

CONTAINMENT ZONE ALERTING APPLICATION

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1 INTRODUCTION

Project Overview: -

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.

2 LITERATURE SURVEY

Existing Problem:-

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

3 IDEATION & PROPOSED SOLUTION

Empathy Map Canvas:-

Empathy Map Canvas

Gain insight and understanding on solving customer problems.

1

Build empathy and keep your focus on the user by putting yourself in their shoes.



Share your feedback

BRAINSTROMMING

NITHISH KUMAR S

Tracking client by using geo-fence algorithm	Collecting affected person location details	Alerting user while entering contaminated zone
Indicating case counts to the users	Collecting virus data's	Collecting & storing information on cloud
Creating User friendly API	location services gets shutdown when users at home	It shows the symptoms and remedies of the viral disease

PREM B K

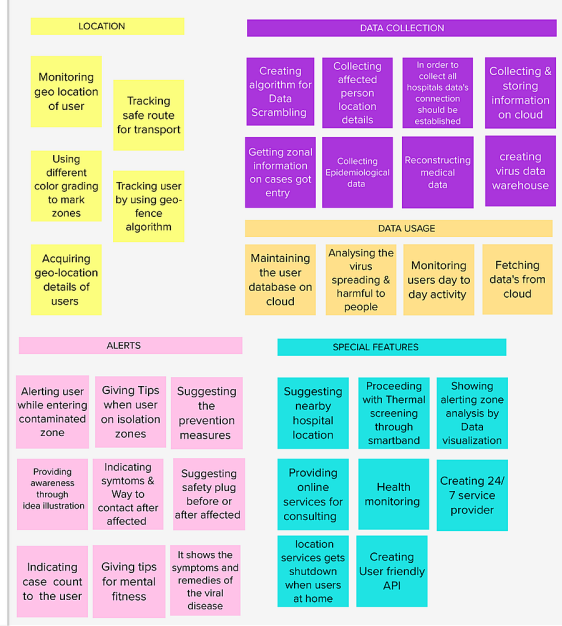
creating virus data warehouse	Health monitoring	Maintaining the user database on cloud
Tracking safe route for transport	Creating trace test treat model	Providing awareness through Idea illustration
Analysing the virus spreading & harmful to people	Providing online services for consulting	Monitoring users day to day activity

MUTHUKUMAR P

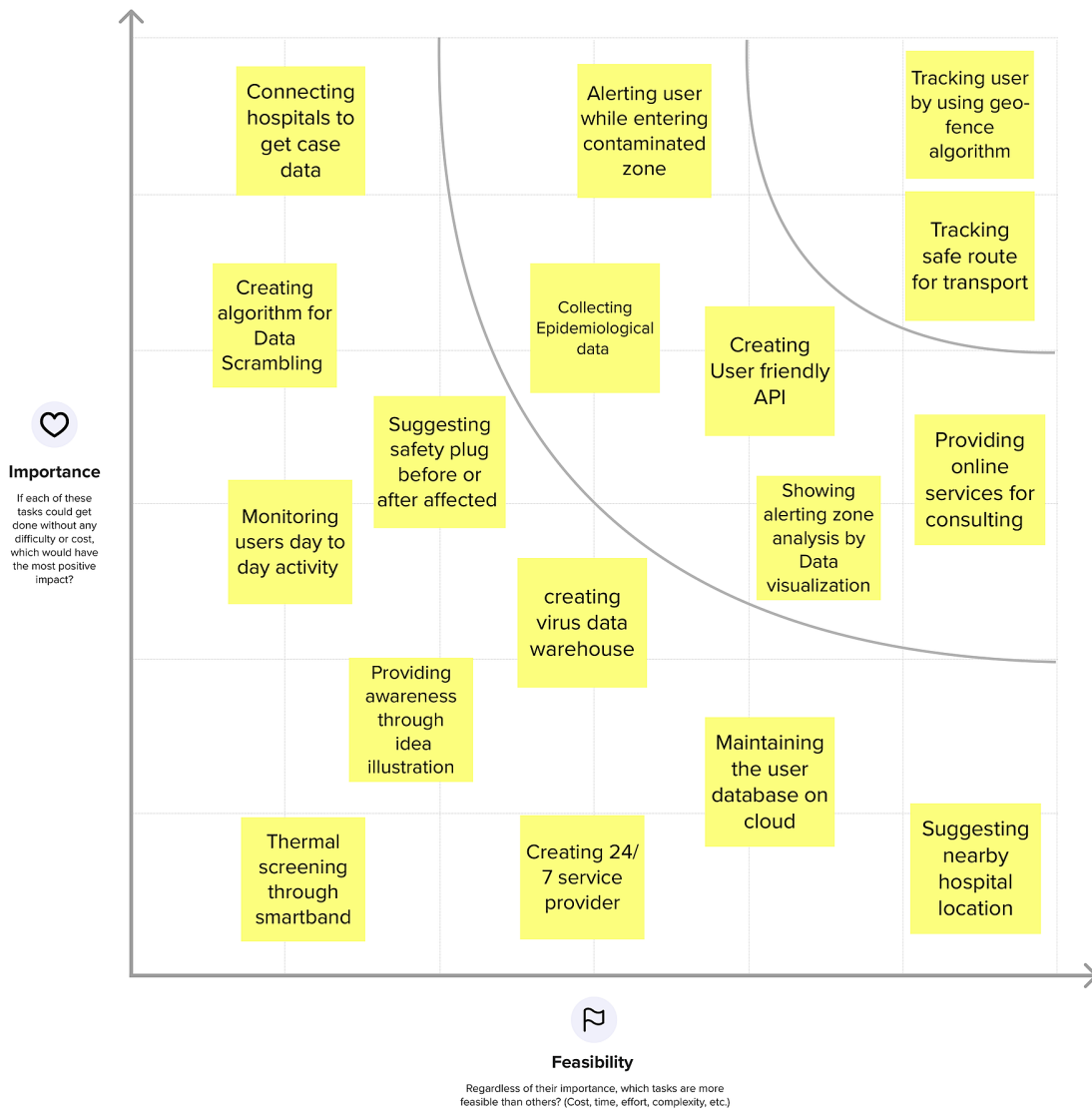
reconstructing medical data	Acquiring geo-location details of users	Creating 24/7 service provider
Suggesting the prevention measures	Suggesting nearby hospital location	Giving tips for mental fitness
In order to collect all hospitals data's connection should be established	Indicating symptoms & Way to contact after affected	Fetching data's from cloud

NAVEEN KUMAR C

Collecting Epidemiological data	Monitoring geo location of user	Showing alerting zone analysis by Data visualization
Using different color grading to mark zones	Suggesting safety plug before or after affected	Getting zonal information on cases got entry
Creating algorithm for Data Scrambling	Giving Tips when user on isolation zones	Thermal screening through smartband



Importance
If each of these tasks could get done without any difficulty or cost, which would have the most positive impact?



PROBLEM SOLUTION FIT

REQUIREMENT ANALYSIS

Functional requirements

FR-1

User Registration

Registration through Form

Registration through Gmail

Registration through Twitter

FR-2

User Confirmation

Confirmation via Email Confirmation via OTP

FR-3

Hospital registration

Registration through form

Registration through Hospital ID

FR-4

Hospital Entry

Collecting case data and storing it in the Database

Doctors for medical consultation

Monitoring the premium subscription members

FR-5

Permissions

Location, Storage, Contacts

FR-6

Subscription

Taking special care of subscription members and monitoring their day-to-day activity.

