COLLEGE OF ENGINEERING GUINDY

ANNA UNIVERSITY

CONTAINMENT ZONE ALERT APPLICATION

Submitted by

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CHAPTER 1

INTRODUCTION

1.1 PROJECT OVERVIEW

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 Geofencing. 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.

1.2 PURPOSE

- The main idea is creating an app that Tracks live location of the User and alerts User when the user trespasses into the contaminated zone or stays in the containment zone .
- Location of the individual must be stored in the Database using cloud firebase database, Alerts are sent using the notification service.
- The application also notifies the users if they have entered the containment zone and uploads the user’s identification number to the online database.

CHAPTER 2

LITERATURE SURVEY

2.1 EXISTING PROBLEM

Based on the literature survey conducted, a number of observations were made.

- 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.
- Users were not able to see the containment zone in a map format and only in the table which only has the containment zone names.

2.2 REFERENCES

[1] Mallik, R., Hazarika, A. P., Ghosh Dastidar, S., Sing, D., & Bandyopadhyay, R. (2020). Development of an android application for viewing covid-19 containment zones and monitoring violators who are trespassing into it using firebase and geofencing. Transactions of the Indian National Academy of Engineering, 5(2), 163-179.

[2] Tun, Thet Hein, et al. "Impact-Driven Investing in New Mobility Enterprises: Perspectives from Kampala, Uganda, and Hyderabad, India".

[3] Mallik, Ranajoy, et al. "Development of an android application for viewing covid-19 containment zones and monitoring violators who are trespassing into it using firebase and geofencing." Transactions of the Indian National Academy of Engineering 5.2 (2020): 163-179.

[4] Lalitha, R., G. Hariharan, and N. Lokesh. "Tracking the Covid zones through geo-fencing technique." International Journal of Pervasive Computing and Communications (2020).

[5] Alanzi, Turki. "A review of mobile applications available in the app and google play stores used during the COVID-19 outbreak." Journal of multidisciplinary healthcare 14 (2021): 45

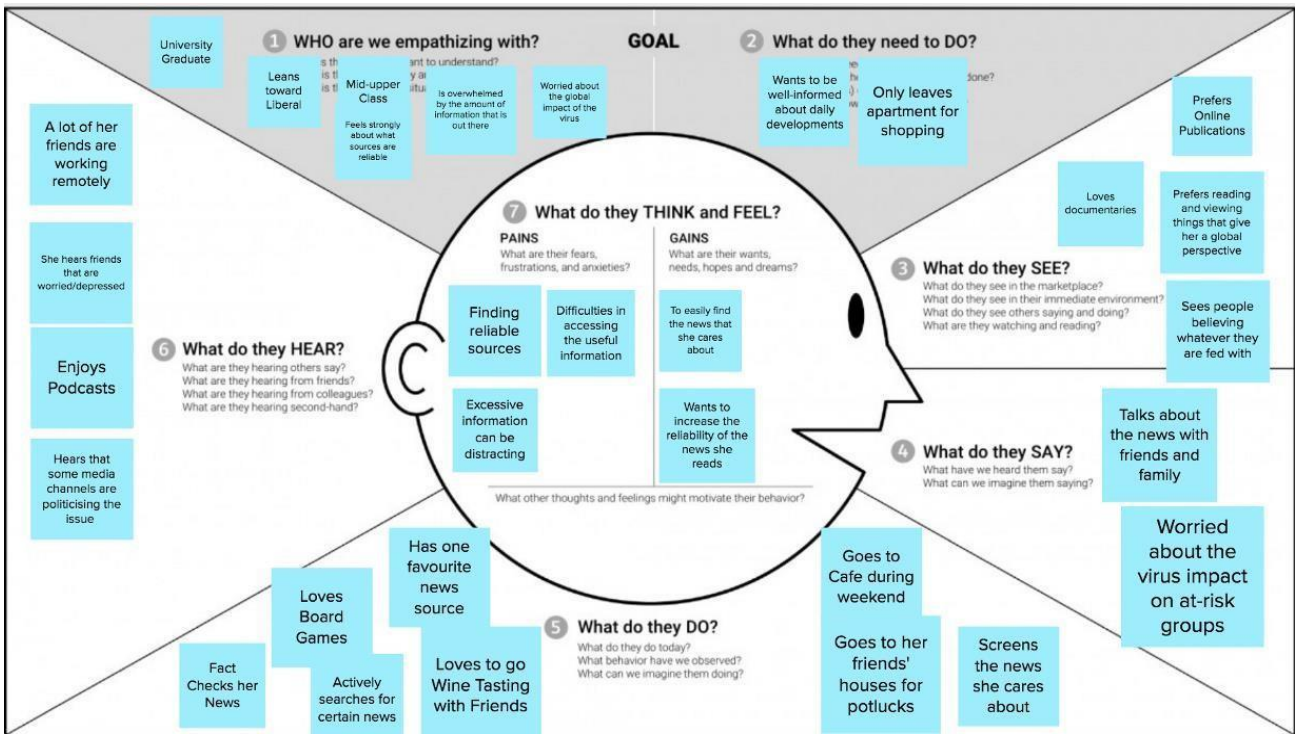
2.3 PROBLEM STATEMENT DEFINITION

To solve people's dilemma about the pandemic on the outside of their environment and giving people warning on possible danger. people are found to be the only means for restricting the community transmission. 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.

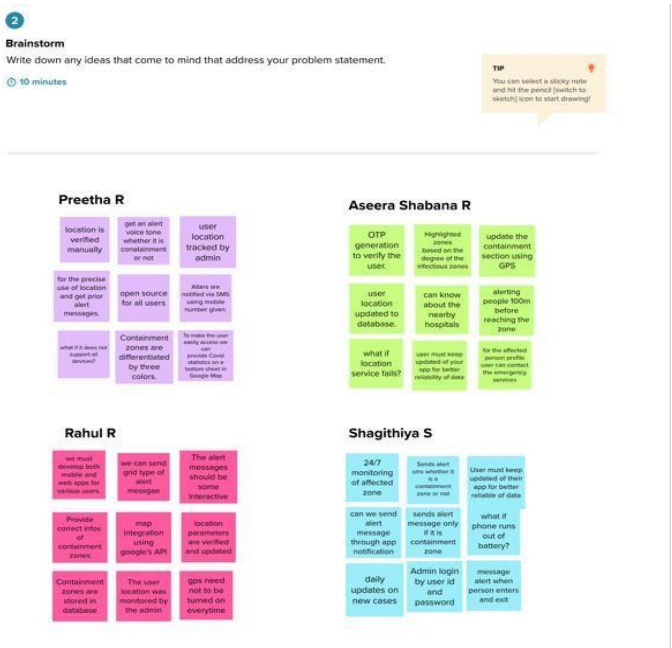
CHAPTER 3

IDEATION AND PROPOSED SOLUTION

3.1 EMPATHY MAP CANVAS



3.2 IDEATION AND BRAINSTORMING

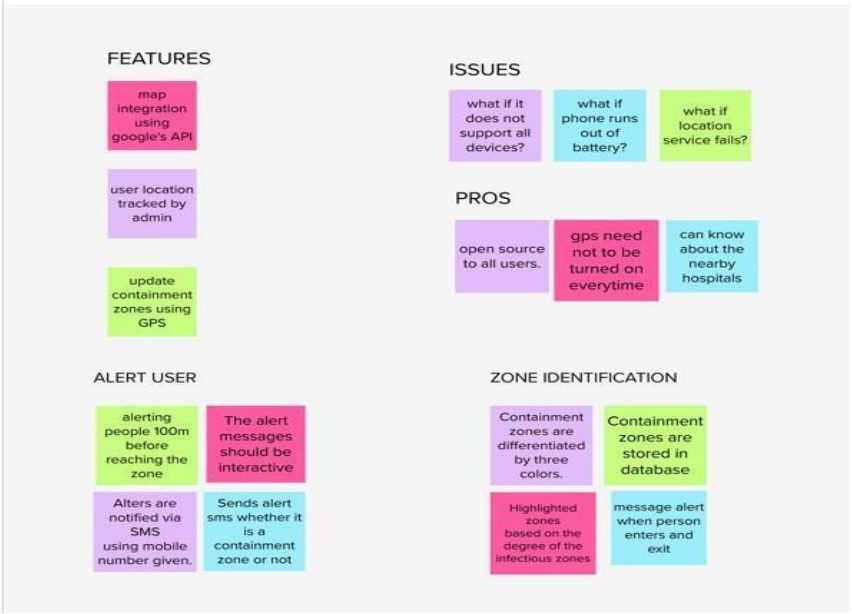


3

Group ideas

Take turns sharing your ideas while clustering similar or related notes as you go. In the last 10 minutes, give each cluster a sentence-like label. If a cluster is bigger than six sticky notes, try and see if you and break it up into smaller sub-groups.

20 minutes

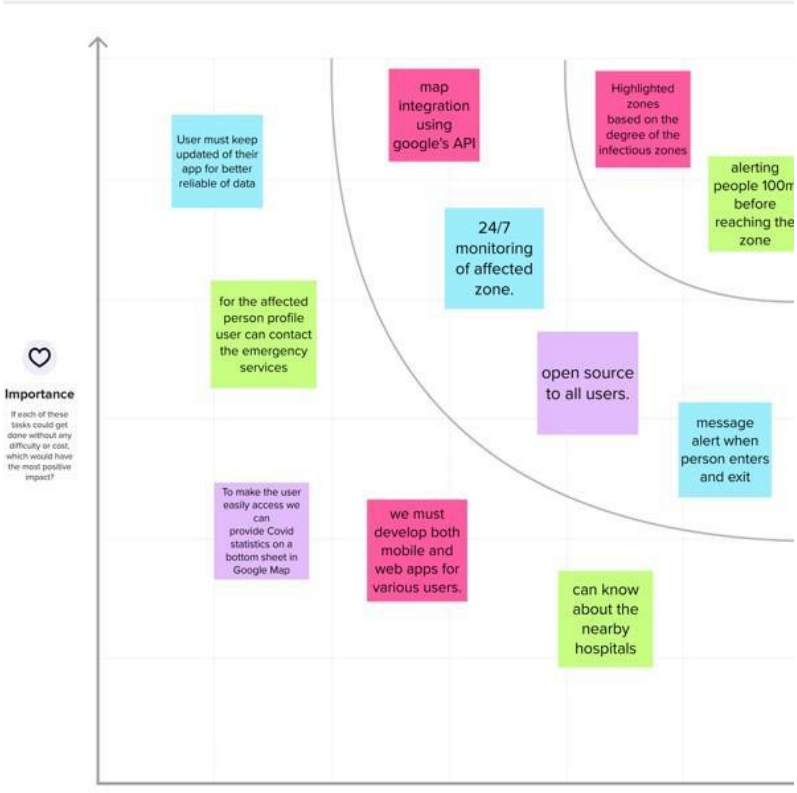


4

Prioritize

Your team should all be on the same page about what's important moving forward. Place your ideas on this grid to determine which ideas are important and which are feasible.

