# CONTAINMENT ZONE ALERTING APPLICATION

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# CHAPTER - 1

# INTRODUCTION

## 1.1 Project Overview

The dreadful COVID-19 virus affected several lives all around the globe. COVID-19 pandemic has been declared a global health emergency by the World Health Organization (WHO) [1]. WHO has suggested a ‘test-isolate-trace’ approach throughout the pandemic [2]. In parallel, there has been a worldwide cooperative effort to develop a vaccine and numerous serological tests for the presence of antibodies [3]. This alarming situation has a great deal of impact on the lives of citizens. Many people across the globe are infected and have died due to this virus [4]. Strong immunity surely saves people at risk from getting affected with COVID-19. Children below 10 years and adults above 60 years are vulnerable to this disease as per the recorded statistics. Keeping ourselves clean and eating a nutritious diet would help us prevent ourselves from the deadly infection of the disease. The coronavirus has brought all the people together to strive hard in the field of science and technology so as to contribute to the society in this distressed period [5]. Since there is a rampant usage of mobile phones, every citizen has the knowledge of using mobile applications. There is no doubt in saying that mobile applications are pre-dominant than web-based applications. As the COVID-19 pandemic rages, engineers and researchers are coming up with applications, services, systems for contact tracing and many more creative ideas [6]

The perimeters of containment zones are decided based on the number of positive cases in the area, contact tracing history, and population density.

Coronavirus Pandemic Epidemiology (COPE) has come up with a symptom tracker mobile application which collects the data and analyses the effect of COVID-19 in different areas, thus residents in those localities can be alerted to take precautions. This application, launched in the UK, got a great reach of 2.8 million users in less than 2 months [7]. People get information regarding COVID-19 happenings around them through their mobiles. COVID-19 cases are gradually increasing irrespective of many lockdowns and strict guidelines given by the governments. The UK Government has a motive that better contact tracing application plays a vital role in beating COVID-19 and helps the present situation become new normal [8].

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. Key benefits of the application are monitoring people's activity and alerting them of their safety movement. It aims at building an application that provides information about the containment zones of a particular region by continuously monitoring an individual's location. Location of the individual must be stored in the Database. Alerts are sent using the notification service.

## Features of the Application

### *Admin App (portal):*

They should login to the app and update the containment zone's locations in the portal. Based on the location a Geofence will be created within a 100 meters radius. They should be able to see how many people are visiting that zone.

### *User App (Mobile App):*

The app should have a user registration and login. After the user logged into the app it will track the user's location and update the database with the current location. If the user is visiting the containment zone, he will get an alert notification

## 1.2 Purpose

The coronavirus has challenged the lives of many people all around the globe. The widespread use of COVID-19 left people starving with no money and bread. To combat this effect on people the only way is to maintain social distance and be cautious all the time. We put forward a mobile application-based strategy to combat the risk of COVID-19. The motive of the proposed model is to make people aware of COVID-19 cases updates and also notify them at various situations. We developed the mobile application using android studio and made use of Google firebase for the database. COVID-19 cases status along with information related to pandemic and emergency contacts are featured in the application. The outcomes of the application are good in response time as well as in the delivering of notifications.

# CHAPTER - 2

# LITERATURE SURVEY

## 2.1 EXISTING PROBLEM

### Synopsis

The app is there on both Google Play and Apple App Store. It is available in 11 languages. It is designed to keep a user informed in case s/he has crossed paths with someone who has tested positive. The tracking is done through a Bluetooth & location-generated social graph, which can show your interaction with anyone who has tested positive.

Aarogya Setu is a mobile application to keep people informed of their potential risk of Covid19 infection. The Government of India launched Aarogya Setu mobile App on April 02 to protect Indian citizens from mass spread coronavirus. The app uses a Bluetooth based contact tracing mechanism. It records details of all the people you have come in contact with as you go about your routine activities. The application will alert you if any one of your contacts tests positive. Aarogya Setu app also provides the relevant and curated medical advisories pertaining to the Covid19 pandemic. Aarogya Setu app can also identify potential hotspots around your location. When you take the self-assessment test on the app, by correlating the symptoms that you report along with your location information, the app will be able to identify potential hotspots early enough. This will help take necessary interventions to control and mitigate the spread of Covid19. The App is available in 12 languages and on Android, iOS and KaiOS platforms. Once installed, users must switch on their ‘Bluetooth’ and set the location sharing to ‘Always’ to ensure that the app is able to derive all the relevant information for the benefit of community.

### How it works?

The Aarogya Setu App on your phone detects other devices that have the same app when they come within the Bluetooth proximity of your phone. When this happens, both the phones securely exchange a digital signature of that interaction, including time, proximity, location and duration. This data is stored on devices of all individuals. In case any person that you came in contact with in the last 14 days tests positive for coronavirus, the app calculates your risk of infection based on your proximity of interaction with that person. The app there commends a suitable action.


***The steps required to use the app are as follows:***

1. After you've run the app, allow it to access your device's location, as prompted.
2. You'll get an OTP; enter it and you are on.
3. Choose your gender from the options given.
4. Enter your full name, then age, and then profession, as asked.
5. You'll be asked about your foreign travel history in last 30 days. Give the appropriate answer.

## 2.2 References


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## 2.3 Problem Statement Definition

### WHAT IS CONTAINMENT ZONE?

In view of the rising number of Covid-19 cases, the Centre and state governments have taken several measures to block the transmission of the virus. Among these steps has been the demarcation of an area as red, orange, green, or containment zone, based on the severity of the virus spread in that area. According to the Union Ministry for Health and Family Welfare, containment zones are specific geographic areas where Covid-19 positive cases are found in large numbers. These zones are created to map and prevent local transmission. They are identified by the Rapid Response Team (RRT) based on the extent of cases listed and mapped by them There is a strict restriction on movement in these areas and the residents in these areas are asked not to step out of their homes except during medical emergencies and for essential needs. Only essential activities are allowed in the containment zones. During the nationwide lockdown to prevent the spread of the virus, states and Union Territories had been given the power to identify red, orange and green zones. The district administration and local urban bodies identified the containment and buffer zones, in line with health ministry guidelines.

The red, orange, and green zones are operated at the state and inter-district levels, while the demarcation of containment zones is done within a town, village, or municipal or panchayat area The perimeters of containment zones are decided based on the number of positive cases in the area, contact tracing history, and population density. Rapid response teams demarcate the area of a 100meter radius around the epicentre (the residence of the positive case or where they have been isolated) in case contact listing and mapping takes more than 24 hours. This area of 3 km radius is called the containment zone.

# CHAPTER - 3

# IDEATION AND 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.

**Process: How to Build an Empathy Map**

Go through the following steps to create a valid and useful empathy map:

**1. Define scope and goals**

**a. What user or persona will you map?** Will you map a persona or an individual user? Always start with a 1:1 mapping (1 user/persona per empathy map). This means that, if you have multiple personas, there should be an empathy map for each.