FR-7

Chat Bot

Minimal medical Suggestions

Non-Functional requirements

NFR-1

Usability

People who travel all day can use this app to track the contaminated zone and take precautions before they are affected.

NFR-2

Security

Using "Blockchain technology for location and data encryption" to protect data from getting into the wrong hands.

NFR-3

Reliability

Wrong medical recommendations and fake news will be avoided valid medical suggestions and proper guidance is given in the application.

NFR-4

Performance

The geo-fencing algorithm is updated daily and shows the day-to-day updates of the contaminated zones.

NFR-5

Availability

Medicinal Recommendations, Test kits, Doctor suggestions, and Updated Contaminated zones are available in applications.

NFR-6

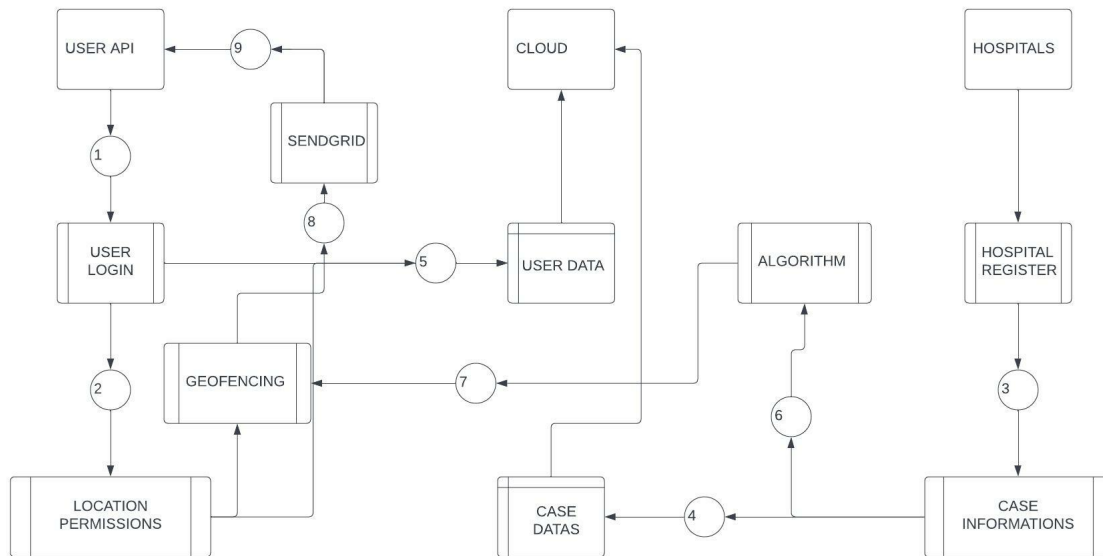
Scalability

Users are provided with medical services online and giving awareness to people by giving therapeutic medicines and monitoring user movements in pandemic zones and alerts before they are affected.

PROJECT DESIGN

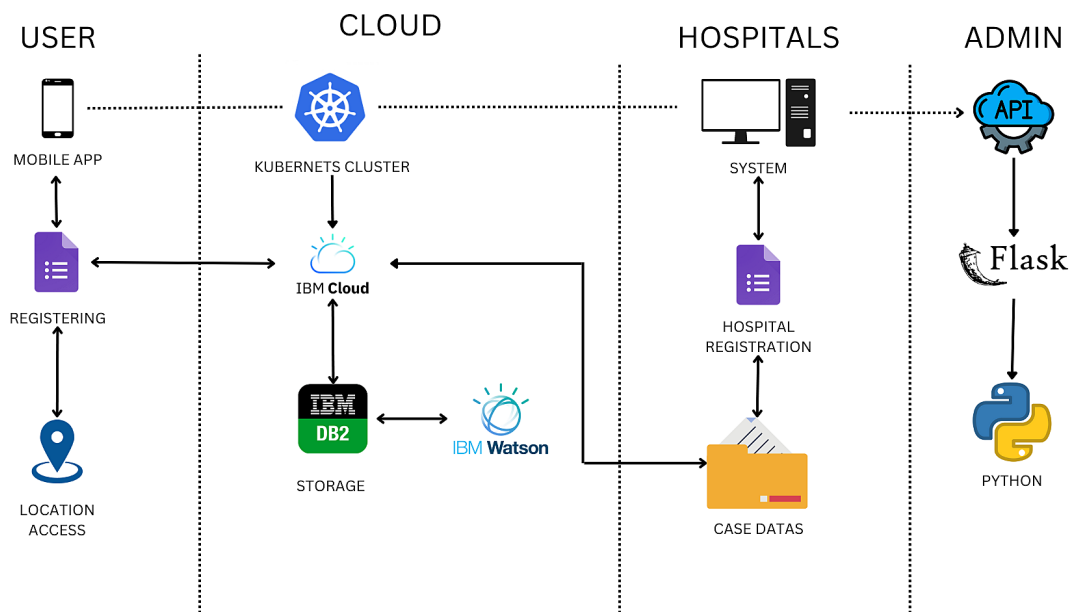
DATA FLOW DAIGRAM

DATA FLOW DIAGRAMS



1. USER REGISTRATION IS DONE BY FILLING FORMS
2. AFTER REGISTRATION GETTING LOCATION PERMISSIONS
3. CASE INFORMATIONS GATHERED THROUGH HOSPITAL REGISTER
4. GATHERED CASE DATA IS STORED IN CLOUD
5. USER LOGIN INFO IS STORED IN CLOUD
6. BY USING GATHERED CASE INFORMATION IS CREATED
7. THE GENERATED ALGORITHM IS DISPLAYED IN GEOFENCING SYSTEM
8. GENERATED DATA IS LINKED WITHN SENDGRID SERVICES
9. SENDGRID COLLAB WITH GEOFENCE ALGORITHM WHEN USER ENTERS CONTAMINATED ZONE ALERTS IS SEND THROUGH NOTIFICATION

TECHNICAL ARCHITECTURE



CODING & SOLUTIONING (Explain the features added in the project along with code)