20 minutes

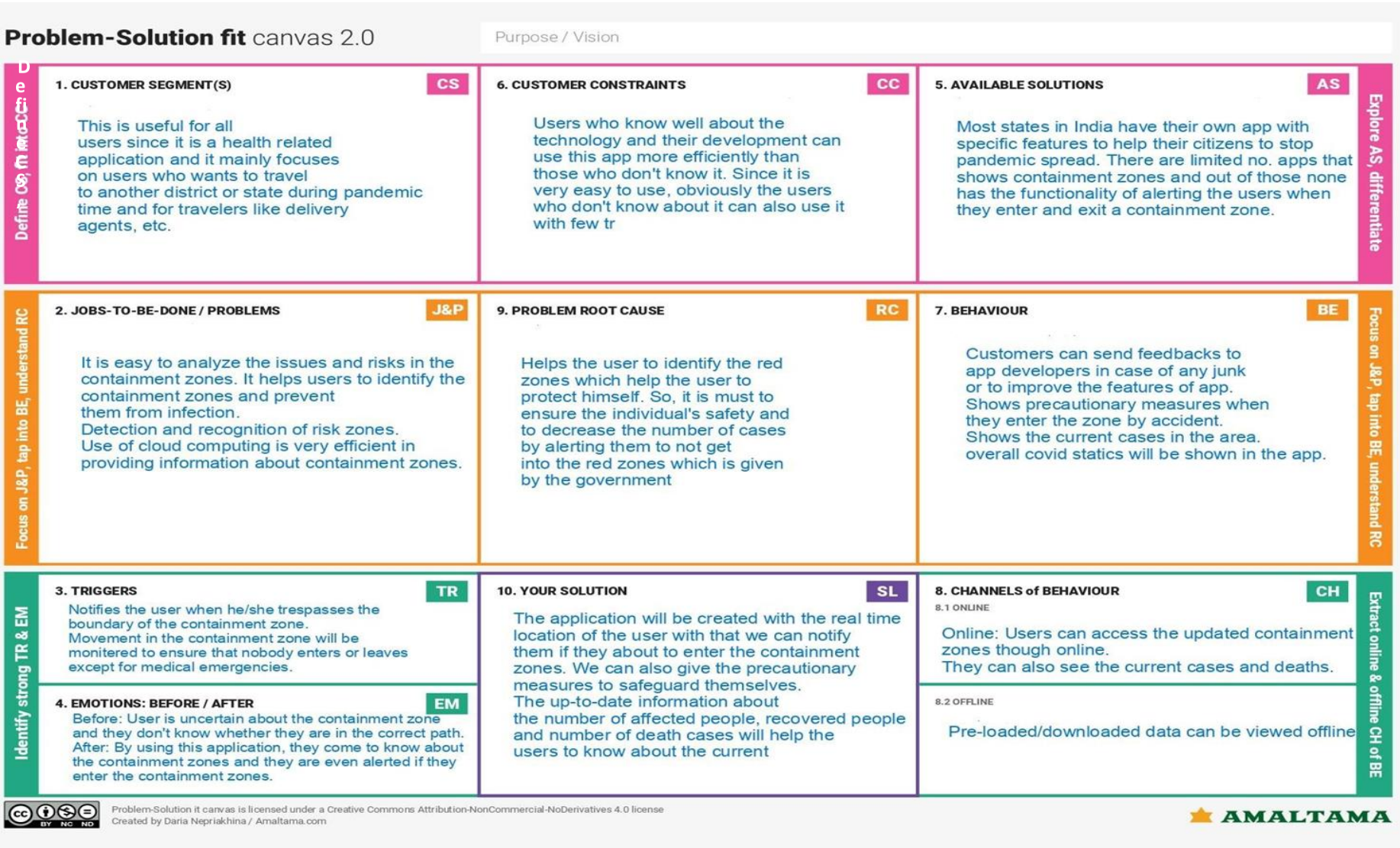


3.3 PROPOSED SOLUTION

S.No.	Parameter	Description
1.	**Problem Statement (Problem to be solved)**	To solve people's dilemma about the pandemic on the outside of their environment and giving people warning on possible danger. People are found to be the only means for restricting community transmission. 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.
2.	**Idea / Solution description**	• The main idea is creating an app that Tracks live location of the User and alerts User when the user trespasses into the contaminated zone or stays in the containment zone . • Location of the individual must be stored in the Database using cloud firebase database. Alerts are sent using the notification service. • The application also notifies the users if they have entered a containment zone and uploads the user's identification number to the online database. Features of the Application **Admin App (portal):** They should login to the app and update the containment zones locations in the portal. **User App (Mobile App):** The app should have a user registration and login. After the user logs into the app it will track the user's location and update the database with the current location.

3.	**Novelty / Uniqueness**	We have deliberately kept it the way as most other proposed apps focus on major authoritative control over monitoring users, having little or no regard for privacy. • Based on the number of cases present in the particular zone color code will be allotted for each affected zone. Users will be able to see the containment zone in a map format and not in the table which only has the containment zone names.
4.	**Social Impact / Customer Satisfaction**	• It is targeted at the layman and the daily updated content is stored in a cloud platform. • The strongest point of this application is that it is completely user based. • This application would make a big impact in reducing the covid cases as well as give people an idea about the disease and the cautionary measures against it. Provides the daily update on covid cases in that particular region with color code.
5.	**Business Model (Revenue Model)**	• Introducing a premium plan that monitors user health by connecting apps with the containment region. Our solution, once developed well, has enough possibilities to become a good product to save people against the deadly diseases.
6.	**Scalability of the Solution**	• The Application is further used for maritime or forest safety to prevent the users from entering users into the restricted areas. • Since the overall process is on cloud, the manpower and the expenditure is reduced. • In this modern world even though the covid pandemic threat is about to end there are high chance of pandemic. • So this application is very useful in the situation and we can use this application in seasonal diseases.

3.4 PROBLEM SOLUTION FIT



CHAPTER 4

REQUIREMENT ANALYSIS

4.1 FUNCTIONAL REQUIREMENTS

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	**User Registration**	Registration in the form using Phone number or Email
FR-2	**User Confirmation**	Confirmation via Email Confirmation via OTP
FR-3	**Containment Zones**	Access Google Maps via API and using Geo-fence Sketching
FR-4	**Notification Alert System**	Continuous GPS tracking and access to notification service
FR-5	**Alternate Routes**	Using Google maps service

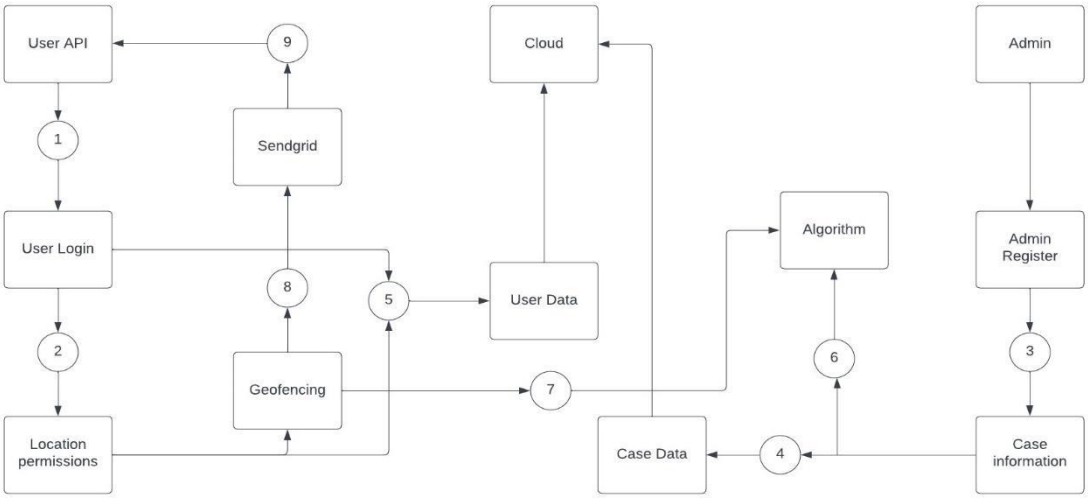
4.2 NON-FUNCTIONAL REQUIREMENTS

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	User interface is very effective to use when compared with others.
NFR-2	**Security**	The data collected from the user will be stored securely in the cloud.
NFR-3	**Reliability**	The user can trust the results from the app and navigate safely
NFR-4	**Performance**	Accurate results can be achieved due to real-time location sharing and Geofencing.
NFR-5	**Availability**	Available if the network bandwidth of the user is of good range.
NFR-6	**Scalability**	This application can be accessed from anyplace and information about the zones are up to date

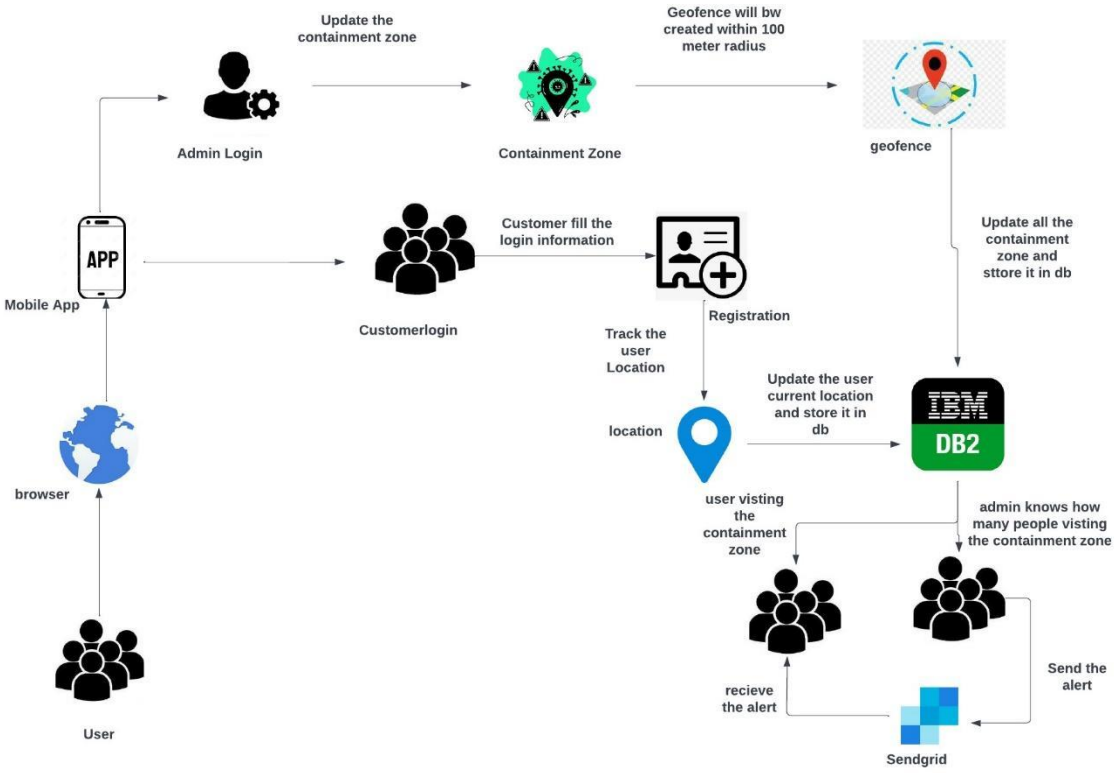
CHAPTER 5

PROJECT DESIGN

5.1 DATA FLOW DIAGRAMS



5.2 SOLUTION AND TECHNICAL ARCHITECTURE



5.3 USER STORIES

User Type	Functional Requirement nt (Epic)	User Story Num	User Story / Task	Accept-ance criteria	Priority	Release
Customer (Mobile user)	Registration	USN-1	As a user, I can register for the application by entering my email, and password and confirming my password.	I can access my account/ dashboard	High	Sprint-1
		USN-2	As a user, I will receive a confirmation email once I have registered for the application.	I can receive a confirmation email & click confirm	High	Sprint-1
		USN-3	As a user, I can register for the application through Facebook.	I can register & access the dashboard with Facebook Login	Low	Sprint-4
		USN-4	As a user, I can register for the application through Gmail.	I can register & access the dashboard with Google Login	Mediu m	Sprint-1