**b. Define your primary purpose for empathy mapping.** Is it to align the team on your user? If so, be sure everyone is present during the empathy-mapping activity. Is it to analyse an interview transcript? If so, set a clear scope and timebox your effort to ensure you have time to map multiple user interviews.

**2. Gather materials**

Your purpose should dictate the medium you use to create an empathy map. If you will be working with an entire team, have a large whiteboard, sticky notes, and markers readily available. (The outcome will look somewhat like the illustration above.) If empathy mapping alone, create a system that works for you. The easier to share out with the rest of the team, the better.

**3. Collect research**

Gather the research you will be using to fuel your empathy map. Empathy mapping is a qualitative method, so you will need qualitative inputs: user interviews, field studies, diary studies, listening sessions, or qualitative surveys.

**4. Individually generate sticky notes for each quadrant**

Once you have research inputs, you can proceed to mapping as a team. In the beginning, everybody should read through the research individually. As each team member digests the data, they can fill out sticky notes that align to the four quadrants. Next, team members can add their notes to the map on the whiteboard.

**5. Converge to cluster and synthesize**

In this step, the team moves through the stickies on the board collaboratively and clusters similar notes that belong to the same quadrant. Name your clusters with themes that represent each group (for example, “validation from others” or “research”). Repeat themes in each quadrant if necessary. The activity of clustering facilitates discussion and alignment — the goal being to arrive at a shared understanding of your user by all team members.

**6. Polish and plan**

If you feel that you need more detail or you have unique needs, adapt the map by including additional quadrants (like Goals the example below) or by increasing specificity to existing quadrants. Depending on the purpose of your empathy map, polish and digitize the output accordingly. Be sure to include the user, any outstanding questions, the date and version number. Plan to circle back to the empathy map as more research is gathered or to guide UX decisions.

**Format**

Traditional empathy maps are split into 4 quadrants (*Says*, *Thinks*, *Does*, and *Feels*), with the user or persona in the middle. Empathy maps provide a glance into who a user is as a whole and are **not** chronological or sequential.

The ***Says*** quadrant contains what the user says out loud in an interview or some other usability study. Ideally, it contains verbatim and direct quotes from research.

- *“I am allegiant to Delta because I never have a bad experience.”*
- *“I want something reliable.”*
- *“I don’t understand what to do from here.”*

The ***Thinks*** quadrant captures what the user is thinking throughout the experience. Ask yourself (from the qualitative research gathered): what occupies the user’s thoughts? What matters to the user? It is possible to have the same content in both *Says* and *Thinks*. However, pay special attention to what users think, but may not be willing to vocalize. Try to understand why they are reluctant to share — are they unsure, self-conscious, polite, or afraid to tell others something?

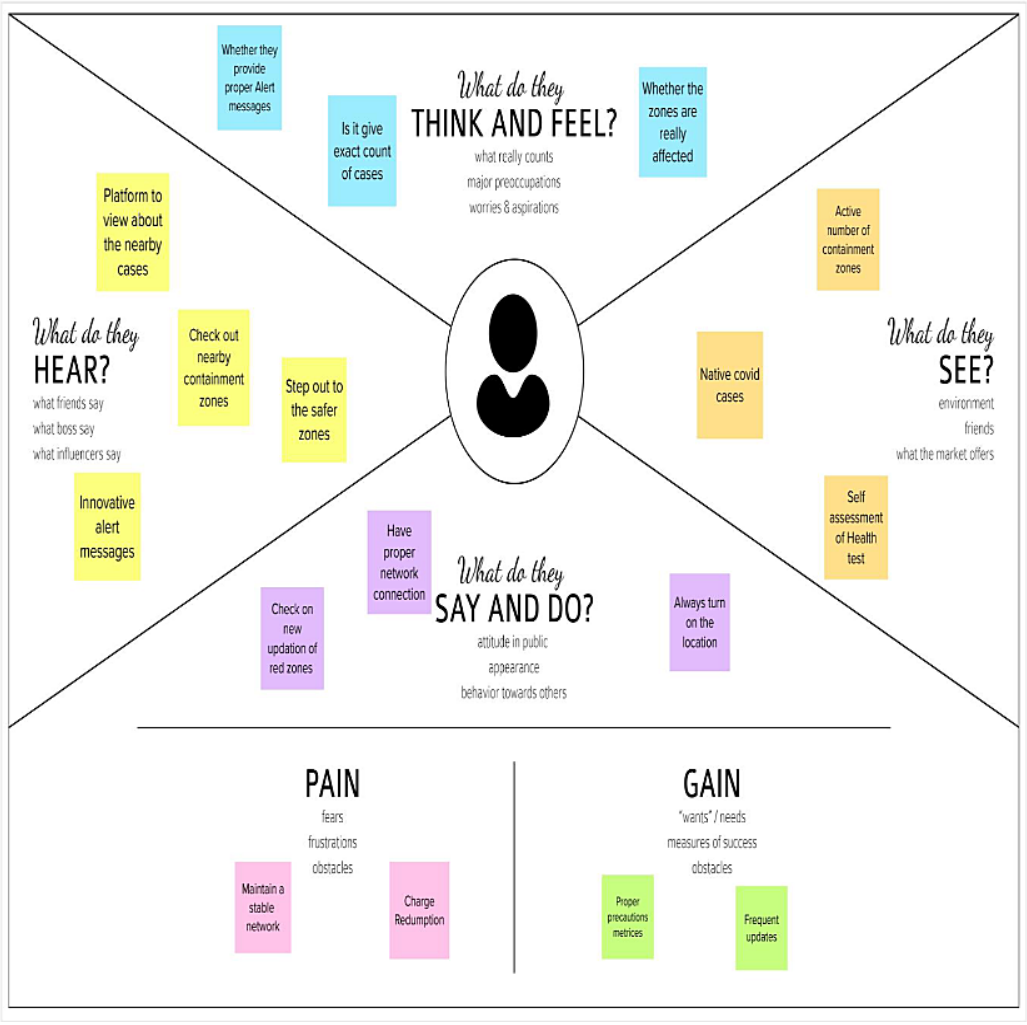
- *“This is really annoying.”*
- *“Am I dumb for not understanding this?”*

The ***Does*** quadrant encloses the actions the user takes. From the research, what does the user physically do? How does the user go about doing it?

- *Refreshes page several times.*
- *Shops around to compare prices.*

The ***Feels*** quadrant is the user's emotional state, often represented as an adjective plus a short sentence for context. Ask yourself: what worries the user? What does the user get excited about? How does the user feel about the experience?