FLASK

```
from flask import Flask, render_template, request, redirect, url_for, session
```

```
import ibm_db
```

```
import bcrypt
```

```
conn = ibm_db.connect("DATABASE=bludb;HOSTNAME= 2f3279a5-73d1-4859-88f0-  
a6c3e6b4b907.c3n41cmd0nqnk39u98g.databases.appdomain.cloud;PORT=30756;SECURITY=  
SSL;SSLServerCertificate=certificate.crt;PROTOCOL=TCPIP;UID=bkk21708;PWD=CqbgdenpsDJ  
bwhug;;;")
```

```
app = Flask(__name__)
```

```
app.secret_key = b'\xb5\x89K(\x93'
```

```
@app.route('/')  
def index():
```

```
    return redirect(url_for('home'))
```

```
@app.route('/index', methods=['GET','POST'])
```

```
def home():
```

```
    if 'name' in session:
```

```
        return render_template('index.html', name=session['name']+"s account")
```

```
    else:
```

```
        return render_template('index.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())
```

```
    query = "SELECT * FROM LOIGNAUTHENTICATION 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 LOIGNAUTHENTICATION(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)
    return render_template('register.html',success="You can login")
else:
    return render_template('register.html',error='Invalid Credentials')

return render_template('register.html')

@app.route("/registerhos",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('registerhos.html',error='Please fill all fields')
        if password != cpassword:
            return render_template('registerhos.html',error='The password is not same')
        else:
            hash=bcrypt.hashpw(password.encode('utf-8'),bcrypt.gensalt())

        query = "SELECT * FROM LOIGNAUTHENTICATION 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 LOIGNAUTHENTICATION(USERNAME, USEREMAIL, PASSWORD)
VALUES (?, ?, ?)"
```

```
    prep_stmt = ibm_db.prepare(conn, insert_sql)
```

```
    ibm_db.bind_param(prepare_stmt, 1, name)
```

```
    ibm_db.bind_param(prepare_stmt, 2, email)
```

```
    ibm_db.bind_param(prepare_stmt, 3, hash)
```

```
    ibm_db.execute(prepare_stmt)
```

```
    return render_template('registerhos.html', success="You can login")
```

```
else:
```

```
    return render_template('registerhos.html', error='Invalid Credentials')
```

```
return render_template('registerhos.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')
```

```
    elif(email == 'admin@gmail.com' and password == 'admin@123'):
```

```
        return redirect(url_for('AdminMap'))
```

```
    query = "SELECT * FROM LOIGNAUTHENTICATION 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 Credentials1')
```

```
    #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 Credentials2')

    session['email'] = isUser['USEREMAIL']
    session['name'] = isUser['USERNAME']
    return redirect(url_for('home'))
    #return render_template('/index.html')

if 'name' in session:
    return render_template('/login.html',name=session['name'])
return render_template('/login.html',name='')

@app.route("/loginhos",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('loginhos.html',error='Please fill all fields')

        elif(email == 'admin@gmail.com' and password == 'admin@123'):
            return redirect(url_for('AdminMap'))
        query = "SELECT * FROM LOIGNAUTHENTICATION 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('loginhos.html',error='Invalid Credentials1')
            #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('loginhos.html',error='Invalid Credentials2')

```

```
session['email'] = isUser['USEREMAIL']
session['name'] = isUser['USERNAME']
return redirect(url_for('home'))
#return render_template('/index.html')
```

```
if 'name' in session:
    return render_template('/loginhos.html',name=session['name'])
return render_template('/loginhos.html',name="")
```

```
#Storing latitude and langitude in db
@app.route('/latandlng', methods=['POST','GET'])
def storemark():
    if request.method == 'POST':
        lat = request.form['lati']
        lng = request.form['lang']
        desc = request.form['discript']
        insert_sql = "INSERT INTO LOCATION(LATITUDE, LANGITUDE, DESCRIPTION) VALUES (?, ?, ?)"
        prep_stmt = ibm_db.prepare(conn, insert_sql)
        ibm_db.bind_param(prep_stmt, 1, lat)
        ibm_db.bind_param(prep_stmt, 2, lng)
        ibm_db.bind_param(prep_stmt, 3, desc)
        ibm_db.execute(prep_stmt)

    return redirect(url_for('AdminMap'))
```

```
@app.route('/admin_map')
def AdminMap():
    mark = addMarker()
    return render_template('admin_map.html',mark=mark,len = len(mark))
```

```
def addMarker():
    query = "SELECT * FROM LOCATION;"
    stmt = ibm_db.prepare(conn, query)
    # ibm_db.bind_param(stmt,1,lat)
    # ibm_db.bind_param(stmt,2,lng)
    # ibm_db.bind_param(stmt,3,des)
    ibm_db.execute(stmt)
    isUser = ibm_db.fetch_assoc(stmt)
    data=[]
    while(isUser!=False):
        data.append(isUser)
```

```

isUser = ibm_db.fetch_assoc(stmt)

print (data[0]['LANGITUDE'])
print (data[1]['LATITUDE'])
return data

@app.route('/user_map')
def UserMap():
    if 'email' not in session:
        return redirect(url_for('login'))
    else:
        mark = addMarker()

    return render_template('user_map.html',mark = mark, len = len(mark))

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

if __name__ == "__main__":
    app.run(debug=True)
    #,host='0.0.0.0'

```

ADVANTAGES & DISADVANTAGES

Advantages:

In this situation where people can move in the city, these containment zones pose a risk of infection to these city dwellers. Therefore, informing people about the location of the containment zones can help them bypass and avoid these zones and thereby reduce the chance of community transmission.

Disadvantages:

The parameters used are similar, but the exact criteria applied varies, and usually depends on local conditions. These have also evolved with time, and are under constant review. In general, containment zones are getting smaller with time as the number of cases are increasing – from entire localities, to colonies or neighbourhood, to streets and lanes, to particular buildings, and now just particular floors.

CONCLUSION:

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.

FUTURE SCOPE

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.

APPENDIX

Source Code:

Android Application:

Home.java

```
package com.example.containmentzonedetection;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.webkit.WebView;
import android.webkit.WebViewClient;
import android.widget.Button;
public class MainActivity3 extends AppCompatActivity {
    Button submit;
    Button call;
    Intent intent, intent1, intent2, intent3;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
```

```

setContentView(R.layout.activity_main3);
call=findViewById(R.id.click1);
submit = findViewById(R.id.regiter1);
call.setOnClickListener(new View.OnClickListener() {
@Override
public void onClick(View view) {
Intent intent = new Intent(MainActivity3.this, MapsActivity.class);
startActivity(intent);
}
});
submit.setOnClickListener(new View.OnClickListener() {
@Override
public void onClick(View view) {
Intent intent = new Intent(MainActivity3.this, MainActivity.class);
startActivity(intent);
}
});
intent = new Intent(this, MainActivity3.class);
intent1 = new Intent(this, MainActivity3.class);
intent2 = new Intent(this, MainActivity3.class);
intent2 = new Intent(this, MainActivity3.class);
}
public void home1(View view) {
if (view.getId() == R.id.imageView8) {
startActivity(intent);
}
}
public void about1(View view) {
if (view.getId() == R.id.about2) {
startActivity(intent1);
}
}
public void con1(View view) {
if (view.getId() == R.id.con2) {
startActivity(intent3);
}
}
}

```

Register.java

```

package com.example.containmentzonedetection;
import androidx.appcompat.app.AppCompatActivity;

```



```

import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
public class MainActivity2 extends AppCompatActivity {
    Button Register;
    Intent intent;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main2);
        Register = findViewById(R.id.button2);
        Register.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent intent = new Intent(MainActivity2.this, MainActivity3.class);
                startActivity(intent);
            }
        });
        intent = new Intent(this, forgotpassword.class);
    }
    public void signin1(View view) {
        if (view.getId()==R.id.textView12)
        {
            finish();
        }
    }
    public void ot(View view) {
        if (view.getId() == R.id.textView8) {
            startActivity(intent);
        }
    }
}

```

Login.xml

```

<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"