		USN-5	As a user, I can register for the application through Twitter.	I can register & access the dashboard with Twitter Login	Low	Sprint-4
	Login	USN-6	As a user, I can log into the application by entering my email & password	I can access it whenever I want.	High	Sprint-1
	Dashboard	USN-7	As a user, I need to give permission to access My contacts, Location and Storage.	I get access to their services.	High	Sprint-2
		USN-8	As a user, I get access to the dashboard which shows a map with marked zones .	I can see the zone information on the dashboard.	High	Sprint-2
Administrative	Services	USN-9	As an admin, I need to provide valid information about the pandemic out there.	I can get the pandemic updates out there.	High	Sprint-2
		USN-10	As an admin, I need to provide medical advice through a chatbot.	I get medicinal recommendations through a chatbot.	Medium	Sprint-3
		USN-11	As an admin, I need to provide medical recommendations by collaborating with top hospitals.	I get medical instruction through chief doctors.	low	Sprint-3

		USN-12	As an admin, I need to alert the user when they enter pandemic zones.	I got a notification when I was in the pandemic area.	Medium	Sprint-4
		USN-13	As an admin, I need to provide preventive measures when they travel through it.	I got a remedy notification when I was in the pandemic area.	High	Sprint-3
		USN-14	As an admin, I need to provide special services for premium users by giving services like monitoring health by their smart bands.	I was treated special after becoming a premium member.	Low	Sprint-4
	Data Collections	USN-15	As an admin, I need to store all the user information on the cloud	I can access my information when I needed	Medium	Sprint-4
		USN-16	As an admin, I need to collect the list of viruses & bacteria present in this world.			Sprint-4

CHAPTER 6

PROJECT PLANNING AND SCHEDULING

6.1 SPRINT PLANNING AND 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 meetings. 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. 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.

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint -1	Registration	USN-1	As a user, I can register for the application by entering my email, and password and confirming my password.	3	High	Aseera ,Preetha

Sprint -1		USN-2	As a user, I will receive a confirmation email once I have registered for the application.	2	High	Shagithiya
Sprint -4		USN-3	As a user, I can register for the application through Facebook.	2	Low	Preetha
Sprint -1		USN-4	As a user, I can register for the application through Gmail.	5	Medium	Aseera,Preetha
Sprint 4		USN-5	As a user, I can register for the application through Twitter.	2	Low	Aseera
Sprint -1	Login	USN-6	As a user, I can log into the application by entering my email & password	3	High	Rahul, Shagithiya, As eera
Sprint -2	Dashboard	USN-7	As a user, I need to give	5	High	Rahul, Shagithiya, Pr eetha

			permission to access My Contacts, Location, and Storage.			
Sprint -2		USN-8	As a user, I get access to the dashboard which shows a map with marked zones	5	High	Rahul, Preetha
Sprint -1	Registration	USN-9	As a management, I need to register my hospitals on the site.	2	high	Aseera, Shagithi ya
Sprint -1	Login	USN-10	As a management, I need to login into my dashboard with my given hospital id and password.	5	medium	Rahul, Shagithiya
Sprint -2	Dashboard	USN-11	As a management, I need to	5	high	Aseera,Rahul

			enter the case information of the patient that visits our hospital.			
Sprint -3		USN-12	As a management, I need to store all the patient information on the cloud	5	high	Shagithiya, Preetha
Sprint -2	Services	USN-13	As an admin, I need to provide valid information about the pandemic out there.	5	high	Preetha ,Rahul
Sprint -3		USN-14	As an admin, I need to provide medical advice through a chatbot.	5	medium	Aseera, Shagithi ya
Sprint -3		USN-15	As an admin, I need to	5	low	Shagithiya

			provide medical recommendations by collaborating with top hospitals.			
Sprint -4		USN-16	As an admin, I need to alert the user when they enter pandemic zones.	3	Medium	Preetha, Aseera
Sprint -3		USN-17	As an admin, I need to provide preventive measures when they travel through it.	5	high	Shagithiya, rahul
Sprint 4		USN-18	As an admin, I need to provide special services for premium users by giving services like monitoring health by	3	low	Rahul

			their smart bands.			
Sprint -4	Data collections	USN-19	As an admin, I need to store all the user information on the cloud	5	Medium	Aseera,Rahul
Sprint -4		USN-20	As an admin, I need to collect the list of viruses & bacteria present in this world.	5	High	Shagithiya, Pree th a

6.2 SPRINT DELIVERY SCHEDULE

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. In case you are unfamiliar, a sprint schedule is a document that outlines sprint planning from end to end. It is one of the first steps in the agile sprint planning process and something that requires adequate research, planning, and communication.

Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-1	20	6 Days	24 Oct 2022	29 Oct 2022	20	29 Oct 2022
Sprint-2	20	6 Days	31 Oct 2022	05 Nov 2022	20	5 Nov 2022
Sprint-3	20	6 Days	07 Nov 2022	12 Nov 2022	20	12 Nov 2022
Sprint-4	20	6 Days	14 Nov 2022	19 Nov 2022	20	19 Nov 2022

6.3 REPORTS FROM JIRA

JIRA is a software application used for issue tracking and

Project management. The tool, developed by the Australian software company Atlassian, has become widely used by agile development teams to track bugs, stories, epics, and other tasks. This is the platform's basic project-management tool, designed for non-

technical teams.Departments such as HR, marketing, finance, and operations u se the Core tool for change requests,workflow approvals, and general task ma nagement. This is the version designed for softwaredevelopment teams. Jira S oftware offers all of Core's features but also includes agile functionality.Softw are teams use this tool for bug tracking, managing basic software-development tasks, and product managemen

CHAPTER 7

CODING AND SOLUTIONING

7.1 FEATURE 1

The project aims at building an application that provides information about the containment zones of a particular region by continuously monitoring anindividual' s location. The 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 have a login to app and update the containment zones 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.

Code (home.html):

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

<head>
    <!-- basic -->
    <meta charset="utf-8">
    <meta http-equiv="X-UA-Compatible" content="IE=edge">
    <meta name="viewport" content="width=device-width, initial-scale=1">
    <!-- mobile metas -->
    <meta name="viewport" content="width=device-width, initial-scale=1">
    <meta name="viewport" content="initial-scale=1, maximum-scale=1">
    <!-- site metas -->
    <title>Home</title>
    <meta name="keywords" content="">
    <meta name="description" content="">
    <meta name="author" content="">
    <!-- bootstrap css -->
```

```
        <link rel="stylesheet" type="text/css" href="../static/css/bootstrap.min.css">
        <!-- style css -->
        <link rel="stylesheet" type="text/css" href="../static/css/style.css">
        <!-- Responsive-->
        <link rel="stylesheet" href="../static/css/responsive.css">
        <!-- fevicon -->
        <link rel="icon" href="../static/images/fevicon.png" type="image/gif" />
        <!-- Scrollbar Custom CSS -->
        <link rel="stylesheet" href="../static/css/jquery.mCustomScrollbar.min.css">
        <!-- Tweaks for older IEs-->
        <link rel="stylesheet" href="https://netdna.bootstrapcdn.com/font-awesome/4.0.3/css/font-awesome.css">
        <!-- owl stylesheets -->
        <link rel="stylesheet" href="../static/css/owl.carousel.min.css">
        <link rel="stylesheet" href="../static/css/owl.theme.default.min.css">
        <link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/fancybox/2.1.5/jquery.fancybox.min.css"
            media="screen">
    </head>

    <body>
        <!--header section start -->
        <div class="header_section">
            <div class="container-fluid">
                <div class="main">
                    <div class="logo"><a href="/"><img src="../static/images/logo.png"></a>
                        <a href="/" style="color: aliceblue; font-size: x-large; font-weight: bold;">CONTAINMENT ALERT</a>
                    </div>
                    <div class="menu_text">
                        <ul>
                            <div class="togle_">
                                <div class="menu_main">
                                    <ul>
                                        <li><a href="logout"><i class="fa fa-sign-out" aria-hidden="true"></i></a></li>
                                        <!-- <li>
                                    <div id="useracnt" class="useracnt">
                                        <p>{{name}}</p>
```

```
                        </div>
                    </li> -->
                        <li>
                            <!-- <a href="#"><i class="fa fa-user" aria-hidden="true"></i></a> -->
                            <p style="font-weight: bold; margin-top:-0.1px;">{{name}}</p>
                        </li>
                    </ul>
                </div>
            </div>
            <div id="myNav" class="overlay">
                <a href="javascript:void(0)" class="closebtn" onclick="closeNav()">&times;</a>
                <div class="overlay-content">
                    <a href="/">Home</a>
                    <a href="user_map">Covid Zones</a>
                    <a href="check">Check the Covid zone</a>
                    <a href="data">Data</a>
                    <a href="success">Management</a>
                    <a href="about">About</a>

                </div>
            </div>
            <span class="navbar-toggler-icon"></span>
            <span onclick="openNav()"><img src="../static/images/toogle-icon.png"
                    class="toggle_menu"></span>
            <span onclick="openNav()"><img src="../static/images/toogle-icon1.png"
                    class="toggle_menu_1"></span>
        </ul>
    </div>
</div>
</div>
<!-- banner section start -->
<div class="banner_section layout_padding">
    <div class="container">
        <div id="my_slider" class="carousel slide" data-ride="carousel">
            <div class="carousel-inner">
                <div class="carousel-item active">
                    <div class="row">
```