- *Impatient: pages load too slowly*
- *Confused: too many contradictory prices*
- *Worried: they are doing something wrong*



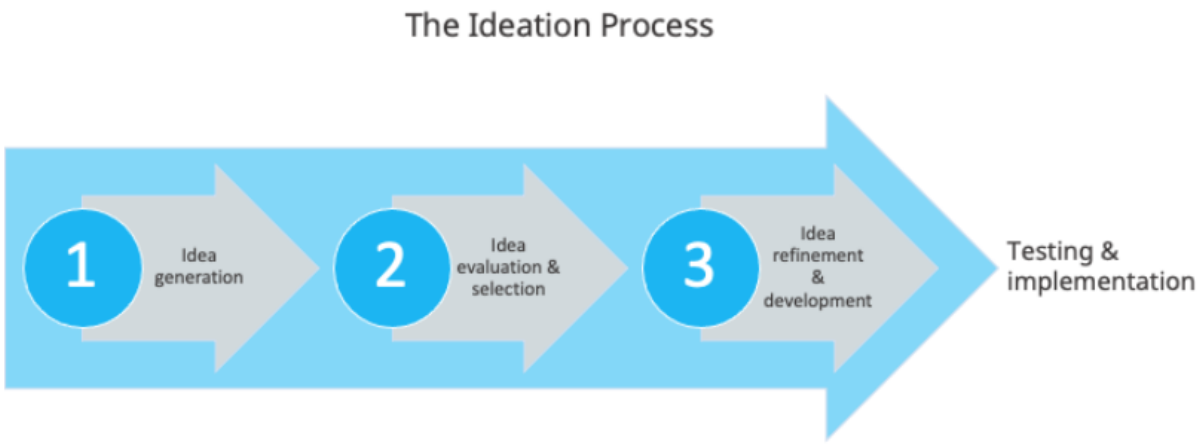
Our users are complex humans. It is natural (and extremely beneficial) to see juxtaposition between quadrants. You will also encounter inconsistencies — for example, seemingly positive actions but negative quotes or emotions coming from the same user. This is when empathy maps become treasure maps that can uncover nuggets of understanding about our user. It is our job as UX professionals to investigate the cause of the conflict and resolve it.

Some of these quadrants may seem ambiguous or overlapping — for example, it may be difficult to distinguish between *Thinks* and *Feels*. Do not focus too much on being precise: if an item may fit into multiple quadrants, just pick one. The 4 quadrants exist only to push our knowledge about users and to ensure we don't leave out any important dimension. (If you don't have anything to put into a certain quadrant, it's a strong signal that you need more user research before proceeding in the design process.

## 3.2 Ideation and BrainStorming

Ideation is often closely related to the practice of brainstorming, a specific technique that is utilized to generate new ideas. A principal difference between ideation and brainstorming is that ideation is commonly more thought of as being an individual pursuit, while brainstorming is almost always a group activity. Brainstorming is usually conducted by getting a group of people together to come up with either general new ideas or ideas for solving a specific problem or dealing with a specific situation.

Ideation is often the most exciting stage in a Design Thinking project because almost unrestrained free thinking can occur within the given field. In the Ideation stage, the aim is to generate a large number of ideas — ideas that potentially inspire newer, better ideas — which the team can then filter and narrow down into the best, most practical, or most innovative ones. There are many great methods that can help the design team during the Ideation sessions.



## 3.3 Proposed Solution

proposed solution should relate the current situation to a desired result and describe the benefits that will accrue when the desired result is achieved. So, begin your proposed solution by briefly describing this desired result.

### Problem Statement (Problem to be solved):

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. Key benefits of the application are monitoring people's activity and alerting them of their safety movements.

### Idea / Solution description

The project aims at building an application that provides information about the containment zones of a particular region by continuously monitoring an individual's location. Location of the individual must be stored in the Database. Alerts are sent using the notification service

### Novelty / Uniqueness

As we gone through the different publication. The already existing Solution was that "Aarogya Setu App" central government taken the initiative in the year of 2022 on that time there is huge wave of COVID - 19. App describes about There is also a “Self-Assessment Test” feature on the Aarogya Setu Application in which some questions related to the health and symptoms of the user are asked, and based on the answers, the application shows the risk level for the user in different colour codes. There is no risk if it indicates green colour code and the text shows “You are safe.” There is low risk if it shows yellow colour code and the version shows “You are at moderate risk.” There are high chances of risk if it shows an orange colour code; then the user must contact the help-line number given in the App. So, we can send the alert messages through the mail by sending grid.

### Social Impact / Customer Satisfaction

This app tracks your location and helps you see whether any person is infected with Corona in your area.

* It also alerts you if you are passing through a locality where coronavirus positive cases are found

* It recognizes the corona infected people in an around your mobile Bluetooth range.

* The app also directs users to public health advisories, hygiene tips, dos and don’ts, myth busters, and other useful information.

* Giving utmost security to your private details in the mobile, this app strictly doesn’t share your data with any third-party.

* The app aims to tell people about the ‘best’ practices they can follow and the apt sources they can refer to so that people can cope well with the ongoing virus outbreak.

* You will be alerted if someone you have come in close proximity of even unknowingly, tests COVID-19 positive

## Business Model (Revenue Model)

* Administrative and Public Health Leadership.

* Infection containment at source

* Protecting the uninfected

* Strengthening Healthcare Infrastructure.

* Capacity Building of Human Resources.

* Strong - Intersectoral co-ordination

## Scalability of the Solution

* No - virus Circulation among the user areas.

* Sporadic Human infection

* Sustained human - to - human transmission.

* Outbreaks in countries in one region

* Several outbreaks in other regions.

* Post peak - levels dropped below peak levels.

* Possible new wave.