```

```

tools:context=".MainActivity">
<TextView
    android:id="@+id/textView3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="160dp"
    android:layout_marginTop="120dp"
    android:layout_marginEnd="193dp"
    android:layout_marginBottom="32dp"
    android:text="-----or-----"
    android:textSize="20sp"
    android:textStyle="italic"
    app:layout_constraintBottom_toTopOf="@+id/textView4"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.445"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />
<TextView
    android:id="@+id/textView4"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="24dp"
    android:layout_marginTop="20dp"
    android:layout_marginEnd="214dp"
    android:text="Email Address:"
    android:textColor="#020202"
    android:textSize="24sp"
    android:textStyle="italic"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/textView3" />
<EditText
    android:id="@+id/editTextTextPersonName"
    android:layout_width="350dp"
    android:layout_height="40dp"
    android:layout_marginStart="50dp"
    android:layout_marginTop="12dp"
    android:layout_marginEnd="153dp"
    android:background="@drawable/edit_text_border"
    android:ems="10"
    android:hint="Enter a valid email address"

```

```
android:inputType="textPersonName"
android:textColor="#0E0E0E"
android:textColorHighlight="#131313"
android:textColorLink="#0E0E0E"
android:textSize="20sp"
android:textStyle="italic"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.142"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/textView4" />
<TextView
android:id="@+id/textView5"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginStart="8dp"
android:layout_marginTop="16dp"
android:layout_marginEnd="8dp"
android:text="Sign in with"
android:textColor="#111112"
android:textSize="34sp"
android:textStyle="italic"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent" />
<TextView
android:id="@+id/textView6"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginStart="27dp"
android:layout_marginTop="16dp"
android:layout_marginEnd="250dp"
android:text="Password:"
android:textColor="#121111"
android:textSize="24sp"
android:textStyle="italic"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.0"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/editTextTextPersonName" />
<EditText
android:id="@+id/editTextTextPersonName2"
```

```

android:layout_width="350dp"
android:layout_height="40dp"
android:layout_marginStart="36dp"
android:layout_marginTop="16dp"
android:layout_marginEnd="150dp"
android:background="@drawable/edit_text_border"
android:ems="10"
android:hint="Enter passord"
android:inputType="textPassword"
android:textColor="#101010"
android:textColorHighlight="#101010"
android:textColorLink="#100F0F"
android:textSize="20sp"
android:textStyle="italic"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.058"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/textView6" />
<TextView
android:id="@+id/textView9"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginStart="60dp"
android:layout_marginTop="24dp"
android:layout_marginEnd="250dp"
android:text="Remember me"
android:textSize="16sp"
android:textStyle="normal"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/editTextTextPersonName2"
<TextView
android:id="@+id/textView10"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginStart="145dp"
android:layout_marginTop="235dp"
android:layout_marginEnd="83dp"
android:text="Forgot Passord ?"
android:onClick="fort"
android:textSize="16sp"

```

```
android:textStyle="normal"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toEndOf="@+id/textView9"
app:layout_constraintTop_toBottomOf="@+id/textView3" />
<Button
    android:id="@+id/button2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="70dp"
    android:layout_marginTop="50dp"
    android:layout_marginEnd="300dp"
    android:layout_marginBottom="280dp"
    android:background="@color/purple_700"
    android:textColor="@color/white"
    android:text="Login"
    android:textSize="22sp"
    android:textStyle="italic"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/textView9" />
<TextView
    android:id="@+id/textView11"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="100dp"
    android:layout_marginTop="32dp"
    android:layout_marginEnd="200dp"
    android:layout_marginBottom="180dp"
    android:text="Don't have an account?"
    android:textColorHighlight="#121111"
    android:textColorLink="#131313"
    android:textSize="16sp"
    android:textStyle="normal"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.535"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/button2"
    app:layout_constraintVertical_bias="0.224" />
<TextView
```

```

android:id="@+id/textView12"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginStart="8dp"
android:layout_marginTop="95dp"
android:layout_marginEnd="100dp"
android:layout_marginBottom="150dp"
android:text="Register"
android:onClick="register1"
android:textColor="#EA3E3E"
android:textSize="16sp"
android:textStyle="italic"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.0"
app:layout_constraintStart_toEndOf="@+id/textView11"
app:layout_constraintTop_toBottomOf="@+id/textView10"
app:layout_constraintVertical_bias="0.117" />
<LinearLayout
    android:layout_marginTop="650dp"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical">
    <androidx.cardview.widget.CardView
        android:id="@+id/b2"
        android:layout_width="536dp"
        android:layout_height="100dp"
        android:layout_margin="0dp"
        app:cardBackgroundColor="#0D42FF"
        app:cardCornerRadius="0dp">
        <LinearLayout
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:gravity="center"
            android:orientation="vertical">
            <TextView
                android:layout_width="match_parent"
                android:layout_height="match_parent"
                android:layout_marginTop="22sp"
                android:text=" Containment Zone Detection"
                android:textAlignment="center"

```

```
    android:textColor="@color/black"
    android:textSize="16dp"
    android:textStyle="bold|italic" />
</LinearLayout>
<ImageView
    android:id="@+id/imageView2"
    android:layout_width="500dp"
    android:layout_marginTop="20dp"
    android:layout_height="30dp"
    app:srcCompat="@drawable/ff" />
<ImageView
    android:id="@+id/imageView7"
    android:layout_width="580dp"
    android:layout_marginTop="20dp"
    android:layout_height="30dp"
    app:srcCompat="@drawable/in" />
<ImageView
    android:id="@+id/imageView8"
    android:layout_width="660dp"
    android:layout_marginTop="20dp"
    android:layout_height="30dp"
    app:srcCompat="@drawable/gg" />
<ImageView
    android:id="@+id/imageView9"
    android:layout_width="740dp"
    android:layout_marginTop="20dp"
    android:layout_height="30dp"
    app:srcCompat="@drawable/tw" />
</androidx.cardview.widget.CardView>
</LinearLayout>
<ImageView
    android:id="@+id/imageView"
    android:layout_width="36dp"
    android:layout_height="50dp"
    android:layout_marginStart="70dp"
    android:layout_marginTop="110dp"
    android:layout_marginEnd="200dp"
    android:layout_marginBottom="47dp"
    app:layout_constraintBottom_toTopOf="@+id/textView3"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
```

```

app:layout_constraintTop_toTopOf="parent"
app:srcCompat="@drawable/ff" />
<ImageView
    android:id="@+id/imageView3"
    android:layout_width="46dp"
    android:layout_height="43dp"
    android:layout_marginStart="24dp"
    android:layout_marginTop="8dp"
    android:layout_marginEnd="200dp"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toEndOf="@+id/imageView"
    app:layout_constraintTop_toBottomOf="@+id/textView5"
    app:srcCompat="@drawable/tw" />
<ImageView
    android:id="@+id/imageView5"
    android:layout_width="38dp"
    android:layout_height="52dp"
    android:layout_marginStart="32dp"
    android:layout_marginTop="65dp"
    android:layout_marginEnd="150dp"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toEndOf="@+id/imageView3"
    app:layout_constraintTop_toTopOf="parent"
    app:srcCompat="@drawable/in" />
<CheckBox
    android:id="@+id/checkBox2"
    android:layout_width="59dp"
    android:layout_height="72dp"
    android:layout_marginStart="19dp"
    android:layout_marginTop="24dp"
    android:layout_marginEnd="32dp"
    android:layout_marginBottom="65dp"
    android:textSize="20sp"
    app:layout_constraintBottom_toTopOf="@+id/button2"
    app:layout_constraintEnd_toStartOf="@+id/textView10"
    app:layout_constraintHorizontal_bias="0.0"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/textView9" />
</androidx.constraintlayout.widget.ConstraintLayout>