```
                        <div class="col-md-6">
                            <div class="container">
                                <h1 class="banner_taital">BE CAUTIOUS!!!</h1>
                                <p class="banner_text">Prevent Yourself from entering into the Containment zone.
                                    Enable your
                                    location to get notified about the covid zones available nearby.</p>
                                <div class="more_bt" style="width: 50%; color: aliceblue; cursor: pointer;"><a
                                        href="check">Check your Location</a>
                                    <!-- <p id="demo"></p> -->
                                </div>
                            </div>
                        </div>
                        <div class="col-md-6">
                            <div class="banner_img"><img src="../static/images/banner-img.jpg"></div>
                        </div>
                    </div>
                </div>
                <div class="carousel-item">
                    <div class="row">
                        <div class="col-md-6">
                            <div class="container">
                                <h1 class="banner_taital">Get Medical Care early</h1>
                                <p class="banner_text">Start your treatment if you are more likely to get
                                    symptoms of
                                    covid-19 and Isolate yourself from other people!</p>
                                <div class="more_bt"><a
                                        href="https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html">Read
                                        More</a></div>
                            </div>
                        </div>
                        <div class="col-md-6">
                            <div class="banner_img"><img src="../static/images/home 7.jpg"></div>
```

```
                        </div>
                    </div>
                </div>
                <div class="carousel-item">
                    <div class="row">
                        <div class="col-md-6">
                            <div class="container">
                                <h1 class="banner_taital">Containment
<br>zone map</h1>
                                <p class="banner_text">Containment activities
are undertaken in a confined area
                                    to prevent
                                    infection from
                                    getting established and prevent its spread
outside the area.</p>
                                <div class="more_bt"><a href="user_map">Zone
Map</a></div>
                            </div>
                        </div>
                        <div class="col-md-6">
                            <div class="banner_img"><img
src="../static/images/home 8.jpg"></div>
                        </div>
                    </div>
                </div>
                <a class="carousel-control-prev" href="#my_slider"
role="button" data-slide="prev">
                    <i class="fa fa-angle-left"></i>
                </a>
                <a class="carousel-control-next" href="#my_slider"
role="button" data-slide="next">
                    <i class="fa fa-angle-right"></i>
                </a>
            </div>
        </div>
        <!-- banner section end -->
    </div>
    <!-- header section end -->
    <!-- protect section start -->
    <div class="protect_section layout_padding">
        <div class="container">
```

```
            <div class="row">
               <div class="col-sm-12">
                  <h1 class="protect_taital">Learn to Protect Yourself</h1>
                  <p class="protect_text">If you have a fever, cough and difficulty breathing, seek medical attention.
                     Call
                     in advance so your healthcare provider can direct you to the right health facility. This
                     protects you
                     and prevents the spread of viruses and other infections.</p>
               </div>
            </div>
            <div class="protect_section_2 layout_padding">
               <div class="row">
                  <div class="col-md-6">
                     <h1 class="hands_text"><a href="#">Wash your <br>hands frequently</a></h1>
                     <h1 class="hands_text_2"><a href="#">Maintain social <br>distancing</a></h1>
                     <h1 class="hands_text"><a href="#">Avoid touching eyes,<br>nose and mouth</a></h1>
                  </div>
                  <div class="col-md-6">
                     <div class="image_2"><img src="../static/images/img-2.png"></div>
                  </div>
               </div>
            </div>
         </div>
         <!-- protect section end -->
         <!-- about section start -->
         <div class="about_section layout_padding">
            <div class="container">
               <div class="row">
                  <div class="col-md-6">
                     <div class="about_img"><img src="../static/images/img-1.jpg"></div>
                  </div>
                  <div class="col-md-6">
                     <h1 class="about_taital">what it is Coronavirus?</span></h1>
                     <p class="about_text">Coronavirus disease (COVID-19) is an
```

```
infectious disease caused by the
                    SARS-CoV-2
                    virus.

                    Most people infected with the virus will experience mild to
moderate respiratory illness and
                    recover
                    without requiring special treatment. </p>
                  <div  class="read_bt"><a  href="https://www.who.int/health-
topics/coronavirus#tab=tab_1">Read More</a>
                  </div>
                </div>
              </div>
            </div>
          </div>
          <!-- about section end -->
          <!-- doctor section start -->
          <div class="doctors_section layout_padding">
            <div class="container-fluid">
              <div class="row">
                <div class="col-sm-12">
                  <div class="taital_main">
                    <div class="taital_left">
                      <div class="play_icon"><img src="../static/images/play-
icon.png"></div>
                    </div>
                    <div class="taital_right">
                      <h1 class="doctor_taital">What doctors say..</h1>
                      <p class="doctor_text">In the fight against coronavirus,
the brave medical army stands
                        strong with
                        thermometers, stethoscopes, and ventilators as their
weapons. Not to forget, medical
                        researchers
                        are working day in and night out against all odds,
hoping to find the antidote to the
                        disease.
                      </p>
                      <div class="readmore_bt"><a
                          href="https://www.ama-assn.org/delivering-
care/public-health/8-coronavirus-tips-doctors-wish-patients-would-
follow">Covid
                        Advice</a></div>
```

```
                    </div>
                  </div>
                </div>
              </div>
            </div>
          </div>
          <!-- doctor section end -->
          <!-- news section start -->
          <div class="news_section layout_padding">
            <div class="container">
              <div id="main_slider" class="carousel slide" data-ride="carousel">
                <div class="carousel-inner">
                  <div class="carousel-item active">
                    <h1 class="news_taital">Latest News</h1>
                    <p class="news_text">Philippines: Local health workers champion COVID-19 safety on remote
                      islands</p>
                    <div class="news_section_2 layout_padding">
                      <div class="box_main">
                        <div class="image_1"><img src="../static/images/co4.jpg"></div>
                        <h2 class="design_text">Local health workers champion COVID-19 safety on remote
                          islands</h2>
                        <p class="lorem_text">Philippines: Local health workers champion COVID-19 safety on
                          remote
                          islands.People on a remote island in the Philippines have enhanced their defences
                          against
                          COVID-19,
                          with the help of a civil society organization, local government units, local health
                          care
                          workers
                          and the World Health Organization (WHO).</p>
                        <div class="read_btn"><a href="#">Read More</a></div>
                      </div>
                    </div>
                  </div>
                  <div class="carousel-item">
                    <h1 class="news_taital">Latest News</h1>
```

```
                    <p class="news_text">Tuvalu responds to the country’s first
community transmission of COVID-19
                       .</p>
                    <div class="news_section_2 layout_padding">
                       <div class="box_main">
                          <div                    class="image_1"><img
src="../static/images/co1.jpg"></div>
                          <h2 class="design_text">first community transmission
of COVID-19</h2>
                          <p class="lorem_text">Tuvalu responds to the
country’s first community transmission of
                             COVID-19
                             .After more than two-and-a-half years without any
community transmission of
                             COVID-19, Tuvalu
                             is now responding to its first community cases since
the beginning of the pandemic.
                             The World
                             Health Organization (WHO) and partners are
supporting the Pacific island nation’s
                             emergency
                             response. </p>
                          <div class="read_btn"><a href="#">Read
More</a></div>
                       </div>
                    </div>
                 </div>
                 <div class="carousel-item">
                    <h1 class="news_taital">Latest News</h1>
                    <p class="news_text">United States Provides Pediatric
Pfizer Vaccines to Protect Children from
                       COVID-19 </p>
                    <div class="news_section_2 layout_padding">
                       <div class="box_main">
                          <div                    class="image_1"><img
src="../static/images/co2.jpg"></div>
                          <h2 class="design_text">Protect Children from
COVID-19</h2>
                          <p class="lorem_text">United States Provides
Pediatric Pfizer Vaccines to Protect
                             Children from
                             COVID-19.
                             The latest contribution of 201,600 doses of pediatric
```

```
Pfizer COVID-19 vaccines were
                                provided
                                by the United States Government through the
COVAX Facility.</p>
                              <div class="read_btn"><a href="#">Read
More</a></div>
                            </div>
                          </div>
                        </div>
                      </div>
                      <a class="carousel-control-prev" href="#main_slider"
role="button" data-slide="prev">
                        <i class="fa fa-angle-left"></i>
                      </a>
                      <a class="carousel-control-next" href="#main_slider"
role="button" data-slide="next">
                        <i class="fa fa-angle-right"></i>
                      </a>
                    </div>
                  </div>
                </div>
                </div>
                <!-- news section end -->
                <!-- update section start -->

                <!-- <div class="update_section">
                  <div class="container">
                    <h1 class="update_taital">Get Every Update.... </h1>
                    <form action="/action_page.php">
                      <div class="form-group">
                        <textarea class="update_mail" placeholder="Massage" rows="5"
id="comment" name="Massage"></textarea>
                      </div>
                      <div class="subscribe_bt"><a href="#">Subscribe Now</a></div>
                    </form>
                  </div>
                </div> -->
                <!-- update section end -->
                <!-- footer section start -->
                <div class="footer_section layout_padding">
                  <div class="container">
                    <div class="footer_section_2">
                      <div class="row">
```

```
                    <div class="col-lg-3 col-sm-6">
                        <h2 class="useful_text">Resources</h2>
                        <div class="footer_menu">
                            <ul>
                                <li><a href="#">Update the covid zones</a></li>
                                <li><a href="#">Medical Advice</a></li>
                                <li><a href="#">Alert Users</a></li>
                                <li><a href="#">Protection</a></li>
                                <li><a href="#">Care</a></li>
                            </ul>
                        </div>
                    </div>
                    <div class="col-lg-3 col-sm-6">
                        <h2 class="useful_text">About</h2>
                        <p class="footer_text">We are from Department of Information Science and Technology at College Of
                            Engineering,Guindy</p>
                    </div>
                    <div class="col-lg-3 col-sm-6">
                        <h2 class="useful_text">Contact Us</h2>
                        <div class="location_text">
                            <ul>
                                <li>
                                    <a href="#"><i class="fa fa-map-marker" aria-hidden="true"></i>
                                        <span class="padding_15">Chennai</span></a>
                                </li>
                                <li>
                                    <a href="#"><i class="fa fa-phone" aria-hidden="true"></i>
                                        <span class="padding_15">Call +91 9870974560</span></a>
                                </li>
                                <li>
                                    <a href="#"><i class="fa fa-envelope" aria-hidden="true"></i>
                                        <span class="padding_15">sample@gmail.com</span></a>
                                </li>
                            </ul>
                        </div>
                    </div>
                    <div class="col-lg-3 col-sm-6">
```

```
                        <h2 class="useful_text">countrys</h2>
                        <div  class="map_image"><img  src="../static/images/map-
bg.png"></div>
                    </div>
                </div>
            </div>
        </div>
        <!-- footer section end -->