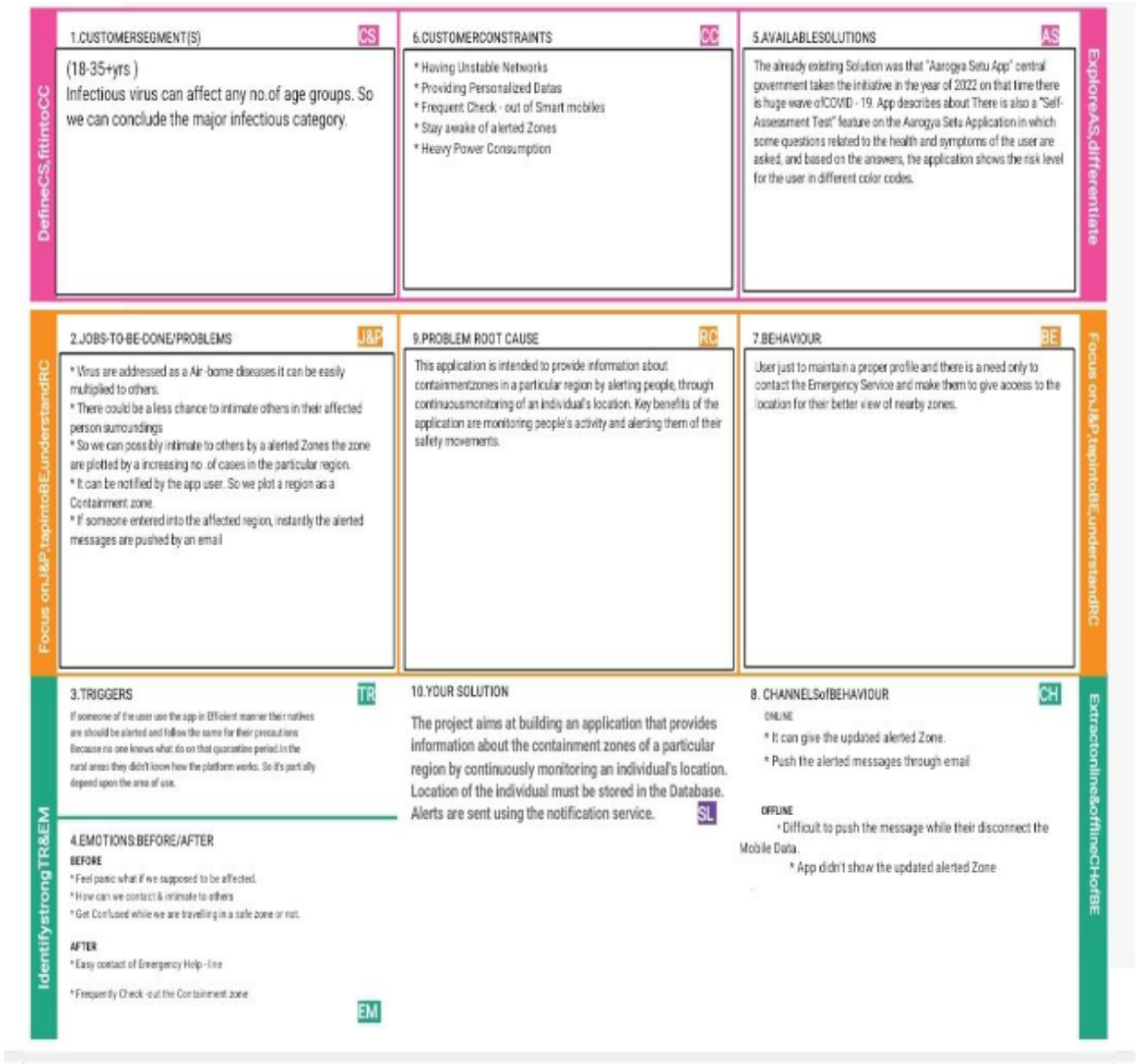
* Post Pandemic

## 3.4 Problem Solution Fit

The Problem-Solution Fit simply means that you have found a problem with your customer and that the solution you have realized for it actually solves the customer’s problem. It helps entrepreneurs, marketers and corporate innovators identify Behavioral patterns and recognize what would work and why

**Purpose:**

Solve complex problems in a way that fits the state of your customers.
Succeed faster and increase your solution adoption by tapping into existing mediums and channels of behavior.
Sharpen your communication and marketing strategy with the right triggers and messaging.
Increase touch-points with your company by finding the right problem-behavior fit and building trust by solving frequent annoyances, or urgent or costly problems.
Understand the existing situation in order to improve it for your target group.



# CHAPTER - 4

# REQUIREMENT ANALYSIS

Requirements analysis, also called requirements engineering, is **the process of determining user expectations for a new or modified product**. These features, called requirements, must be quantifiable, relevant and detailed. In software engineering, such requirements are often called functional specifications.

Functional requirements **may involve calculations, technical details, data manipulation and processing, and other specific functionality that define what a system is supposed to accomplish**. Behavioral requirements describe all the cases where the system uses the functional requirements, these are captured in use cases.

**FUNTIONAL REQIREMENTS**

- **User Registration** It can be registered by valid Email id or Phone number
- **User Confirmation** Verification code can be received by Registering mail id or phone number message Alert via Notification By user access of location while entered in the alerted area the notification is send by GPS tracking system and push the grids through mail id.
- **Show infected zones** Marked by Geo fencing.
- **Track alternate routes** By Google map API or Google dependencies

**NON-FUNCTIONAL REQUIREMENTS**

- **Usability** GUI is easier to interact with.
- **Security** The data collected from the user will be stored securely.
- **Reliability** The user can trust the results and navigate safely.
- **Performance** Accurate results can be achieved due to real-time location sharing.
- **Availability** Available if the network band width of the user is of good range. NFR-**Scalability** The application can be used from anywhere and can also be implemented for both mobile and web apps for the user to interact

# CHAPTER - 5

# PROJECT DESIGN

The thinking that occurs during Project Design, on the other hand, is less concerned with minutiae and more concerned with Project Management software can aid in the organisation of both the high-level strategy and the finer points of a project's design.

The following entities make up a general Project Design:

- A detailed description of the organisation or corporation that will be responsible for the project's development.
- A detailed overview of the project, its origins, and how it should be developed
- The project's objectives, milestones, goals, and outcomes are listed down.
- It covers every product, significant deliverables, evaluation and monitoring standards, and success criterion characteristics.
- Finally, it discusses the budget estimating criteria and principles.

## 5.1 Data Flow Diagram

A data flow diagram (DFD) is a graphical or visual representation using a standardized set of symbols and notations to describe a business's operations through data movement. They are often elements of a formal methodology such as Structured Systems Analysis and Design Method (SSADM).

**APP USER**

App User means a person who have using Mobile App or We chat app or Wallet App.

**ACCOUNT ACTIVATION**

Account Activation means completion of the registration form and giving all compulsory consents by the Customer by marking relevant tick boxes being available after pressing the relevant button on the Website and accessed through the Website.

**ACCESS LOCATION**

You can let apps use your phone's location to take actions for you or give you information.

**ENTERING INTO CONTAINMENT ZONE**

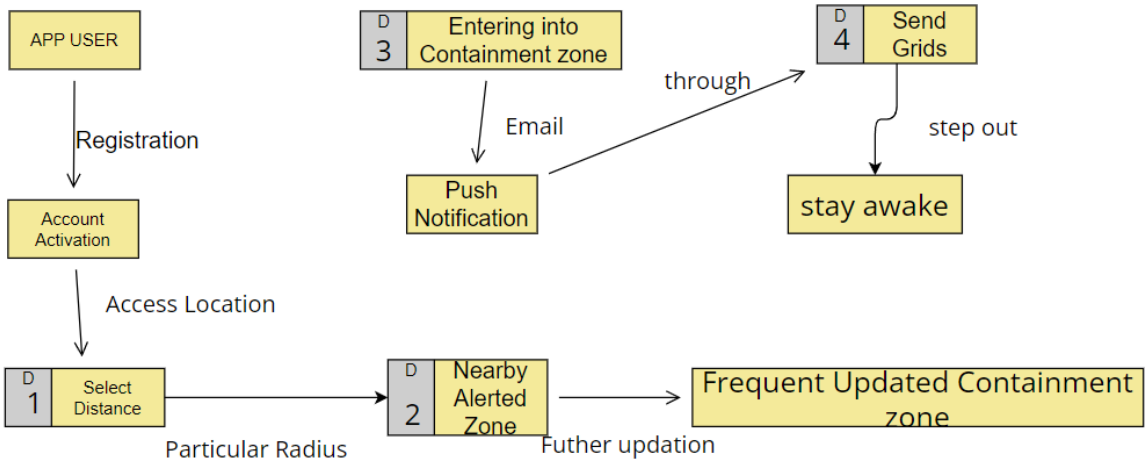
Around the epi-center (the residence of the positive case). This area of 100m radius will be. the containment zone. If required, based on the mapping of contacts and cases, the. containment zone will be refined this can be alerting by sending registered email or phone number.