```

Map Activity:

```
package com.example.geofencing;
```



```

import androidx.annotation.NonNull;
import androidx.core.app.ActivityCompat;
import androidx.core.content.ContextCompat;
import androidx.fragment.app.FragmentActivity;
import android.Manifest;
import android.app.PendingIntent;
import android.content.pm.PackageManager;
import android.graphics.Color;
import android.os.Build;
import android.os.Bundle;
import android.util.Log;
import android.widget.Toast;
import com.google.android.gms.location.Geofence;
import com.google.android.gms.location.GeofencingClient;
import com.google.android.gms.location.GeofencingRequest;
import com.google.android.gms.location.LocationServices;
import com.google.android.gms.maps.CameraUpdateFactory;
import com.google.android.gms.maps.GoogleMap;
import com.google.android.gms.maps.OnMapReadyCallback;
import com.google.android.gms.maps.SupportMapFragment;
import com.google.android.gms.maps.model.CircleOptions;
import com.google.android.gms.maps.model.LatLng;
import com.google.android.gms.maps.model.MarkerOptions;
import com.google.android.gms.tasks.OnFailureListener;
import com.google.android.gms.tasks.OnSuccessListener;
public class MapsActivity extends FragmentActivity implements OnMapReadyCallback,
    GoogleMap.OnMapLongClickListener {
    private static final String TAG = "MapsActivity";
    private GoogleMap mMap;
    private GeofencingClient geofencingClient;
    private GeofenceHelper geofenceHelper;
    private float GEOFENCE_RADIUS = 200;
    private String GEOFENCE_ID = "SOME_GEOFENCE_ID";
    private int FINE_LOCATION_ACCESS_REQUEST_CODE = 10001;
    private int BACKGROUND_LOCATION_ACCESS_REQUEST_CODE = 10002;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
45
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_maps);
        SupportMapFragment mapFragment = (SupportMapFragment) getSupportFragmentManager()

```

```

.findFragmentById(R.id.map);
mapFragment.getMapAsync(this);
geofencingClient = LocationServices.getGeofencingClient(this);
geofenceHelper = new GeofenceHelper(this);
}
@Override
public void onMapReady(GoogleMap googleMap) {
mMap = googleMap;
// Add a marker in Sydney and move the camera
LatLng eiffel = new LatLng(48.8589, 2.29365);
mMap.moveCamera(CameraUpdateFactory.newLatLngZoom(eiffel, 16));
enableUserLocation();
mMap.setOnMapLongClickListener(this);
}
private void enableUserLocation() {
if (ContextCompat.checkSelfPermission(this, Manifest.permission.ACCESS_FINE_LOCATION)
== PackageManager.PERMISSION_GRANTED) {
mMap.setMyLocationEnabled(true);
} else {
if (ActivityCompat.shouldShowRequestPermissionRationale(this,
Manifest.permission.ACCESS_FINE_LOCATION)) {
ActivityCompat.requestPermissions(this, new String[]
{Manifest.permission.ACCESS_FINE_LOCATION},
FINE_LOCATION_ACCESS_REQUEST_CODE);
} else {
ActivityCompat.requestPermissions(this, new String[]
{Manifest.permission.ACCESS_FINE_LOCATION},
FINE_LOCATION_ACCESS_REQUEST_CODE);
}
}
}
@Override
public void onRequestPermissionsResult(int requestCode, @NonNull String[] permissions,
@NonNull
int[] grantResults) {
if (requestCode == FINE_LOCATION_ACCESS_REQUEST_CODE) {
if (grantResults.length > 0 && grantResults[0] == PackageManager.PERMISSION_GRANTED)
{
mMap.setMyLocationEnabled(true);
} else {
//We do not have the permission..

```

```

}
}
if (requestCode == BACKGROUND_LOCATION_ACCESS_REQUEST_CODE) {
if (grantResults.length > 0 && grantResults[0] == PackageManager.PERMISSION_GRANTED)
{
Toast.makeText(this, "You can add geofences...", Toast.LENGTH_SHORT).show();
} else {
Toast.makeText(this, "Background location access is neccessary for geofences to trigger...",
Toast.LENGTH_SHORT).show
}
}
}
}
@Override
public void onMapLongClick(LatLng latLng) {
if (Build.VERSION.SDK_INT >= 29) {
//We need background permission
if (ContextCompat.checkSelfPermission(this,
Manifest.permission.ACCESS_BACKGROUND_LOCATION) ==
PackageManager.PERMISSION_GRANTED) {
handleMapLongClick(latLng);
} else {
if (ActivityCompat.shouldShowRequestPermissionRationale(this,
Manifest.permission.ACCESS_BACKGROUND_LOCATION)) {
ActivityCompat.requestPermissions(this, new String[]
{Manifest.permission.ACCESS_BACKGROUND_LOCATION},
BACKGROUND_LOCATION_ACCESS_REQUEST_CODE);
} else {
ActivityCompat.requestPermissions(this, new String[]
{Manifest.permission.ACCESS_BACKGROUND_LOCATION},
BACKGROUND_LOCATION_ACCESS_REQUEST_CODE);
}
}
} else {
handleMapLongClick(latLng);
}
}
private void handleMapLongClick(LatLng latLng) {
mMap.clear();
addMarker(latLng);
addCircle(latLng, GEOFENCE_RADIUS);
addGeofence(latLng, GEOFENCE_RADIUS);
}

```

```

}
private void addGeofence(LatLng latLng, float radius) {
    Geofence geofence = geofenceHelper.getGeofence(GEOFENCE_ID, latLng, radius,
    Geofence.GEOFENCE_TRANSITION_ENTER | Geofence.GEOFENCE_TRANSITION_DWELL |
    Geofence.GEOFENCE_TRANSITION_EXIT);
    GeofencingRequest geofencingRequest = geofenceHelper.getGeofencingRequest(geofence);
    PendingIntent pendingIntent = geofenceHelper.getPendingIntent();
    geofencingClient.addGeofences(geofencingRequest, pendingIntent)
    .addOnSuccessListener(new OnSuccessListener<Void>() {
        @Override
        public void onSuccess(Void aVoid) {
            Log.d(TAG, "onSuccess: Geofence Added...");
        }
    })
    .addOnFailureListener(new OnFailureListener() {
        @Override
        public void onFailure(@NonNull Exception e) {
            String errorMessage = geofenceHelper.getErrorString(e);
            Log.d(TAG, "onFailure: " + errorMessage);
        }
    });
}
private void addMarker(LatLng latLng) {
    MarkerOptions markerOptions = new MarkerOptions().position(latLng);
    mMap.addMarker(markerOptions);
}
private void addCircle(LatLng latLng, float radius) {
    CircleOptions circleOptions = new CircleOptions();
    circleOptions.center(latLng);
    circleOptions.radius(radius);
    circleOptions.strokeColor(Color.argb(255, 255, 0,0));
    circleOptions.fillColor(Color.argb(64, 255, 0,0));
    circleOptions.strokeWidth(4);
    mMap.addCircle(circleOptions);
}
}
}

```

Home.xml

```

<?xml version="1.0" encoding="utf-8"?>
<androidx.core.widget.NestedScrollView
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"