        <!-- Javascript files-->
        <script src="../static/js/jquery.min.js"></script>
        <script src="../static/js/popper.min.js"></script>
        <script src="../static/js/bootstrap.bundle.min.js"></script>
        <script src="../static/js/jquery-3.0.0.min.js"></script>
        <script src="../static/js/plugin.js"></script>
        <!-- sidebar -->
        <script
src="../static/js/jquery.mCustomScrollbar.concat.min.js"></script>
        <script src="../static/js/custom.js"></script>
        <!-- javascript -->
        <script src="../static/js/owl.carousel.js"></script>
        <script
src="https:cdnjs.cloudflare.com/ajax/libs/fancybox/2.1.5/jquery.fancybox.min.
js"></script>
        <script>
            $(document).ready(function () {
                $(".fancybox").fancybox({
                    openEffect: "none",
                    closeEffect: "none"
                });

                $(".zoom").hover(function () {

                    $(this).addClass('transition');
                }, function () {

                    $(this).removeClass('transition');
                });
            });
        </script>
        <script>
            function openNav() {
```

```
        document.getElementById("myNav").style.width = "100%";
    }
    function closeNav() {
        document.getElementById("myNav").style.width = "0%";
    }
</script>
<script>
    var x = document.getElementById("demo");

    function getLocation() {
        if (navigator.geolocation) {
            navigator.geolocation.getCurrentPosition(showPosition);
        } else {
            x.innerHTML = "Geolocation is not supported by this browser.";
        }
    }
    var a=position.coords.latitude;
    var b=position.coords.longitude

    function showPosition(position) {
        x.innerHTML = "Latitude: " + position.coords.latitude +
            "<br>Longitude: " + position.coords.longitude;
    }
</script>

</body>

</html>
```

7.2 FEATURE 2

User App (Mobile App): The app should have user registration and login. After the user logged into the app it will track the user location and update the database with the current location. If the user is visiting the containment zone he will get an alert notification.

Code (registration.html) :

```
<!DOCTYPE html>
<html lang="en">
<head>
   <meta charset="UTF-8">
   <meta http-equiv="X-UA-Compatible" content="IE=edge">
   <meta name="viewport" content="width=device-width, initial-
        scale=1.0">
   <link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/font-
        awesome/4.7.0/css/font-awesome.min.css">
   <link rel="stylesheet"
        href="https://cdnjs.cloudflare.com/ajax/libs/jquery/3.2.1/jquery.m
        in.js">
   <link rel="stylesheet"
        href="https://stackpath.bootstrapcdn.com/bootstrap/4.3.1/js/bootst
        rap.bundle.min.js">
   <link rel="stylesheet"
        href="https://stackpath.bootstrapcdn.com/bootstrap/4.3.1/css/boot
        strap.min.css">
   <link rel="stylesheet" href="https://contzone-bucket.s3.jp-tok.cloud-
        object-storage.appdomain.cloud/AuthenticateStyle.css">
   <title>Register</title>

</head>
<body>
   <div class="container-fluid px-1 px-md-5 px-lg-1 px-xl-5 py-5 mx-auto">
      <div class="card card0 border-0">
         <div class="row d-flex">
            <div class="col-lg-6">
               <div class="card1 pb-5">
                  <div class="row px-3 justify-content-center mt-4 mb-5
        border-line">
                     <img src="https://contzone-bucket.s3.jp-tok.cloud-object-
```

```
storage.appdomain.cloud/reg.png" class="regimage">
        </div>
    </div>
</div>
<div class="col-lg-6">
    <form class="card2 card border-0 px-4 py-5" method="post" action="/register">
        <div class="regist">
            <h1>Register Here</h1>
        </div>
        <div class="row px-3 mb-4">
            <div class="line"></div>
            <div class="line"></div>
        </div>
        <div class="row px-3">
            <label class="mb-1"><h6 class="mb-0 text-sm">Username</h6></label>
            <input class="mb-4" type="text" name="name" placeholder="Enter a username">
        </div>
        <div class="row px-3">
            <label class="mb-1"><h6 class="mb-0 text-sm">Email Address</h6></label>
            <input class="mb-4" type="text" name="email" placeholder="Enter a valid email address">
        </div>
        <div class="row px-3">
            <label class="mb-1"><h6 class="mb-0 text-sm">Password</h6></label>
            <input type="password" name="password" placeholder="Enter password">
        </div>
        <div class="row px-3">
            <label class="mb-1"><h6 class="mb-0 text-sm">Confirm Password</h6></label>
            <input type="password" name="cpassword" placeholder="Enter password">
        </div>
        <div class="row px-3 mb-4">
            <div class="custom-control custom-checkbox custom-control-inline">
                <input id="chk1" type="checkbox" name="chk" class="custom-control-input">
```

```
                    <label for="chk1" class="custom-control-label text-sm">Remember me</label>
                </div>
                <!-- <a href="#" class="ml-auto mb-0 text-sm">Forgot Password?</a> -->
            </div>
            <div class="row mb-3 px-3">
                <button type="submit" class="btn btn-blue text-center">Register</button>
            </div>
            <div class="row mb-4 px-3">
                <small class="font-weight-bold">I already have an account? <a class="text-danger " href="login">Login</a></small>
            </div>
        </form>
    </div>
</div>
<div class="bg-blue py-4">
    <div class="row px-3">
        <small class="ml-4 ml-sm-5 mb-2">Containment Zone Detection</small>
        <div class="err"> {{error}}</div>
        <div class="success"> {{success}}</div>
        <div class="social-contact ml-4 ml-sm-auto">
            <span class="fa fa-facebook mr-4 text-sm"></span>
            <span class="fa fa-google-plus mr-4 text-sm"></span>
            <span class="fa fa-linkedin mr-4 text-sm"></span>
            <span class="fa fa-twitter mr-4 mr-sm-5 text-sm"></span>
        </div>
    </div>
</div>
</div>

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

7.3 DATABASE SCHEMA (IF APPLICABLE)

The user logs in after the authentication done by google firebase authentication. User fetches data from firebase database or is redirected to corresponding google drive folders. Notifications are triggered on entering into the containment region which is facilitated using notification manager in firebase. Static notifications are enabled with the help of firebase cloud messaging service, which also helps the admin to see various analytics. In-app messaging services are also added to focus on more important issues on opening the application.