**PUSH NOTIFICATION**

Push notifications are small, pop-up messages sent to a user's device by a mobile app that appear even when the app isn't open. These notifications are designed to grab attention and can convey alert messages.

**SENDGRID**

SendGrid is a cloud-based SMTP provider that allows you to send email without having to maintain email servers. SendGrid manages all of the technical details, from scaling the infrastructure to ISP outreach and reputation monitoring to whitelist services and real time analytics. If someone entered in to the alerted zone it will send the notification with the help of SendGrid



## 5.2 SOLUTION AND TECHNOLOGY ARCHITECTURE

Technology architecture associate's application components from application architecture with technology components representing software and hardware components. Its components are generally acquired in the marketplace and can be assembled and configured to constitute the enterprise's technological infrastructure. Technology architecture provides a more concrete view of the way in which application components will be realized and deployed**.**

**GUIDELINES**:

1. 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)

**COMPONENETS USED**

- **User Interface** - App user can view about the recent updated zones
- **Application Logic-1 -** The initial step of the application to access the location from the user device
- **Application Logic-2** - By the access of the location user can see the nearby containment zone by geofencing.
- **Application Logic-3 -** While entering into the containment zone the notification will push to their registered ema id
- **Database** - Admin update the frequent changes of alerted Zones for their purpose to show aware of the user
- **Cloud Database -** All the datas are push in the IBM cloud.
- **File Storage** - The files are stored in the Binary format.
- **External API-1** - They can show of their Weather conditions from their imported dependencies.
- **External API-2** - For the purpose of User registration and their convenience for better interaction to get better visuals
- **Machine Learning Model -** For the easy segregation of data in the entered datas, model

can plot to their respective columns

- **Infrastructure (Server / Cloud)** - Application Deployment on Local System / Cloud Local Server Configuration: shown the nearby zones Cloud Server Configuration: updated the newly alerted zones

**TECHNOLOGY USED ARE**

- HTML, CSS, Bootstrap,Python
- IBM Watson STT service,IBM Watson Assistant
- MySQL, NoSQL
- IBM DB2, IBM Cloudant
- IBM Block Storage or Other Storage Service or Local Filesystem
- Object Recognition Mode
- Local, Cloud Foundry, Kubernetes

**APPLICATION CHARACTERISTICS**

- **Open-Source Frameworks -** We used a Flask framework the development of python.
- **Security Implementations** - Session based authentication.

  Role management. Password hashing.
  Basic HTTP authentication.
  Token based authentication.
  Token based account activation (optional)
  Token based password recovery / resetting (optional)
  User registration (optional)
- **Scalable Architecture -** This micro-framework modularizes the entire code and let developers work on independent chunks and use them as the code base grows
- **Availability** - It does is precompute the output of an operation that usually takes a lot of time otherwise. Once this precomputed output is stored somewhere, the next user request doesn't involve rerunning all the subprocesses of that operation but instead just serving the precomputed output (instead of rerunning the same piece of expensive code
- **Performance** - Flask is the most popular micro-framework for web programming in Python. Known for its lightweight build and flexibility, it is a fan favourite amongst beginners because of how easy it is to get started with, especially for building prototypes and small-scale projects

## 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 for the product

- **Customer (Mobile use)**

**REGISTRATION**

1. As a user, I can register for the application by entering my email, password and confirming my password
2. As a user, I will receive confirmation email once I have registered for the application
3. As a user, I can register for the application through Facebook
4. As a user, I can register for the application through Gmail

**LOGIN**

1. As a user, I can log into the application by entering email & password

**DASHBOARD**

As a User, Can I manually plot the alerted zone for my convenience only

- **Customer (Web user)**

**LOCATION ACCESS**

As a User, I can view into the page, if there is any condition to access the location

**CONTAMINATED ZONES**

Is it accurately show off the alerted zone If I entered into the zone the messages are properly received through email.

- **ADMINISTRATOR**

**Frequent Updates**

Admin are necessary to updates the recent containment through their portals and these seen through the app

# CHAPTER - 6

# PROJECT PLANNING AND SCHEDULING

## 6.1 SPRINT PLANNING AND ESTIMATION

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 Product Owner ensures that the prioritized User Stories are clear, can be subjected to estimation, and they are brought to the beginning of the Product Backlog As the Scrum Team in total is responsible for the delivery of the product increment, care would be taken to select the User Stories for the Sprint based on the size of the Product Increment and the effort required for the same The size of the Product Increment is estimated in terms of User Story Points. Once the size is determined, the effort is estimated by means of the past data, i.e., effort per User Story Point called Productivity**.**

### What is Sprint Planning?

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.

### What is Sprint Estimation?

A sprint estimation shows how much effort a series of tasks require. It's based on assumptions, requirements, and dependencies of a project

- **Sprint 1**

  **Registration**

  I can register for the application by entering by email and password.

**Login**

I can log into the application by entering my email & password

- **Sprint 2**

**Dashboard**

I can view the map with the containment zones.

**Service**

**Admin**

I need to update the containment zones.

- **Sprint 3**

**Admin**

**Service**

I need to differentiate the containment zones based on the intensity of infection.

I need to provide precautionary measures when they travel.

I need to provide information about the near-by hospitals.

- **Sprint 4**

**Admin**

**Service**

I need to alert the user when they enter the containment zone through email or SMS.

I need to provide medical recommendations by collaborating with hospitals

**Data collection**

I need to store user details on the cloud

I need to collect details about covid-19 cases from verified sources.

## 6.2 Sprint Delivery Schedule

Since sprints take place over a fixed period of time, it's critical to avoid wasting time during planning and development. And this is precisely where sprint scheduling enters the equation**.** While there may be multiple project heads collaborating on a sprint, it's ultimately important to have one owner who oversees all aspects of sprint planning. Likewise, there should be one single schedule to avoid confusion and keep projects running according to a set plan. Teams often run into trouble when they create more than one schedule. This can create conflict and derail projects midway through their cycles. To ensure things stay on track, one schedule makes sense.

**Estimated Time**

Each Sprint has taken sharp 6 days to complete the assigned task.

**Sprint 1** has taken the duration of 6 days. The initial day of the sprint 1 was started on 24/10/2022 to 29/10/2022 and the code has submitted on that day 29/10/2022 in the sprint 1 folder.

**Sprint 2** has taken the duration of 6 days. The initial day of the sprint 1 was started on 30/10/2022 to 05/11/2022 and the code has submitted on that day 05/11/2022 in the sprint 2 folder.