```

```
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".MainActivity3">
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical">
    <androidx.cardview.widget.CardView
        android:id="@+id/b2"
        android:layout_width="536dp"
        android:layout_height="60dp"
        android:layout_margin="0dp"
        app:cardBackgroundColor="#030F37"
        app:cardCornerRadius="0dp">
        <TextView
            android:layout_width="match_parent"
            android:layout_height="match_parent"
            android:layout_marginTop="15sp"
            android:layout_marginRight="440dp"
            android:text=" Safe Zone"
            android:textAlignment="center"
            android:textColor="@color/white"
            android:textSize="20dp"
            android:textStyle="bold|italic" />
        <Button
            android:id="@+id/register1"
            android:layout_width="50dp"
            android:layout_height="50dp"
            android:layout_marginLeft="340dp"
            android:layout_marginTop="1sp"
            android:background="#0421D6"
            android:text="Login/Register"
            android:textSize="11dp"
            android:textColor="@color/white"
            android:textStyle="bold|italic" />
        <TextView
            android:id="@+id/home1"
            android:layout_width="match_parent"
            android:layout_height="match_parent"
            android:layout_marginLeft="130dp"
```

```
android:layout_marginTop="15sp"
android:text="Home"
android:onClick="home1"
android:textColor="#7B82AE"
android:textSize="14dp" />
<TextView
android:id="@+id/about1"
android:onClick="about1"
android:layout_width="match_parent"
android:layout_height="match_parent"
android:layout_marginLeft="175dp"
android:layout_marginTop="15sp"
android:text="About"
android:textColor="#7B82AE"
android:textSize="14dp" />
<TextView
android:id="@+id/ser1"
android:onClick="ser1"
android:layout_width="match_parent"
android:layout_height="match_parent"
android:layout_marginLeft="220dp"
android:layout_marginTop="15sp"
android:text="Services"
android:textColor="#7B82AE"
android:textSize="14dp" />
<TextView
android:id="@+id/con1"
android:onClick="con1"
android:layout_width="match_parent"
android:layout_height="match_parent"
android:layout_marginLeft="280dp"
android:layout_marginTop="15sp"
android:text="Contact"
android:textColor="#7B82AE"
android:textSize="14dp" />
</androidx.cardview.widget.CardView>
<androidx.cardview.widget.CardView
android:id="@+id/b92"
android:layout_width="536dp"
android:layout_height="650dp"
android:layout_margin="0dp"
```

```

app:cardBackgroundColor="#0E277E"
app:cardCornerRadius="0dp">
<ImageView
android:id="@+id/imageView8"
android:layout_width="400dp"
android:layout_height="300dp"
android:layout_marginTop="20dp"
app:srcCompat="@drawable/home" />
<TextView
android:layout_width="400dp"
android:layout_height="match_parent"
android:layout_marginTop="320dp"
android:text="Containment Zone
Alerting Application"
android:textColor="@color/white"
android:textSize="30dp"
android:textStyle="italic|bold"
android:textAlignment="center"
/>
<TextView
android:layout_width="400dp"
android:layout_marginTop="410dp"
android:layout_height="match_parent"
android:text="We may give a save zone details when the user passing through the containmentd
zone via alert message. We include a google map for registered user to track where they are
pass and
where the containmented zone present neary by the user."
android:textColor="@color/white"
android:textStyle="normal"
android:textAlignment="center"
/>
<EditText
android:id="@+id/editTextTextPersonName"
android:layout_width="250dp"
android:layout_height="40dp"
android:layout_marginStart="20dp"
android:layout_marginTop="510dp"
android:layout_marginEnd="153dp"
android:background="@drawable/edit_text_border"
android:ems="10"
android:hint="ZIP code or City to Know the COVID-19 case details"

```

```
android:inputType="textPersonName"
android:textColor="@color/white"
android:backgroundTint="@color/white"
android:textColorHighlight="#B5B9CD"
android:textColorLink="#0E0E0E"
android:textSize="15dp"
android:textColorHint="#B5B9CD"
android:textStyle="italic"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.142"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/textView4" />
<Button
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Search"
android:textColor="@color/white"
android:layout_marginTop="505dp"
android:layout_marginLeft="280dp"
android:background="#0421D6"
/>
<TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginLeft="10dp"
android:textColor="@color/white"
android:textStyle="bold|italic"
android:layout_marginTop="600dp"
android:text="Active Cases"/>
<TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginLeft="20dp"
android:textColor="@color/white"
android:textStyle="bold|italic"
android:layout_marginTop="570dp"
android:text="232"/>
<TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginLeft="100dp"
```



```
android:textColor="@color/white"
android:textStyle="bold|italic"
android:layout_marginTop="600dp"
android:text="Deaths"/>
<TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginLeft="110dp"
android:textColor="@color/white"
android:textStyle="bold|italic"
android:layout_marginTop="570dp"
android:text="521"/>
<TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginLeft="200dp"
android:textColor="@color/white"
android:textStyle="bold|italic"
android:layout_marginTop="570dp"
android:text="1453"/>
<TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginLeft="200dp"
android:textColor="@color/white"
android:textStyle="bold|italic"
android:layout_marginTop="600dp"
android:text="Cured"/>
<TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginLeft="300dp"
android:textColor="@color/white"
android:textStyle="bold|italic"
android:layout_marginTop="600dp"
android:text="Total Cases"/>
<TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginLeft="320dp"
android:textColor="@color/white"
```

```

        android:textStyle="bold|italic"
        android:layout_marginTop="570dp"
        android:text="32"/>
    </androidx.cardview.widget.CardView>
    <ImageView
        android:id="@+id/imageView2"
        android:layout_width="389dp"
        android:layout_height="200dp"
        android:layout_marginLeft="0dp"
        android:layout_marginTop="20dp"
        android:layout_marginRight="44dp"
        app:srcCompat="@drawable/about" />
    <TextView
        android:id="@+id/about2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="About Us"
        android:textColor="#061568"
        android:textStyle="italic|bold"
        android:layout_marginTop="20dp"
        android:layout_marginLeft="60dp"
        android:textSize="30dp"/>
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="We offer a platform to alert users who register on our website when they enter a
        COVID19 infected zone area using Google Maps, and we help users create the ideal path to safe
        family
        travel."
        android:textColor="@color/black"
        android:textStyle="normal"
        android:layout_marginTop="10dp"
        android:textAlignment="viewStart"
        android:layout_marginLeft="60dp"
    />
    <TextView
        android:id="@+id/View333"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textStyle="bold|italic"
        android:layout_marginLeft="60dp"

```

```

android:layout_marginTop="20dp"
android:text="Suggest an alternative path"
android:textSize="20dp"
android:textColor="#061568"
/>
<TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="We give a suggestion for alternative path to reach your destination via google map
as given in our site"
android:textColor="@color/black"
android:textStyle="normal"
android:layout_marginTop="10dp"
android:textAlignment="viewStart"
android:layout_marginLeft="60dp"
/>
<TextView
android:id="@+id/View34"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginLeft="60dp"
android:layout_marginTop="20dp"
android:textStyle="italic|bold"
android:text="Marking a infected area"
android:textSize="20dp"
android:textColor="#061568"
/>
<TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="We should mark a infected area with the different color circle shaped marker
which
denotes the infection"
android:textColor="@color/black"
android:textStyle="normal"
android:layout_marginTop="10dp"
android:textAlignment="viewStart"
android:layout_marginLeft="60dp"
/>
<TextView
android:id="@+id/View35"