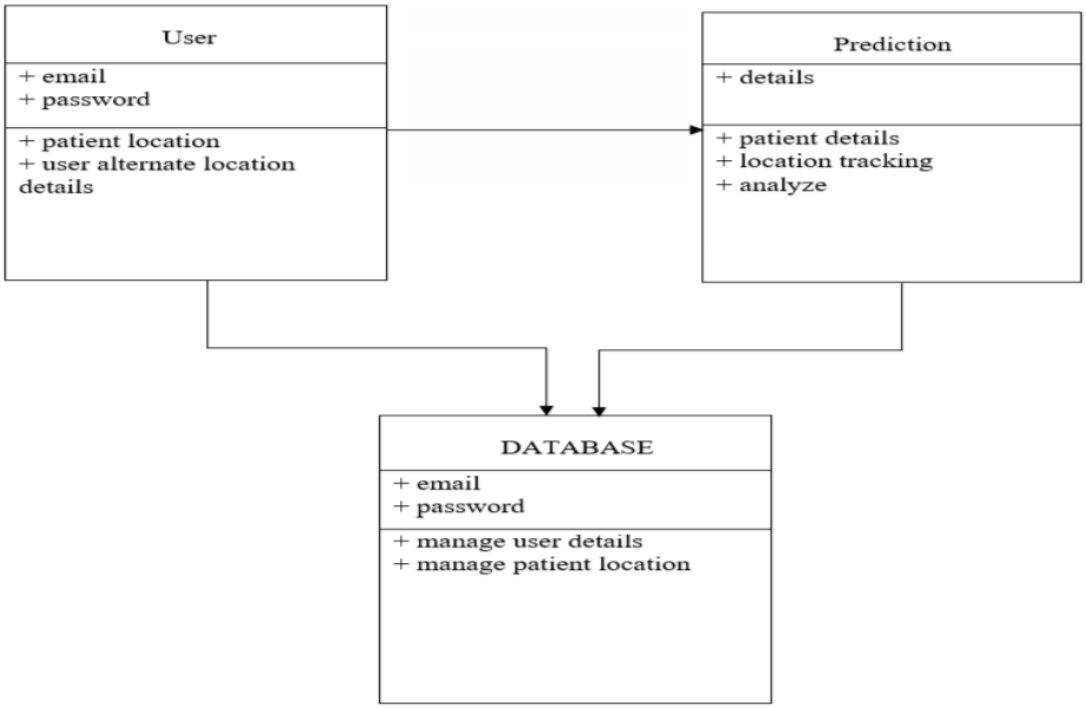


Figure 7.1: Database Schema

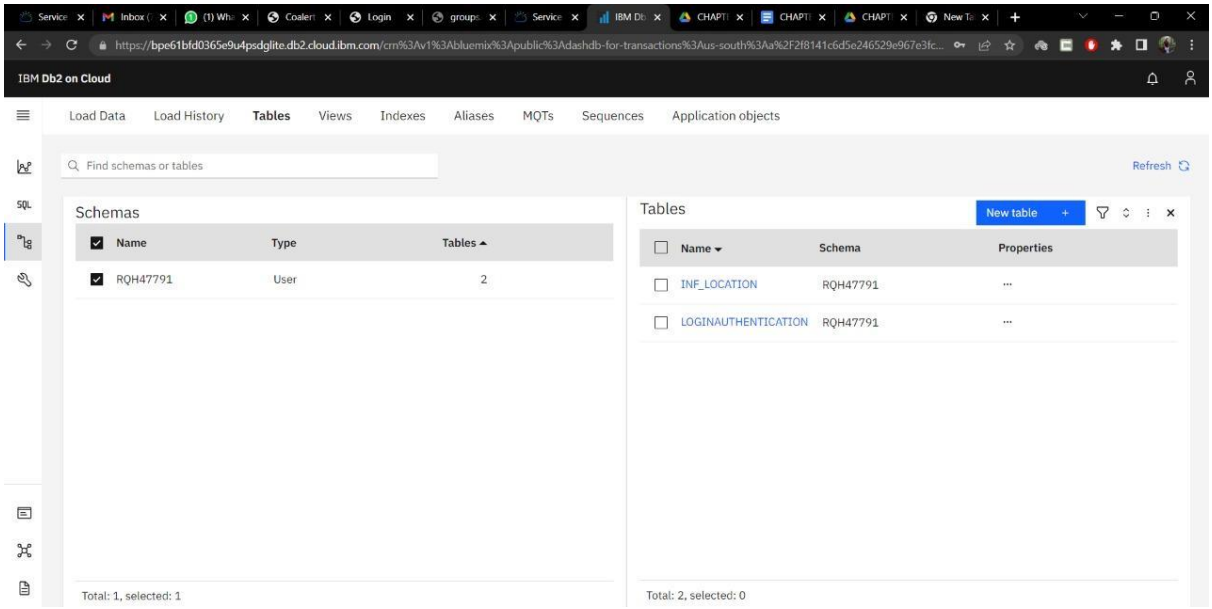


Figure 7.2

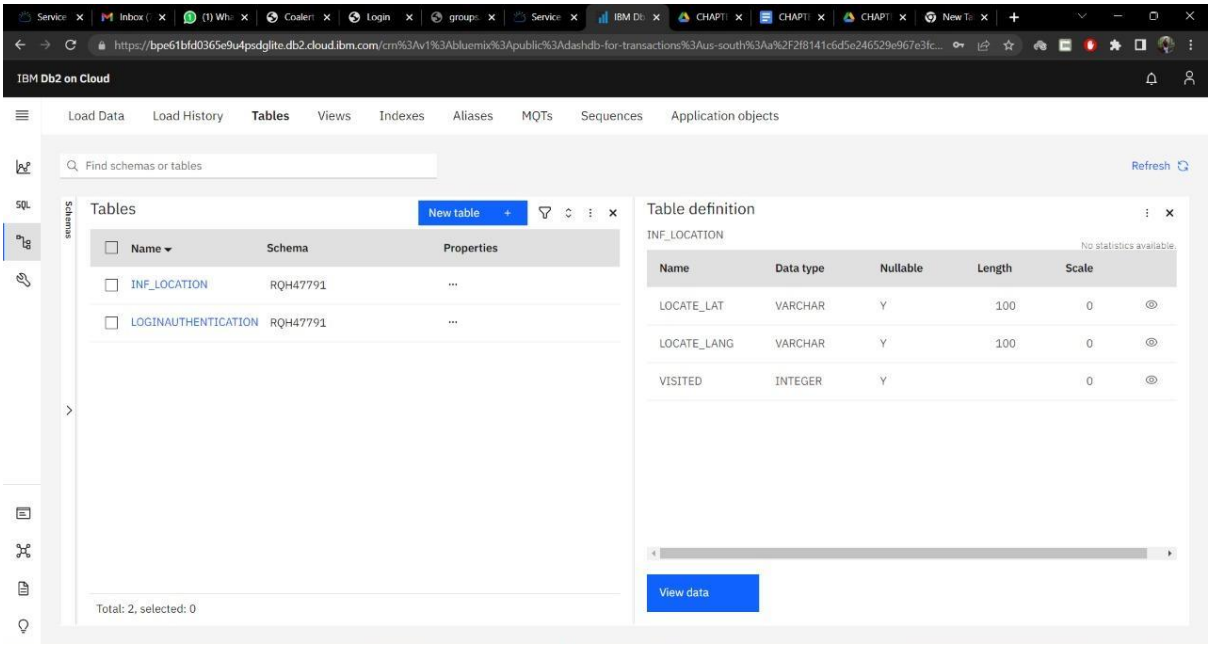


Figure 7.3

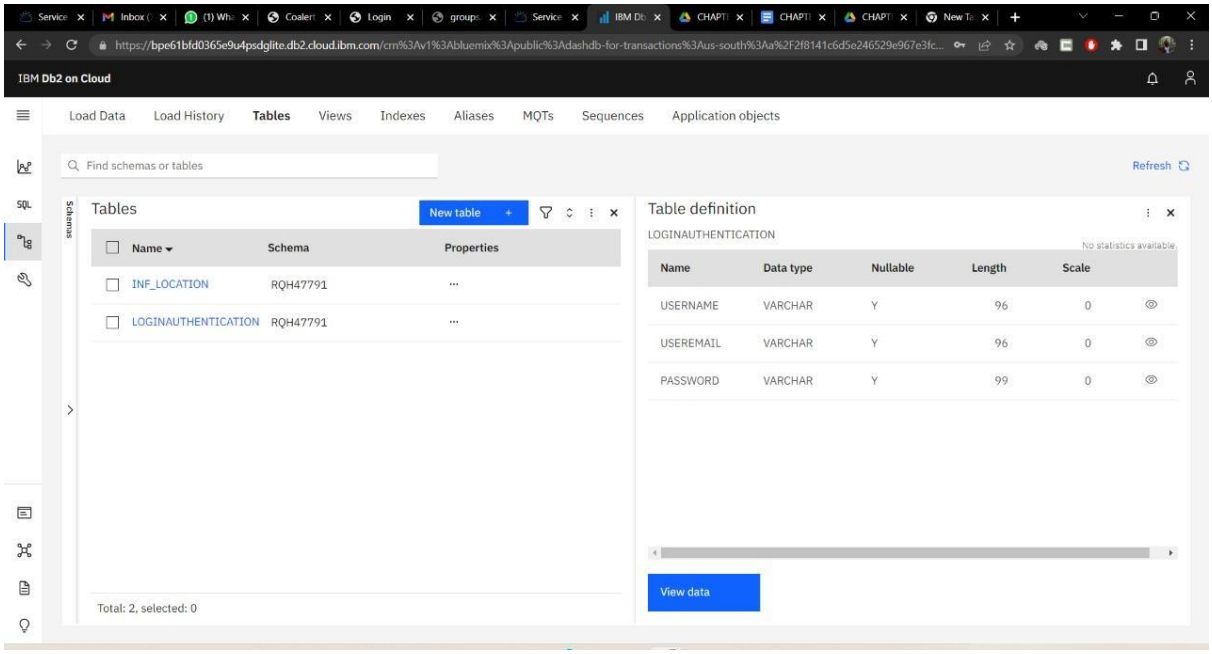


Figure 7.4

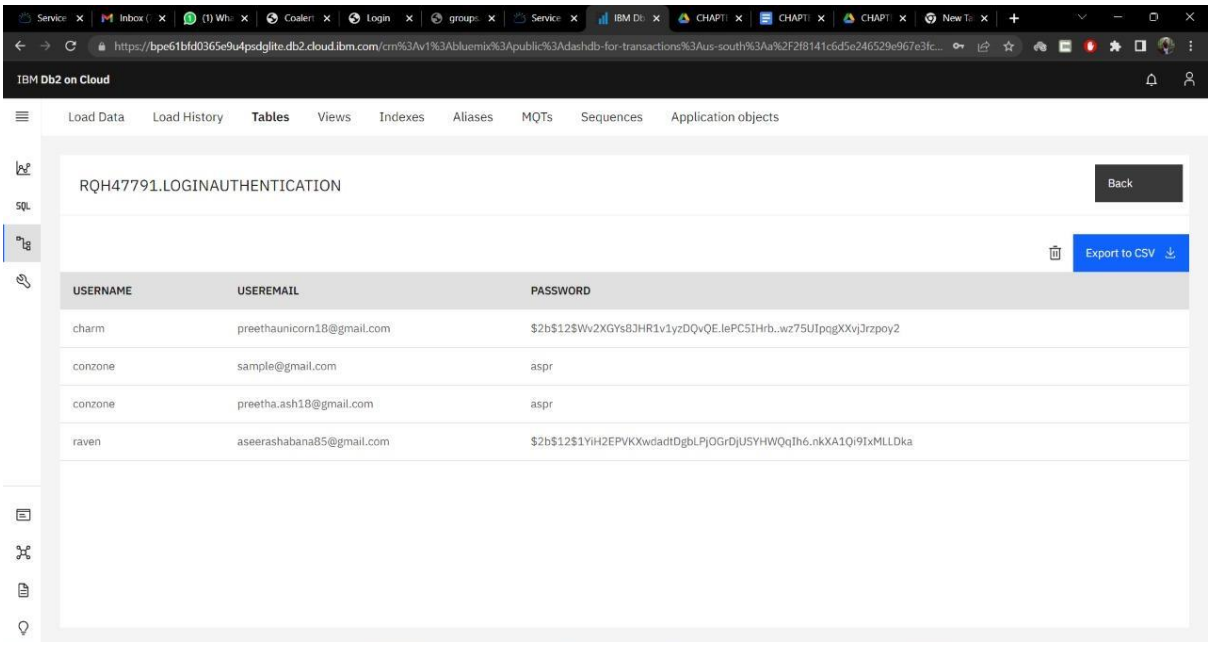


Figure 7.5

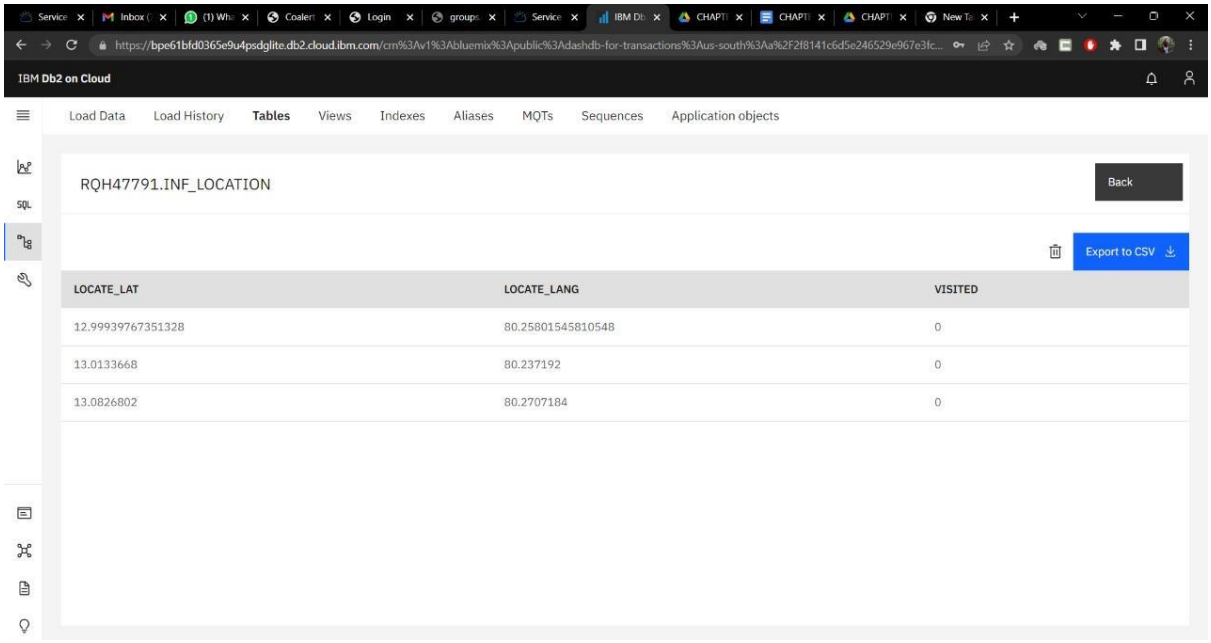

IBM Db2 on Cloud
Load Data
Load History
Tables
Views
Indexes
Aliases
MQTs
Sequences
Application objects
RQH47791.INF_LOCATION
Back
Export to CSV
LOCATE_LAT
LOCATE_LANG
VISITED
12.99939767351328
80.25801545810548
0
13.0133668
80.237192
0
13.0826802
80.2707184
0

Figure 7.6

CHAPTER 8

TESTING

8.1 TEST CASES

Testing is the process of identifying the accuracy and quality of the software product and service under test. Apparently, it was born to validate whether the product fulfills the particular prerequisites, needs, and desires of the client. At the end of the day, testing executes a framework or application with a specific end goal to point out bugs, errors or defects. The responsibility of testing is to point out the issues of bugs and give Dev (Developers) a clue to help them fix it right following the requirements .They are certain objectives:

Objectives:

- Uncover as many errors (or bugs) as possible in a created website.
- Demonstrate the same test and ensure it matches the requirement specifications.
- Validate the quality of a website using the minimum cost and efforts.
- Generate high-quality test cases, perform effective tests, and issue correct

and helpful problem reports.

