login
                                  zone list
← → ひ ⋒ ⊕ file:///C:/Users/ELCOT/Desktop/New%20folder/register.html
REGISTER PAGE: login.html
                                                                                  Email
                                                                                  Password
                                                                                          Login
                                                                                  Not a member? Create
                                                                                  Account
Type here to search
Sign in:
<!DOCTYPE html>
<html lang="en">
<head>
</head>
<body>
```

<style>
body{
margin:0;
color:aqua;

background:#c8c8c8;

font:600 16px/18px 'Open Sans',sans-serif;

.clearfix:after,.clearfix:before{content:";display:table}

*,:after,:before{box-sizing:border-box}

.clearfix:after{clear:both;display:block}
a{color:inherit;text-decoration:none}

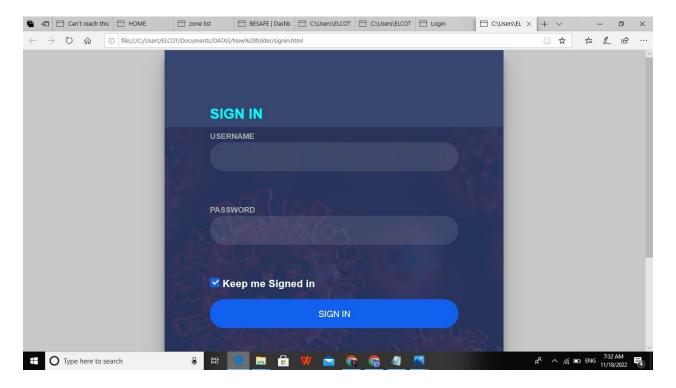
```
.login-wrap{
 width:100%;
 margin:auto;
 max-width:525px;
 min-height:670px;
 position:relative;
background:url(https:/cdn.shrm.org/image/upload/c_crop%2ch_617%2cw_1099%2cx_0%2cy_0
/c fit%2cf auto%2cq auto%2cw 767/v1/Legal%20and%20Compliance/coronavirus4m_utz5jt?d
atabtoa=eylxNng5ljp7lngiOjAslnkiOjAslngyljoxMDk5LCJ5Mil6NjE3LCJ3ljoxMDk5LCJoljo2MTd9
fQ%3d%3d) no-repeat center;
 box-shadow:0 12px 15px 0 rgba(0,0,0,.24),0 17px 50px 0 rgba(0,0,0,.19);
}
.login-html{
 width:100%;
 height:100%;
 position:absolute;
 padding:90px 70px 50px 70px;
 background:rgba(40,57,101,.9);
.login-html .sign-in-htm,
 top:0;
 left:0;
 right:0;
 bottom:0;
 position:absolute;
 transform:rotateY(180deg);
 backface-visibility:hidden;
 transition:all .4s linear;
.login-html .sign-in,
.login-form .group .check{
display:none;
}
.login-html .tab,
.login-form .group .label,
.login-form .group .button{
text-transform:uppercase;
.login-html .tab{
```

```
font-size:22px;
 margin-right:15px;
 padding-bottom:5px;
 margin:0 15px 10px 0;
 display:inline-block;
 border-bottom:2px solid transparent;
.login-html .sign-in:checked + .tab,
 color:aqua;
 border-color:#1161ee;
.login-form{
 min-height:345px;
 position:relative;
 perspective:1000px;
 transform-style:preserve-3d;
}
.login-form .group{
margin-bottom:15px;
}
.login-form .group .label,
.login-form .group .input,
.login-form .group .button{
 width:100%;
 color:#fff;
 display:block;
}
.login-form .group .input,
.login-form .group .button{
 border:none;
 padding:15px 20px;
 border-radius:25px;
 background:rgba(255,255,255,.1);
.login-form .group input[data-type="password"]{
 text-security:circle;
 -webkit-text-security:circle;
}
.login-form .group .label{
 color:#aaa;
```