```

```

        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginLeft="60dp"
        android:layout_marginTop="20dp"
        android:textStyle="bold|italic"
        android:text="Location Service"
        android:textSize="20dp"
        android:textColor="#061568"
    />
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="130dp"
        android:text="We request you to allow us to access your location then only we can able to track
        our location coordinates and notify yours"
        android:textColor="@color/black"
        android:textStyle="normal"
        android:layout_marginTop="10dp"
        android:textAlignment="viewStart"
        android:layout_marginLeft="60dp"
    />
    <androidx.cardview.widget.CardView
        android:id="@+id/b32"
        android:layout_width="456dp"
        android:layout_height="200dp"
        android:layout_margin="0dp"
        app:cardBackgroundColor="#EFBCAC"
        app:cardCornerRadius="0dp">
        <LinearLayout
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:gravity="center"
            android:orientation="vertical">
            <TextView
                android:id="@+id/about32"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
                android:layout_marginTop="30dp"
                android:text="Call To Action"
                android:textColor="@color/white"
                android:textAlignment="viewStart"
                android:textSize="30dp"

```

```

        android:textStyle="italic|bold" />
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textColor="#F6ECE9"
        android:layout_marginLeft="0dp"
        android:textAlignment="viewStart"
        android:text="Click the button as shown in below to redirect you to our googel map api and
        monitor to protect you and your family form COVID 19 zone."
        android:textStyle="normal" />
    <Button
        android:id="@+id/click1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="10dp"
        android:background="#CF856E"
        android:text="Call to Action"
        android:textStyle="normal"
        android:textColor="@color/white" />
</LinearLayout>
</androidx.cardview.widget.CardView>
<ImageView
    android:id="@+id/imageView5"
    android:layout_width="381dp"
    android:layout_height="233dp"
    android:layout_marginLeft="0dp"
    android:layout_marginTop="100dp"
    android:layout_marginRight="44dp"
    app:srcCompat="@drawable/book" />
<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="What we do ?."
    android:textColor="#061568"
    android:textStyle="italic|bold"
    android:layout_marginTop="10dp"
    android:textAlignment="viewStart"
    android:layout_marginLeft="60dp"
    android:textSize="25dp"
/>
<TextView

```

```

android:id="@+id/imageView67"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginLeft="60dp"
android:textStyle="normal"
android:textAlignment="viewStart"
android:textColor="@color/black"
android:text="We detect your location coordinates with your permission by click the allow button
when you enter into our googel map api and notify you when your coordintes enters into the
containmented zone."
android:layout_marginTop="20dp" />
<TextView
android:id="@+id/imageView637"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginLeft="60dp"
android:textStyle="normal"
android:textAlignment="viewStart"
android:textColor="@color/black"
android:text=" Track your location."
android:layout_marginTop="10dp" />
<TextView
android:id="@+id/imageView627"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginLeft="60dp"
android:textStyle="normal"
android:textAlignment="viewStart"
android:textColor="@color/black"
android:text="Get your coordinates and make a live tracker."
android:layout_marginTop="10dp" />
<TextView
android:id="@+id/imageView617"
android:layout_width="wrap_content"
android:layout_height="100dp"
android:layout_marginLeft="60dp"
android:textStyle="normal"
android:textAlignment="viewStart"
android:textColor="@color/black"
android:text="Alert you to enter into the specified zone."
android:layout_marginTop="10dp" />

```

```
<ImageView
android:id="@+id/imageView73"
android:layout_width="377dp"
android:layout_height="216dp"
android:layout_marginLeft="10dp"
android:layout_marginTop="0dp"
android:layout_marginRight="44dp"
app:srcCompat="@drawable/moblie" />
<TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="What do you do ?."
android:textColor="#061568"
android:textStyle="italic|bold"
android:layout_marginTop="20dp"
android:layout_marginLeft="60dp"
android:textSize="30dp" />
<ImageView
android:id="@+id/imageView9"
android:layout_width="377dp"
android:layout_height="100dp"
android:layout_marginLeft="0dp"
android:layout_marginTop="40dp"
android:layout_marginRight="44dp"
app:srcCompat="@drawable/tex" />
<ImageView
android:id="@+id/imageView3"
android:layout_width="377dp"
android:layout_height="200dp"
android:layout_marginLeft="0dp"
android:layout_marginTop="40dp"
android:layout_marginRight="44dp"
app:srcCompat="@drawable/bag" />
<ImageView
android:id="@+id/imageViewt"
android:layout_width="389dp"
android:layout_height="136dp"
android:layout_marginLeft="0dp"
android:layout_marginTop="20dp"
android:layout_marginRight="44dp"
app:srcCompat="@drawable/ttt" />
```

```

<androidx.cardview.widget.CardView
android:id="@+id/b02"
android:layout_width="395dp"
android:layout_height="500dp"
android:layout_margin="0dp"
app:cardBackgroundColor="#030F37"
app:cardCornerRadius="0dp">
<TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Safe Zone"
android:textColor="@color/white"
android:textStyle="italic|bold"
android:layout_marginTop="0dp"
android:layout_marginLeft="20dp"
android:textSize="30dp"/>
<TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="We may give a save zone details when the user passing through the containmentd
zone via alert message. We include a google map for registered user to track where they are
pass and
where the containmented zone present neary by the user."
android:textColor="@color/white"
android:textStyle="normal"
android:layout_marginTop="50dp"
android:textAlignment="viewStart"
android:layout_marginLeft="20dp"
/>
<ImageView
android:layout_width="35dp"
android:layout_height="35dp"
android:layout_marginTop="150dp"
app:srcCompat="@drawable/ff"
android:layout_marginLeft="50dp"/>
<ImageView
android:layout_width="35dp"
android:layout_height="35dp"
android:layout_marginTop="150dp"
app:srcCompat="@drawable/in"
android:layout_marginLeft="100dp"/>