8.1.1 Unit Test

It is not an exaggeration to say that people usually hear about Unit Test before getting noted about the software testing industry since it is the most basic testing used at the developer level. We focus on the

single piece of unit code whilst it is already isolated from any outside interaction or dependency on any module before. This test requires the developer checking the smallest units of codes they have written and prove that units can work independently.

8.1.2 Integration Test

Still, at the developer level, after Unit Test, the combination (or integration) of these smallest codes should also be checked carefully. Integration test provides the testing modules which access to network, databases and file systems. They will indicate whether the database and the network are working well when they are combined into the whole system. Most importantly, the connection between small units of code tested in the previous stage will be proven at this stage.

8.1.3 System Testing

In this, the entire system was tested as a whole with all forms, code, modules and class modules. System testing is the stage of implementation, which is aimed at ensuring that the system works accurately and efficiently before live operation commences. It is a series of different tests that verifies that all system elements have been properly integrated and perform allocated functions. System testing makes logical assumptions that if all parts of the system are correct, the goal will be successfully achieved. Testing is the process of executing the program with the intent of finding errors. Testing cannot show the absence of defects, it can only show that software errors are present.

TEST CASES

i. Login button click with wrong credential sentered.

ii. Signup with already registered mailID.

iii. Signup with wrong form data entered. iv. Entering home page with logged out session.

v. Clicking homepage buttons with logged out sessions.

vi. Invalid data entered in change password page and requested a change in password.

S.NO	TEST CASE	REQUIRED OUTPUT	RESULT OUTPUT	STATUS
1	Login button click with wrong credentials	Wrong credentials entered notification	Wrong credentials entered notification	ACCEPTED
2	Signup with already registered mail ID.	Email already registered notification	Email already registered notification	ACCEPTED
3	Signup with wrong form data entered.	Wrong credentials entered notification	Wrong credentials entered notification	ACCEPTED
4	Entering home page with logged out session.	Take user to login page	Take user to login page	ACCEPTED
5	Clicking home page buttons with logged out session.	Take user to login page	Take user to login page	ACCEPTED
6	Invalid data entered in change password page and requested for change in password.	Wrong form data entered notification	Wrong form data entered notification	ACCEPTED

8.2 USER ACCEPTANCE TESTING

User acceptance testing, a testing methodology where the clients/end users involved in testing the product to validate the product against their requirements. It is performed at client location at developer's site.For industry such as medicine or aviation industry, contract and regulatory compliance testing and operational acceptance testing is also carried out as part of user acceptance testing.UAT is context dependent and the UAT plans are prepared based on the requirements and NOT mandatory to execute all kinds of user acceptance tests and even coordinated and contributed by testing team.

Purpose of document

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

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	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

Purpose of UAT

The main Purpose of UAT is to validate end to end business flow. It does not f ocus oncosmetic errors, spelling mistakes or system testing. User Acceptance Testing is carried out in aseparate testing environment with production-like data setup. It is kind of black box testing where two or more end-users will be involved.

UAT is performed by –

- Client
- End users User Acceptance Testing - In SDLC

The following diagram explains the fitment of user acceptance testing in the software development lifecycle

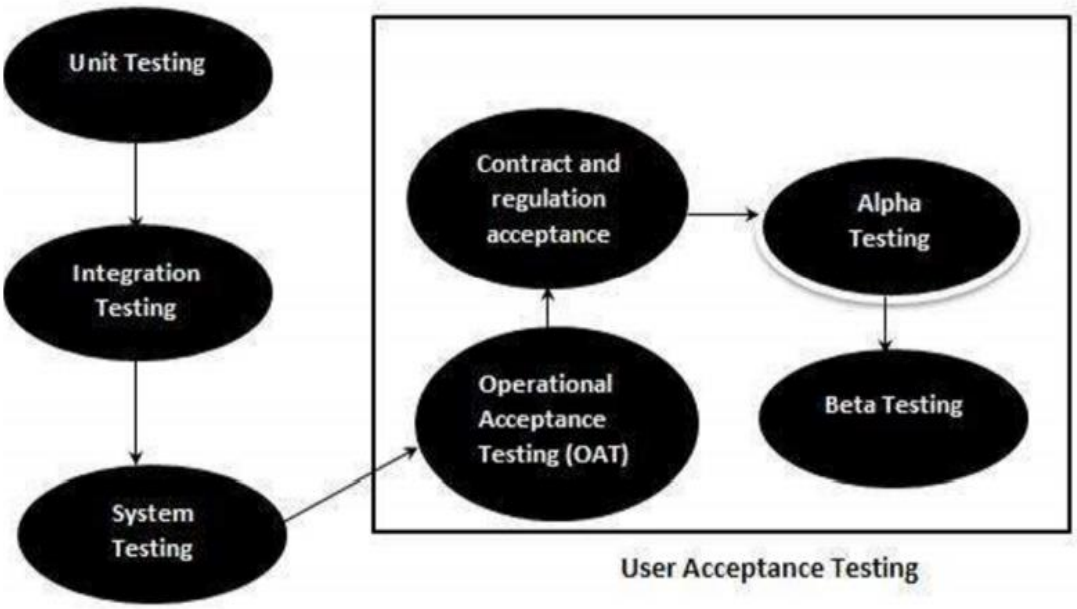


Figure 8.1 User acceptance Testing

The acceptance test cases are executed against the test data or using an acceptance test script and

then the results are compared with the expected ones.

Acceptance Criteria

Acceptance criteria are defined on the basis of the following attributes:

- Functional Correctness and Completeness
- Data Integrity
- Data Conversion
- Usability
- Performance
- Timeliness
- Confidentiality and Availability
- Installability and Upgradability
- Scalability
- Documentation

CHAPTER 9

RESULTS

9.1 PERFORMANCE METRICS

A total of 976 (24.4%) people completed the survey. Smartphone usage was 91.5% overall, but this varied among age groups. In total, 97.1% were aware of tracing apps, but only 67.2% felt sufficiently informed. Furthermore, 55.7% intended to use an app, 23.3% refused, and 21.0% were unsure. The top reasons for app use were as follows: controlling the spread of the virus, mitigating risks for others and for oneself, and increasing freedoms.The top reasons against app use were as follows: distrusting the government, concerns about data security and privacy, and doubts about efficacy.

The top response for changing one's mind about app use from being willing to being

unwilling was that nothing would; that is, they felt that nothing would cause them to become unwilling to use a tracing app. This was also the top response for changing one's mind from being unwilling to being willing to use contact tracing apps. Among those who were unsure of using contact tracing apps, the top response was the need for more information.

Respondents demonstrated a keenness to help themselves, others, society, and the

government to avoid contracting the virus and to control its spread. However, digital inclusion varied among age groups, precluding participation for some people. Nonetheless, unwillingness was significant, and considering the nature

of the concerns raised and the perceived lack of information, policy and decision-makers need to do more to act openly, increase communication, and demonstrate trustworthiness if members of the public are to be confident in using an app.

Digital technologies provide powerful tools for governments in their fight to control the COVID-19 pandemic, but their privacy and data protection implications must be recognized. Contact-tracing apps should be implemented with full transparency, in consultation with major stakeholders, robust privacy-by-design protections, and through open-source projects (where appropriate). Governments should consider:

- The legal basis of the use of these technologies, which varies according to the type of data collected (e.g., personal, sensitive, pseudonymized, anonymized, aggregated, structured or unstructured).
- Whether the use of these technologies and the subsequent data gathering is proportionate, consider how the data is stored, processed, shared and with whom (including what security and privacy-by-design protocols are implemented).
- The quality of the data collected and whether it is fit for purpose.
- Whether the public is well-informed, and the approaches adopted are implemented with full transparency and accountability.
- The time period within which more invasive technologies that collect personal data may be used to combat the crisis. Data should be retained only for so long as is necessary to serve the specific purpose for which it was collected.

CHAPTER 10

ADVANTAGES AND DISADVANTAGES

ADVANTAGES

- It keeps you updated with a centralized database of cases found so far nation-wide.
- It is the easiest tool to predict COVID-19 symptoms even if you don’t exhibit any.
- COVID Symptom Tracker App takes less time to load and run.
- Users can know if they have been near a person suspected to be affected by COVID-19.
- Application must be available for 24/7.
- Your personal information remains confidential and can’t be accessed by anyone (including government authorities).

DISADVANTAGES

- The site could crash if a lot of people try accessing it at the same time. If the site crashes, it doesn’t open for a short while then.
- Require data / Wi-Fi to get online.
- Errors stay online forever.
- Access to personal information and geographical location.
- User’s data exposure.
- This apps seems inadequate to find out symptoms in the patients who were affected by Coronavirus earlier and recovered later.
- Where many believe that Coronavirus Tracking apps are an effective tool to mitigate the outbreak, technologists also warn that apps may not be as effective as actually testing the population.

CHAPTER 11

CONCLUSION

The application, overall, helps in keeping track of people who have been tested positive for the virus. It is also an excellent way to alert people about the number of infected cases in their area that have been identified as coronavirus-positive or if they accidentally came in contact with a person suffering from COVID-19. The application requires being in running mode at all times to continue tracing individuals actively. The API of the application can be used in such a way that it enables your smartphone to exchange the tracing keys periodically. This will help to locally store the unique ID of the people who have come into contact with the user (TraceTogether also uses this approach). If later a user is tested positive for coronavirus, this method of cryptography will also ensure the privacy and the safety of your data, as the cryptographic IDs refresh every 15 minutes and also remain anonymous.

In addition to showing the data of the number of users who have taken the self-assessment test and who have been identified as positive, a map can be shown of the nearby area where people have been identified as positive for COVID-19. Alerts through e-mail and SMS can be sent to the user while entering the red zone or containment zone. With all the above information and suggestions, other countries and regions can take a cue for working on contact-tracing apps for their respective areas and communities. This study will be helpful for various academics, researchers, data science professionals, app developers, decision-makers, policymakers, and government administrators.