**Sprint 3** has taken the duration of 6 days. The initial day of the sprint 1 was started on 06/11/2022 to 11/11/2022 and the code has submitted on next day 12/11/2022 in the sprint 3 folder.

**Sprint 4** has taken the duration of 6 days. The initial day of the sprint 1 was started on 12/11/2022 to 17/11/2022 and the code has submitted on next day 18/11/2022 in the sprint 4 folder.

## 6.3 Reports From JIRA

Jira reports help you stay on track of sprint goals, drill down into issues, manage workloads, identify bottlenecks, and ultimately work smarter.

And those are just the reports. There's also Jira Dashboard another Jira reporting option. These are a way of organizing your projects and tracking your achievements in a single view using dozens of built-in gadgets. Some of these gadgets consist of the same Jira reports from your boards so they're in one place, like the Created versus Resolved chart and Sprint Burndown. Read more about why JIRA reports are useful.

The important thing to remember, though, is that the true value of any report lies in the questions you're asking it. So first ask what it is you want to measure or find out, then find a report to match.

Your questions will be different at different times because they'll relate to your team's experiences in the moment. There's not much point picking one set of metrics and measuring them forever. You need to change what you measure as the work changes, or as new problems arise, so that you can drive the behaviours that will fix them. Perhaps, for instance, you're doing too much and need to get your work in progress (WIP) under control, in which case you'll want to focus on metrics that let you do that.

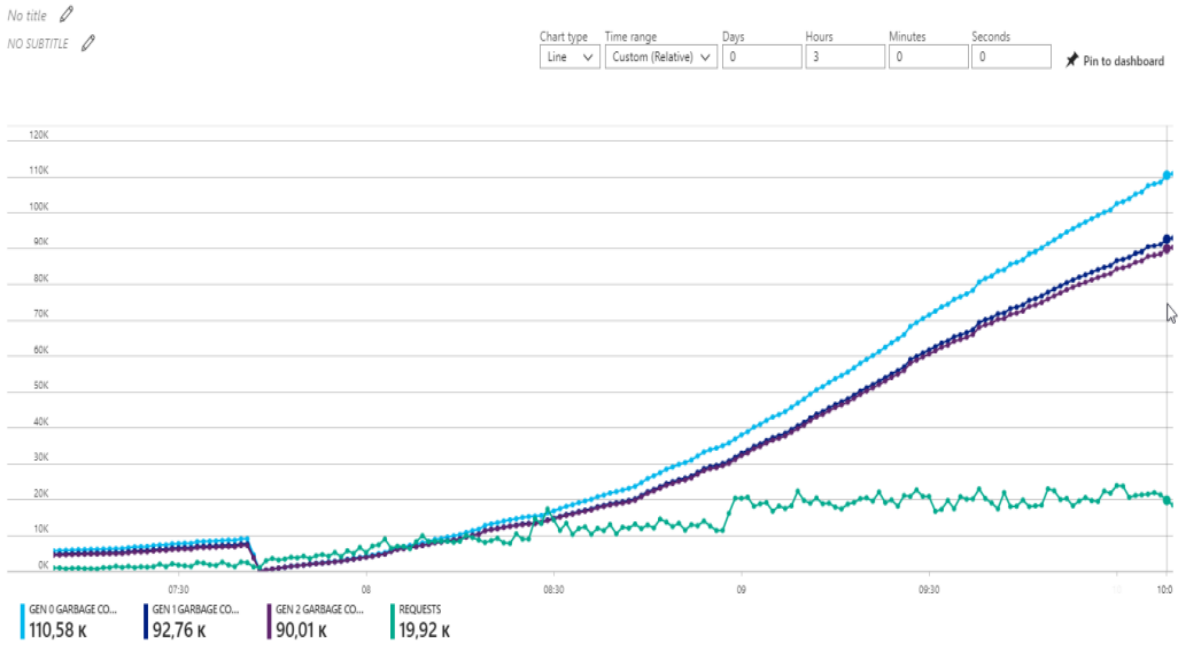
It's also worth pointing out that no one size fits all in reporting. Every team will have different needs and questions. That said, there are certainly some typical questions that most agile teams will be asking most of the time…

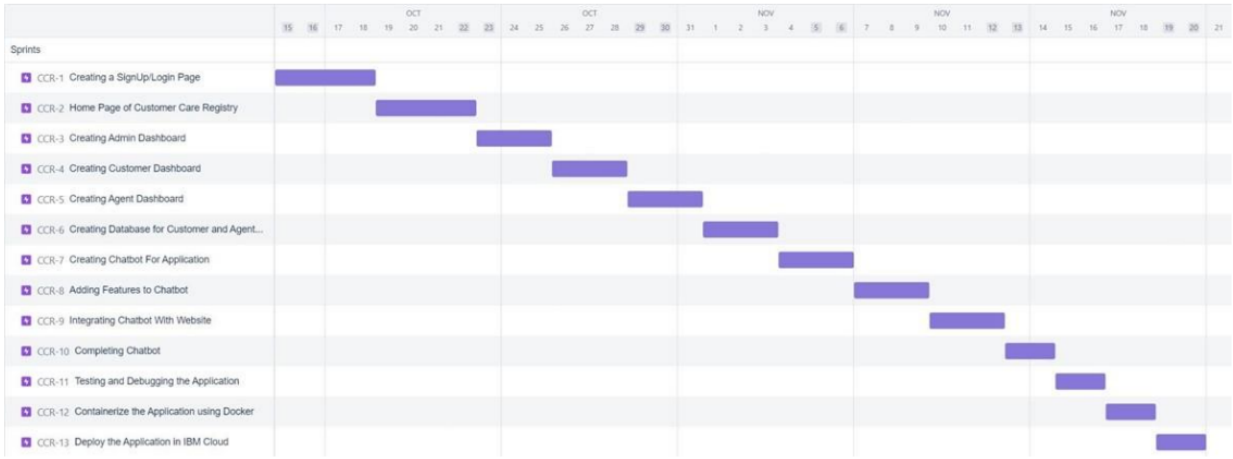
**Steps to Generating and Accessing Reports in Jira**

Jira board reports are really easy to access. You can get to them in two ways, depending on how your Jira instance is hosted.

- Option 1: Click **Projects** in the navigation bar and select the relevant project. If the project is only associated with one board, you can then click **Reports**. If the project is associated with multiple boards, you can select from the dropdown before clicking **Reports**.
- Option 2 (Server or Data Center only): Click **Boards** in the navigation bar and select the board you want to look at. Then click **Reports**.

Remember that Jira reports are board-specific and since boards are driven by saved filters, any report you run is only going to include the issues that match that board's filter. Once you've opened the Reports navigation, you can choose a report from the left panel or from the reports displayed on the screen. On this screen, you'll see reports such as the Burndown Chart, Control Chart, Velocity Chart, Cumulative Flow Diagram, Sprint Report, and more.