```



```
<ImageView
android:layout_width="35dp"
android:layout_height="35dp"
android:layout_marginTop="150dp"
app:srcCompat="@drawable/gg"
android:layout_marginLeft="150dp"/>
<ImageView
android:layout_width="35dp"
android:layout_height="35dp"
android:layout_marginTop="150dp"
app:srcCompat="@drawable/tw"
android:layout_marginLeft="200dp"/>
<TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Useful Links"
android:textColor="@color/white"
android:textStyle="italic|bold"
android:layout_marginTop="200dp"
android:layout_marginLeft="20dp"
android:textSize="20dp"/>
<TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Home"
android:textColor="#B5B9CD"
android:textStyle="normal"
android:layout_marginTop="240dp"
android:layout_marginLeft="20dp" />
<TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="About Us"
android:textColor="#B5B9CD"
android:textStyle="normal"
android:layout_marginTop="270dp"
android:layout_marginLeft="20dp" />
<TextView
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Services"
```

```
        android:textColor="#B5B9CD"
        android:textStyle="normal"
        android:layout_marginTop="300dp"
        android:layout_marginLeft="20dp" />
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Terms of Services"
        android:textColor="#B5B9CD"
        android:textStyle="normal"
        android:layout_marginTop="330dp"
        android:layout_marginLeft="20dp" />
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Privacy policy"
        android:textColor="#B5B9CD"
        android:textStyle="normal"
        android:layout_marginTop="360dp"
        android:layout_marginLeft="20dp" />
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Our services"
        android:textColor="@color/white"
        android:textStyle="italic|bold"
        android:layout_marginTop="200dp"
        android:layout_marginLeft="250dp"
        android:textSize="20dp"/>
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Web Application"
        android:textColor="#B5B9CD"
        android:textStyle="normal"
        android:layout_marginTop="240dp"
        android:layout_marginLeft="250dp" />
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Mobile Application"
```

```

        android:textColor="#B5B9CD"
        android:textStyle="normal"
        android:layout_marginTop="270dp"
        android:layout_marginLeft="250dp" />
<TextView
    android:id="@+id/con2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Contact Us"
    android:textColor="@color/white"
    android:textStyle="italic|bold"
    android:layout_marginTop="400dp"
    android:layout_marginLeft="150dp"
    android:textSize="25dp" />
<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="© Copyright. Containment zone alerting application"
    android:textColor="@color/white"
    android:textStyle="normal"
    android:layout_marginTop="450dp"
    android:layout_marginLeft="50dp"
/>
</androidx.cardview.widget.CardView>
</LinearLayout>
</androidx.core.widget.NestedScrollView>
Geofence Broadcast Receiver:
package com.example.geofencing;
import android.content.BroadcastReceiver;
import android.content.Context;
import android.content.Intent;
import android.location.Location;
import android.util.Log;
import android.widget.Toast;
import com.google.android.gms.location.Geofence;
import com.google.android.gms.location.GeofencingEvent;
import java.util.List;
public class GeofenceBroadcastReceiver extends BroadcastReceiver {
    private static final String TAG = "GeofenceBroadcastReceiv";
    @Override
    public void onReceive(Context context, Intent intent) {

```

```

NotificationHelper notificationHelper = new NotificationHelper(context);
GeofencingEvent geofencingEvent = GeofencingEvent.fromIntent(intent);
if (geofencingEvent.hasError()) {
    Log.d(TAG, "onReceive: Error receiving geofence event...");
    return;
}
List<Geofence> geofenceList = geofencingEvent.getTriggeringGeofences();
for (Geofence geofence: geofenceList) {
    Log.d(TAG, "onReceive: " + geofence.getRequestId());
}
int transitionType = geofencingEvent.getGeofenceTransition();
switch (transitionType) {
    case Geofence.GEOFENCE_TRANSITION_ENTER:
        Toast.makeText(context, "GEOFENCE_TRANSITION_ENTER",
            Toast.LENGTH_SHORT).show();
        notificationHelper.sendHighPriorityNotification("GEOFENCE_TRANSITION_ENTER", "",
            MapsActivity.class);
        break;
    case Geofence.GEOFENCE_TRANSITION_DWELL:
        Toast.makeText(context, "GEOFENCE_TRANSITION_DWELL",
            Toast.LENGTH_SHORT).show();
        notificationHelper.sendHighPriorityNotification("GEOFENCE_TRANSITION_DWELL", "",
            MapsActivity.class);
        break;
    case Geofence.GEOFENCE_TRANSITION_EXIT:
        Toast.makeText(context, "GEOFENCE_TRANSITION_EXIT",
            Toast.LENGTH_SHORT).show();
        notificationHelper.sendHighPriorityNotification("GEOFENCE_TRANSITION_EXIT", "",
            MapsActivity.class);
        break;
}
}
}

```

Forgot Password.xml:

```

<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"

```

```

tools:context=".forgotpassord">
<TextView
    android:id="@+id/textView3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="160dp"
    android:layout_marginTop="120dp"
    android:layout_marginEnd="193dp"
    android:layout_marginBottom="32dp"
    android:text="-----or-----"
    android:textSize="20sp"
    android:textStyle="italic"
    app:layout_constraintBottom_toTopOf="@+id/textView4"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.445"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />
<TextView
    android:id="@+id/textView4"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="26dp"
    android:layout_marginTop="20dp"
    android:layout_marginEnd="214dp"
    android:text="Email Address:"
    android:textColor="#020202"
    android:textSize="24sp"
    android:textStyle="italic"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/textView3" />
<EditText
    android:id="@+id/editTextTextPersonName"
    android:layout_width="350dp"
    android:layout_height="40dp"
    android:layout_marginStart="50dp"
    android:layout_marginTop="12dp"
    android:layout_marginEnd="153dp"
    android:background="@drawable/edit_text_border"
    android:ems="10"
    android:hint="Enter a valid email address"

```

```

android:inputType="textPersonName"
android:textColor="#0E0E0E"
android:textColorHighlight="#131313"
android:textColorLink="#0E0E0E"
android:textSize="20sp"
android:textStyle="italic"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.142"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/textView4" />
<LinearLayout
    android:layout_marginTop="650dp"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical">
    <androidx.cardview.widget.CardView
        android:id="@+id/b2"
        android:layout_width="536dp"
        android:layout_height="100dp"
        android:layout_margin="0dp"
        app:cardBackgroundColor="#0D42FF"
        app:cardCornerRadius="0dp">
        <LinearLayout
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:gravity="center"
            android:orientation="vertical">
            <TextView
                android:layout_width="match_parent"
                android:layout_height="match_parent"
                android:layout_marginTop="22sp"
                android:text="Containment Zone Detection"
                android:textAlignment="center"
                android:textColor="@color/black"
                android:textSize="16dp"
                android:textStyle="bold|italic" />
            </LinearLayout>
            <ImageView
                android:id="@+id/imageView2"
                android:layout_width="500dp"
                android:layout_marginTop="20dp"

```

```
        android:layout_height="30dp"
        app:srcCompat="@drawable/ff" />
        <ImageView
            android:id="@+id/imageView7"
            android:layout_width="580dp"
            android:layout_marginTop="20dp"
            android:layout_height="30dp"
            app:srcCompat="@drawable/in" />
        <ImageView
            android:id="@+id/imageView8"
            android:layout_width="660dp"
            android:layout_marginTop="20dp"
            android:layout_height="30dp"
            app:srcCompat="@drawable/gg" />
        <ImageView
            android:id="@+id/imageView9"
            android:layout_width="740dp"
            android:layout_marginTop="20dp"
            android:layout_height="30dp"
            app:srcCompat="@drawable/tw" />
    </androidx.cardview.widget.CardView>
</LinearLayout>
<TextView
    android:id="@+id/textView13"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginStart="169dp"
    android:layout_marginTop="51dp"
    android:layout_marginEnd="184dp"
    android:text="Forgot Password"
    android:textColor="#0E0D0D"
    android:textSize="34sp"
    android:textStyle="italic"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toTopOf="parent" />
    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="136dp"
```

```
android:layout_marginTop="25dp"
android:layout_marginEnd="181dp"
android:background="@color/purple_700"
android:text="Submit"
android:textColor="@color/white"
android:textSize="20sp"
android:textStyle="italic"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/editTextTextPersonName" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

GitHub & Project Demo Link:

PROJECT LINK:

[IBM-EPBL/IBM-Project-16091-1659607399](https://github.com/IBM-EPBL/IBM-Project-16091-1659607399)

DEMO LINK:

<https://drive.google.com/drive/folders/1PJfgAEM66WMYzmY0A6IMBFev7DmydTjV?usp=sharing>