Understanding the needs of older individuals in the COVID-19 pandemic period would be the first necessary step toward designing and developing mobile apps to encourage their physical and mental well-being Given the circumstances and a little time to deal with the pandemic, every effort, and every breakthrough is at a high priority.

CHAPTER 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.

CHAPTER 13

APPENDIX

App.py

```
import os
import sqlite3 as sql
import bcrypt
import ibm_db
from flask import Flask, redirect, render_template, request, session, url_for
from markupsafe import escape

try:
    conn = ibm_db.connect("DATABASE=bludb;HOSTNAME=b0aebb68-94fa-46ec-a1fc-1c999edb6187.c3n41cmd0nqnrk39u98g.databases.appdomain.cloud;PORT=31249;SECURITY=SSL;SSLServerCertificate=./DigiCertGlobalRootCA.crt;PROTOCOL=TCPIP;UID=rqh47791;PWD=8cqzyDyV5CrIMNp9","","")
    #conn = ibm_db.connect("DATABASE=bludb;HOSTNAME=0c77d6f2-5da9-48a9-81f8-86b520b87518.bs2io90l08kqb1od8lcg.databases.appdomain.cloud;PORT=31198;SECURITY=SSL;SSLServerCertificate=DigiCertGlobalRootCA.crt;PROTOCOL=TCPIP;UID=vxz92171;PWD=mCH7uu0w9WXH0hlY","","")
    print(conn)
    print("connection successful")
except:
    print("Error in connection, sqlstate = ")
    errorState = ibm_db.conn_error()
    print(errorState)


app = Flask(__name__)
app.secret_key ='_5#y2L"ulF4Q8z\n\xecrah]/'

import sendgrid
#from dotenv import load_dotenv
from sendgrid import SendGridAPIClient
from sendgrid.helpers.mail import *
from sendgrid.helpers.mail import Mail
```

```
def send_conformation_mail(mail):
  #load_dotenv()
  SENDGRID_API_KEY = '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'
  #sg = sendgrid.SendGridAPIClient(api_key=os.getenv('SENDGRID_API'))
  sg = sendgrid.SendGridAPIClient(api_key=SENDGRID_API_KEY)
  from_email = Email("aseera1105@gmail.com")
  to_email = To(mail)
  subject = "Welcome to containment alert"
  content = Content("text/plain", "welcome to our page containment alert.you can use our website to know about the covid zones.Enable location to get notified about the covid containment zone.Stay Alert!!")
  mail = Mail(from_email, to_email, subject, content)
  # mail_json=mail.get()
  response = sg.client.mail.send.post(request_body=mail.get())
  print(response.status_code)
  print(response.body)
  print(response.headers)

def send_alert(mail):
  #load_dotenv()
  SENDGRID_API_KEY = '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'
  sg = sendgrid.SendGridAPIClient(api_key=SENDGRID_API_KEY)
  #sg = sendgrid.SendGridAPIClient(api_key=os.getenv('SENDGRID_API'))
  from_email = Email("aseera1105@gmail.com")
  to_email = To(mail)
  subject = "Alert!!"
  content = Content("text/plain", "Be Safe!! You are now at the covid containment zone.Please leave the area as soon as posiible.")
  mail = Mail(from_email, to_email, subject, content)
  # mail_json=mail.get()
  response = sg.client.mail.send.post(request_body=mail.get())
  print(response.status_code)
  print(response.body)
  print(response.headers)


session={}
```

```
@app.route("/",methods=['GET'])
def index():
    # if 'email' not in session:
    #   return redirect(url_for('login'))
    return render_template('index.html',name='Home')

@app.route("/home",methods=['GET'])
def home():
  if request.method == 'GET':
      name1=session['username']
      email=session['useremail']
      return render_template('home.html', name=name1,email=email)
  return render_template('home.html')


@app.route("/register",methods=['GET','POST'])
def register():
  if request.method == 'POST':
    name = request.form['name']
    email = request.form['email']
    password = request.form['password']
    cpassword = request.form['cpassword']

    if not email or not name or not password or not cpassword:
      return render_template('register.html',error='Please fill all fields')
    if password != cpassword:
       return render_template('register.html',error='The password is not same')
    else:
       hash=bcrypt.hashpw(password.encode('utf-8'),bcrypt.gensalt())
      # self.password_hash=hash.decode('utf8')

    query = "SELECT * FROM LOGINAUTHENTICATION WHERE
useremail=?"
    stmt = ibm_db.prepare(conn, query)
    ibm_db.bind_param(stmt,1,email)
    ibm_db.execute(stmt)
    isUser = ibm_db.fetch_assoc(stmt)

    if not isUser:
      insert_sql = "INSERT INTO LOGINAUTHENTICATION(USERNAME,
USEREMAIL, PASSWORD) VALUES (?,?,?)"
      prep_stmt = ibm_db.prepare(conn, insert_sql)
      ibm_db.bind_param(prep_stmt, 1, name)
```

```
      ibm_db.bind_param(prep_stmt, 2, email)
      ibm_db.bind_param(prep_stmt, 3, hash)
      ibm_db.execute(prep_stmt)
      send_conformation_mail(email)
      return render_template('login.html',success="You can login")

    else:
      return render_template('register.html',error='Invalid Credentials')

  return render_template('register.html')

@app.route("/login",methods=['GET','POST'])
def login():
    if request.method == 'POST':
      email = request.form['email']
      password = request.form['password']

      if not email or not password:
        return render_template('login.html',error='Please fill all fields')
      query = "SELECT * FROM LOGINAUTHENTICATION WHERE
useremail=?"
      stmt = ibm_db.prepare(conn, query)
      ibm_db.bind_param(stmt,1,email)
      ibm_db.execute(stmt)
      isUser = ibm_db.fetch_assoc(stmt)
      print(isUser,password)

      if not isUser:
        return render_template('login.html',error='Invalid Credentials')

      #return render_template('login.html',error=isUser['PASSWORD'])

      isPasswordMatch = bcrypt.checkpw(password.encode('utf-
8'),isUser['PASSWORD'].encode('utf-8'))

      if not isPasswordMatch:
        return render_template('login.html',error='Invalid Credentials')
      # session['email'] = isUser['USEREMAIL']
      # session['id'] = isUser['ID']
      session['username'] = isUser['USERNAME']
      session['useremail'] = email
      return redirect(url_for('home'))
```

```
    return render_template('login.html',name='Home')

@app.route('/user_map')
def user_map():
   return render_template('user_map.html',name='Map')

@app.route('/about')
def about():
   return render_template('about.html',name='Map')

@app.route('/success')
def success():
  inf_location = []
  sql = "SELECT * FROM INF_LOCATION"
  stmt = ibm_db.exec_immediate(conn, sql)
  dictionary = ibm_db.fetch_both(stmt)
  while dictionary != False:
    # print ("The Name is : ",  dictionary)
    inf_location.append(dictionary)
    dictionary = ibm_db.fetch_both(stmt)
  if inf_location:
    return render_template("success.html", inf_location = inf_location)

  return render_template('success.html')


@app.route('/addzone',methods=['GET','POST'])
def addzone():
        if request.method == 'GET':
            return render_template('addzone.html')
        if request.method == "POST":
            # get data
            lat = request.form["lat"]
            lon = request.form["lon"]
            if lat == "" or lon == "":
                return render_template('addzone.html')
            sql = "INSERT INTO inf_location ( locate_lat, locate_lang, visited)
VALUES ('" + lat + "', '" + lon + "', 0)"
            ibm_db.exec_immediate(conn, sql)
            return render_template('addzone.html',msg="Added Successfully")
        return render_template('addzone.html', success=0)

@app.route('/delete/<lat>')
```

```
def delete(lat):
  sql = f"SELECT * FROM INF_LOCATION WHERE LOCATE_LAT='{escape(lat)}'"
  # print(sql)
  stmt = ibm_db.exec_immediate(conn, sql)
  student = ibm_db.fetch_row(stmt)
  # print ("The Name is : ",  student)
  if student:
    sql = f"DELETE FROM INF_LOCATION WHERE LOCATE_LAT='{escape(lat)}'"
    print(sql)
    stmt = ibm_db.exec_immediate(conn, sql)

    location = []
    sql = "SELECT * FROM INF_LOCATION"
    stmt = ibm_db.exec_immediate(conn, sql)
    dictionary = ibm_db.fetch_both(stmt)
    while dictionary != False:
      location.append(dictionary)
      dictionary = ibm_db.fetch_both(stmt)
    if location:
      return render_template("table.html", location=location, msg="Delete successfully")
  return render_template("table.html")

@app.route('/table')
def table():
  inf_location = []
  sql = "SELECT * FROM INF_LOCATION"
  stmt = ibm_db.exec_immediate(conn, sql)
  dictionary = ibm_db.fetch_both(stmt)
  while dictionary != False:
    inf_location.append(dictionary)
    dictionary = ibm_db.fetch_both(stmt)
  if inf_location:
    return render_template("table.html", inf_location = inf_location)
  return render_template("table.html")


@app.route('/data')
def data():
  inf_location = []
  sql = "SELECT * FROM INF_LOCATION"
```

```
  stmt = ibm_db.exec_immediate(conn, sql)
  dictionary = ibm_db.fetch_both(stmt)
  while dictionary != False:
    inf_location.append(dictionary)
    dictionary = ibm_db.fetch_both(stmt)
  if inf_location:
    return render_template("data.html", inf_location = inf_location)
  return render_template("data.html")
@app.route('/check',methods=['GET','POST'])
def check():

    if request.method == 'POST':
      lat = request.form['lat']
      lon = request.form['lon']

      if not lat or not lon:
        return render_template('check.html',error='Please fill all fields')
      query = "SELECT * FROM inf_location WHERE locate_lat=?"
      stmt = ibm_db.prepare(conn, query)
      ibm_db.bind_param(stmt,1,lat)
      ibm_db.execute(stmt)
      islocate = ibm_db.fetch_assoc(stmt)


      if  not islocate:
        return  render_template('check.html',error='Covid  Zone!! Please  leave  the
zone!!')
      else:
        if request.method == 'GET':
          mail=session['useremail']
          send_alert(mail)
        return  render_template('check.html',error='Covid  Zone!! Please  leave  the
zone!!')
    return render_template('check.html')

@app.route('/logout')
def logout():
    session.pop('email', None)
    session.pop('name', None)
    return redirect(url_for('index'))

if __name__ == "__main__":
    app.run(debug=True)
```

GITHUB LINK:
https://github.com/IBM-EPBL/IBM-Project-7240-1658850732

PROJECT DEMO VIDEO LINK
:https://youtu.be/LF1pDu4jSUE