```
font-size:12px;
}
.login-form .group .button{
background:#1161ee;
.login-form .group label .icon{
 width:15px;
 height:15px;
 border-radius:2px;
 position:relative;
 display:inline-block;
 background:rgba(255,255,255,.1);
}
.login-form .group label .icon:before,
.login-form .group label .icon:after{
 content:";
 width:10px;
 height:2px;
 background:#fff;
 position:absolute;
 transition:all .2s ease-in-out 0s;
.login-form .group label .icon:before{
 left:3px;
 width:5px;
 bottom:6px;
 transform:scale(0) rotate(0);
.login-form .group label .icon:after{
 top:6px;
 right:0;
 transform:scale(0) rotate(0);
.login-form .group .check:checked + label{
color:#fff;
.login-form .group .check:checked + label .icon{
background:#1161ee;
}
.login-form .group .check:checked + label .icon:before{
                 transform:scale(1) rotate(45deg);
```

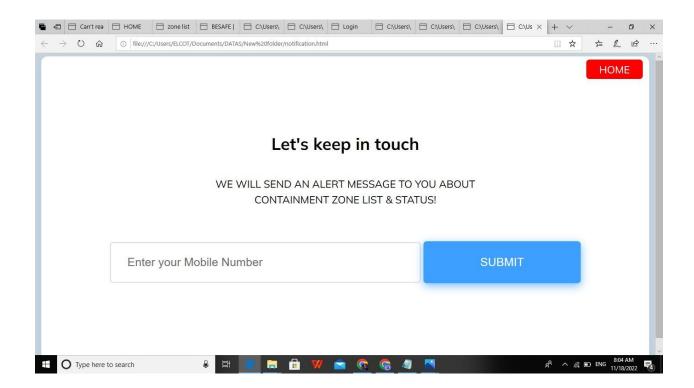
```
.login-form .group .check:checked + label .icon:after{
                 transform:scale(1) rotate(-45deg);
.login-html .sign-in:checked + .tab + .sign-up + .tab + .login-form .sign-in-htm{
                 transform:rotate(0);
}
.hr{
 height:2px;
 margin:60px 0 50px 0;
 background:rgba(255,255,255,.2);
}
.foot-lnk{
text-align:center;
}
</style>
 <div class="login-wrap">
 <div class="login-html">
 <input id="tab-1" type="radio" name="tab" class="sign-in" style="color:aqua" checked><label</pre>
for="tab-1" class="tab">Sign In</label>
 <div class="login-form">
 <form action="/reg" method="post">
 <div class="msg" style="color:white"></div>
 <div class="sign-in-htm">
 <div class="group">
 <label for="user" class="label">Username</label>
 <input type="text" name="username" class="input" id="username" required></br>
 </div>
 <div class="group">
 <label for="pass" class="label">Password</label>
 <input type="password" name="password" class="input" id="password" required></br>
 </div>
 <div class="group">
 <input id="check" type="checkbox" class="check" checked>
 <label for="check"><span class="icon"></span> Keep me Signed in</label>
 </div>
 <div class="group">
 <input type="submit" class="button" value="Sign In">
 </div>
```

```
<div class="hr"></div>
<div class="foot-lnk">
<a href="#forgot">Forgot Password?</a>
</div>
</div>
</div>
</div>
</div>
</div>
</div>
</html>
```



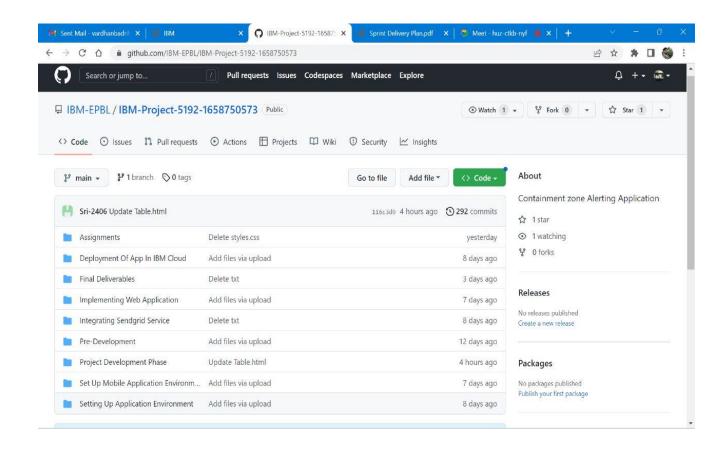
Notification:

```
<meta name="viewport" content="width=device-width, initial-scale=1.0">
 </head>
<body>
 <a href="/home"style="text-decoration: none;position: absolute; top: 10px; right: 20px;
background-color: red; color: white; padding: 5px 20px; border-radius: 5px;">HOME</a>
 <div class="bg-1"></div>
  <div class="subscribe">
    <h2 class="subscribe_title">Let's keep in touch</h2>
    WE WILL SEND AN ALERT MESSAGE TO YOU
ABOUTCONTAINMENT ZONE LIST & STATUS!
    <div class="form">
      <input type="email" class="form_email" placeholder="Enter your Mobile Number" />
      <button class="form button" onclick="submitted()">SUBMIT</button>
    </div>
    </div>
  </div>
  <script src="https:/ cdnjs.cloudflare.com/ajax/libs/firebase/7.14.1-0/firebase.js"></script>
  <script src="./mail.js"></script>
</body>
<script>
function submitted() {
  window.alert("Submitted");
</script>
</html>
```



GitHub & Project Demo Link:

GitHub is a code hosting platform for version control and collaboration. It lets you and others work together on projects from anywhere.



GitHub Link: https://github.com/IBM-EPBL/IBM-Project-5192-1658750573

Project Demo Link:

https://drive.google.com/file/d/1iA2pLGXL357Csw3zUrWJsG7FnYgWkHAy/view?usp=drivesdk