No title
NO SUBTITLE
Chart type
Line
Time range
Custom (Relative)
Days
0
Hours
3
Minutes
0
Seconds
0
Pin to dashboard
120K
110K
100K
90K
80K
70K
60K
50K
40K
30K
20K
10K
0K
07:30
08
08:30
09
09:30
10:0
GEN 0 GARBAGE CO...
110,58 K
GEN 1 GARBAGE CO...
92,76 K
GEN 2 GARBAGE CO...
90,01 K
REQUESTS
19,92 K


OCT
OCT
NOV
NOV
NOV
Sprints
CCR-1 Creating a SignUp/Login Page
CCR-2 Home Page of Customer Care Registry
CCR-3 Creating Admin Dashboard
CCR-4 Creating Customer Dashboard
CCR-5 Creating Agent Dashboard
CCR-6 Creating Database for Customer and Agent...
CCR-7 Creating Chatbot For Application
CCR-8 Adding Features to Chatbot
CCR-9 Integrating Chatbot With Website
CCR-10 Completing Chatbot
CCR-11 Testing and Debugging the Application
CCR-12 Containerize the Application using Docker
CCR-13 Deploy the Application in IBM Cloud

# CHAPTER - 7

# CODING AND SOLUTIONING

NEWLY UPDATED ZONE CODE

```
<!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%2
```

```
cy_0/c_fit%2cf_auto%2cq_auto%2cw_767/v1/Legal%20and%20Compliance/coronavirus4m_utz
5jt?

databtoa=eyIxNng5ljp7IngiOjAsInkiOjAsIngyIjoxMDk5LCJ5MiI6NjE3LCJ3IjoxMDk5LCJoIjo2MTd
9fQ%3

d%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,
```

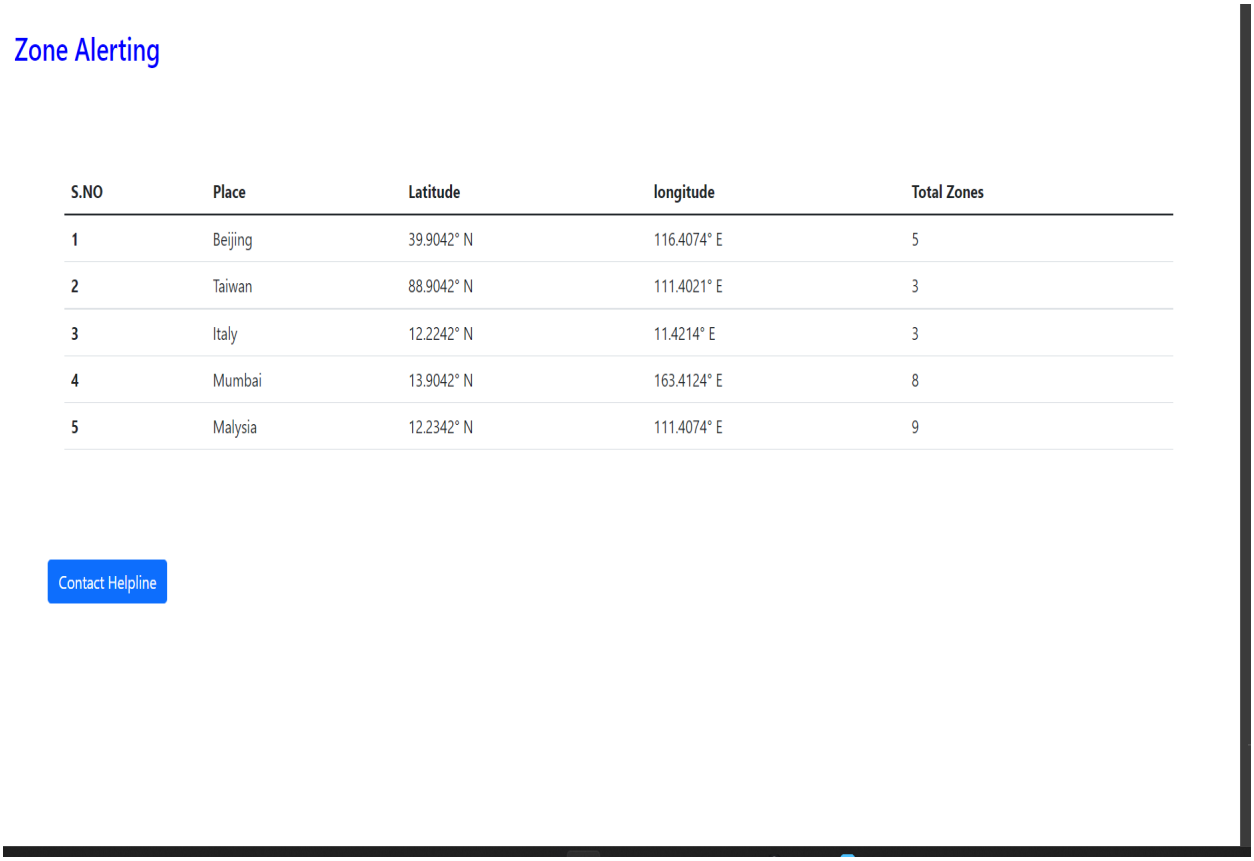
```
.login-form .group .input,
.login-form .group .button{
width:100%;
color:#fff;
display:block;
}
.login-form .group .input,
.login-form .group .button{
border:none;
padding:15px 20px;
border-radius:25px;
background:rgba(255,255,255,.1);
}
.login-form .group input[data-type="password"]{
text-security:circle;
-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>




MAIN PAGE

<!DOCTYPE html>

<html lang="en">

<head>

</head>

<body>

<style>

html, body {

background: #333;

height: 100%;

overflow: hidden;

```
 text-align: center;
}
.svg-wrapper {
 height: 60px;
margin: 0 auto;
 position: relative;

 transform: translateY(-50%);
 width: 320px;
}
.shape {
 fill: transparent;
 stroke-dasharray: 140 540;
 stroke-dashoffset: -474;
 stroke-width: 8px;
 stroke: #19f6e8;
}
.text {
 color: #fff00;
 font-family: 'Roboto Condensed';
 font-size: 22px;
 letter-spacing: 8px;
 line-height: 32px;
 position: relative;
 top: 300px;
}
@keyframes draw {
 0% {
 stroke-dasharray: 140 540;
```

```
 stroke-dashoffset: -474;
 stroke-width: 8px;
 }
 100% {
 stroke-dasharray: 760;
 stroke-dashoffset: 0;
 stroke-width: 2px;
 }
}
.svg-wrapper:hover .shape {
 -webkit-animation: 0.5s draw linear forwards;
 animation: 0.5s draw linear forwards;
}
</style>
<form action="/loc" method="POST">
<br>
<br>
<input type="text" name="mail" class="input" id="mail" style="position: absolute; left: 20%;
margin-left: 180px; width: 400px; height: 25px; background:grey ; border: 8px solid black;
top:250px" placeholder="Enter email-id" required>

<div class="svg-wrapper">

<div>
 <button type="submit" id="button" class="text" style="color:yellow;
top:300px;backgroundcolor:#99ffff"><a href="/loc"> Notify me </a></button>
<p style="color:yellow;font-size:18px;top:300px">Please provide an email to get an Reminder
messagers and make to ensure the Notify me button </p>
</div>
```

```
</form>


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

---

## Covid 19

### Symptoms of COVID-19 are variable

1. include fever
2. cough
3. headache
4. fatigue
5. breathing difficulties
6. loss of smell
7. and loss of taste.

Symptoms may begin one to fourteen days after exposure to the virus.

- At least a third of people who are infected do not develop noticeable symptoms.
- those people who develop symptoms noticeable enough to be classed as patients, most (81%) develop mild to moderate symptoms (up to mild pneumonia), while 14% develop severe symptoms (dyspnoea, hypoxia, or more th 50% lung involvement on imaging), and 5% develop critical symptoms (respiratory failure, shock, or multiorgan dysfunction)
- Older people are at a higher risk of developing severe symptoms. Some people continue to experience a range of effects (long COVID) for months after recovery, and damage to organs has been observed.
- Multi-year studies are underway to further investigate the long-term effects of the disease.

Nearby Zones

**To prevent the spread of COVID-19:**

1. Maintain a safe distance from others (at least 1 metre), even if they don't appear to be sick.
2. Wear a mask in public, especially indoors or when physical distancing is not possible.
3. Choose open, well-ventilated spaces over closed ones. Open a window if indoors.
4. Clean your hands often. Use soap and water, or an alcohol-based hand rub.
5. Get vaccinated when it's your turn. Follow local guidance about vaccination.
6. Cover your nose and mouth with your bent elbow or a tissue when you cough or sneeze.
7. Stay home if you feel unwell.

---

# CHAPTER - 8

# TESTING

Software Testing is a method to check whether the actual software product matches expected requirements and to ensure that software product is free. It involves execution of software/system components using manual or automated tools to evaluate one or more properties of interest. The purpose of software testing is to identify errors, gaps or missing requirements in contrast to actual requirements Some prefer saying Software testing definition In simple terms, Software Testing means the Verification of Application Under Test (AUT). This Software Testing course introduce testing software to the audience and justifies the importance of software testing.

Testing is important because software bugs could be expensive or even dangerous. Software bugs can potentially cause monetary and human loss, and history is full of such examples.

- In April 2015, Bloomberg terminal in London crashed due to software glitch affected more than 300,000 traders on financial markets. It forced the government to postpone a 3bn pound debt sale.
- Nissan cars recalled over 1 million cars from the market due to software failure in the airbag sensory detectors. There has been reported two accidents due to this software failure.
- Starbucks was forced to close about 60 percent of stores in the U.S and Canada due to software failure in its POS system. At one point, the store served coffee for free as they were unable to process the transaction.
- Some of Amazon’s third-party retailers saw their product price is reduced to 1p due to a software glitch. They were left with heavy losses.
- Vulnerability in Windows 10. This bug enables users to escape from security sandboxes

through a flaw in the win32k system.

- In 2015 fighter plane F-35 fell victim to a software bug, making it unable to detect targets correctly.
- China Airlines Airbus A300 crashed due to a software bug on April 26, 1994, killing 264 innocents live
- In 1985, Canada's Therac-25 radiation therapy machine malfunctioned due to software bug and delivered lethal radiation doses to patients, leaving 3 people dead and critically injuring 3 others

## 8.1 Test Cases

Test cases define how to test a system, software or an application. A test case is a singular set of actions or instructions for a tester to perform that validates a specific aspect of a product or application functionality. If the test fails, the result might be a software defect that the organization can triage A tester or QA professional typically writes test cases, which are run after the completion of a feature or the group of features that make up the release. Test cases also confirm whether the product meets its software requirements. A group of test cases is organized in a test suite, which tests a logical segment of the application, such as a specific feature.

## 8.2 User Acceptance Testing

User Acceptance Testing (UAT) is a type of testing performed by the end user or the client to verify/accept the software system before moving the software application to the production environment. UAT is done in the final phase of testing after functional, integration and system testing are done.

### Need of User Acceptance Testing

**Need of User Acceptance Testing** arises once software has undergone Unit, Integration and System testing because developers might have built software based on requirements document by their own understanding and further required changes during development may not be effectively communicated to them, so for testing whether the final product is accepted by client/end-user, user acceptance testing is needed.

- Developers code software based on requirements document which is their "own" understanding of the requirements and **may not actually be what the client needs from the software**.
- Requirements changes during the course of the project may not be communicated

effectively to the developers

| Resolution | Severity 1 | Severity 2 | Severity 3 | Severity 4 | Subtotal |
|---|---|---|---|---|---|
| By Design | 10 | 3 | 1 | 2 | 17 |
| Duplicate | 1 | 0 | 3 | 0 | 4 |
| External | 2 | 3 | 0 | 1 | 6 |
| Fixed | 11 | 2 | 4 | 20 | 40 |
| Not Reproduced | 0 | 0 | 1 | 0 | 1 |
| Skipped | 0 | 0 | 1 | 1 | 2 |
| Won't Fix | 0 | 5 | 2 | 1 | 8 |
| Totals | 24 | 13 | 12 | 25 | 78 |

# CHAPTER – 9

# RESULTS

## 9.1 Performance Metrics

Front-end Performance Metrics

When looked at an app’s performance from the end user’s perspective, the factors that come to mind are front-end metrics. These elements have to be worked upon on a priority basis as they are directly related to the end-user.

It includes

● Protection against app crashes

● Fit into screen

● Resource consumption

● Response time

Back-end Performance Metrics

Front-end and back-end performance metrics go hand in hand. This means some of the back-end performance elements directly influence the user’s experience and account for its UI/UX.

It includes

● Time to first byte

● HTTP request

● Connection and DNS lookups

# CHAPTER -10

## Advantages

- Easily to track the nearby containment zone
- To check out the frequent updates about covid cases
- To attempt the medical tests and contact nearby hospitals
- To share the alerted to zones the contact

## Disadvantages

- Drain percentage of battery is comparatively higher than other apps
- Glitches occur only in the time of updated alerted zone

# CHAPTER – 11

## CONCLUSION

The strongest and the weakest point of this App is that it is completely user based. Without a positive tested user uploading their locations or, users allowing the app to track user location or, users getting tested after being notified of probable close contact with covid positive person or, users helping relief seekers from the app's newsfeed, functionality of this app would render useless. We have deliberately kept it this way as most other proposed apps focus on major authoritative control over monitoring users, having little or no regard for privacy.

# CHAPTER – 12

## Future Scope

May be the next feature of the project to contact the Emergency Help in. It can view in the user dashboard. It help us to redirect the shortest hospital to contact easily to become recover without spreading of viruses.

# CHAPTER – 13

## Appendix

### GitHub Link

GitHub Link

### Source Code

Final Deliverable Code Link

### Demonstration Link

Project Demonstration video link