Project Development Phase
Sprint-1

Team ID	PNT2022TMID13325
Project Name	Containment zone alerting application

Home.html

```
<!Doctype html>

<html>

   <head>

      <title>Dashboard</title>

      <link rel="stylesheet" href="static/style.css">

      <link rel="preconnect" href="https://fonts.googleapis.com">

<link rel="preconnect" href="https://fonts.gstatic.com" crossorigin>

<link href="https://fonts.googleapis.com/css2?family=Open+Sans&display=swap"
rel="stylesheet">

      <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://stackpath.bootstrapcdn.com/bootstrap/4.4.1/css/bootstrap.min.css"

integrity="sha384-Vkoo8x4CGsO3+Hhxv8T/Q5PaXtkKtu6ug5TOeNV6gBiFeWPGFN9MuhO
f23Q9Ifjh" crossorigin="anonymous" />

   <style>


      body {

         padding-top: 30px;

         padding-bottom: 30px;

         background-color: #0C1017;

         color : #F0F6FC;

         font-family: 'Open Sans', sans-serif;

         padding: 30px;

      }
```

```
        .m-3 float-right {
            background-color : #0C1017;


        }


        a {
            color: #F0F6FC;


        }
<!--       design the whole html page to beautify-->



    </style>
    </head>
    <body>
     {% if success %}
    <script>
        alert("Location Uploaded Successfully");
    </script>
     {% elif not success %}
    <script>
        alert("Enter Proper Location data");
    </script>
    {% endif %}
    <div class="logout">
        <button type="button" class="btn btn-primary"><a href={{url_for("logout")}}>Log
Out</a></button>
    </div>
    <div class="logout">
        <h1>Declare Containment Zone</h1>
    </div>


        <h2>Welcome: {{name}}</h2>
    <form method="POST" action="/home">
        <div class="container">
            <div class="form-group row">
                <div class="col-sm-6">
                    <label class="control-label">Lat.:</label>
                    <input type="text" class="form-control" id="lat" name="lat" />
                </div>
                <div class="col-sm-6">
                    <label>Long.:</label>
                    <input type="text" class="form-control" id="lon" name="lon" />
                </div>
                <div class="col-sm-6">
                    <label>Get current Location:</label>
                    <button type="button" class="btn btn-warning" onclick="getLocation()">Current
Location</button>
                    <label>(Click this first)</label>
                </div>
            </div>

            <!-- map -->
            <div id="map_disp" style="height: 400px;width: 500px;"></div>
            <div class="m-3 float-right">
                <button type="submit" class="btn btn-danger">Declare Containment
Zone</button>
            </div>
            <div class="m-3">
                <button onclick="toggleTips()" type="button" class="btn
btn-secondary">Tutorial</button>
                <div id="tips" class="m-3">
                    <ol>
                        <li>Select The Location By Clicking the Current Location Button</li>
                        <li>Drag the Pin to change the location</li>
                        <li>Click on Declare Containment Zone to save the location to the database
</li>
                    </ol>
                </div>
            </div>
            <div class="m-3 float-right">
                <button type="button" class="btn btn-warning"><a href="{{url_for('data')}}">Click
Here To View The
                        Containment Zones and Number of
                        people visited</a></button>
            </div>
        </div>

        <script src="https://cdn.jsdelivr.net/npm/bootstrap@4.6.0/dist/js/bootstrap.min.js"

integrity="sha384-+YQ4JLhjyBLPDQt//I+STsc9iw4uQqACwlvpslubQzn4u2UU2UFM80nGisd
026JF"
            crossorigin="anonymous"></script>
        <script src="https://code.jquery.com/jquery-2.2.4.min.js"></script>
        <script
src="https://maps.google.com/maps/api/js?sensor=false&amp;libraries=places"></script>
        <script

src="https://rawgit.com/Logicify/jquery-locationpicker-plugin/master/dist/locationpicker.jquery.
js"></script>

        <script>
            function getLocation() {
                if (navigator.geolocation) {
                    navigator.geolocation.getCurrentPosition(showPosition);
                } else {
                    alert("No location");
                }
            }
            function showPosition(position) {
                $('#map_disp').locationpicker({
                    location: {
                        latitude: position.coords.latitude,
                        longitude: position.coords.longitude
                    },
                    radius: 0,
                    inputBinding: {
                        latitudeInput: $('#lat'),
                        longitudeInput: $('#lon'),
                    },
                    enableAutocomplete: true,
                    onchanged: function (currentLocation, radius, isMarkerDropped) {
                        // Uncomment line below to show alert on each Location Changed event
                        // alert("Location changed. New location (" + currentLocation.latitude + ", " +
currentLocation.longitude + ")");
                    }
                });
            }
            function toggleTips() {
                var x = document.getElementById("tips");
                if (x.style.display === "none") {
                    x.style.display = "block";
                } else {
                    x.style.display = "none";
                }
            }
        </script>

    </form>
    </body>
</html>
```

App.py

```
import os

import re

import ibm_db

import requests

from flask import *

from glances.globals import json_dumps

from sendgrid import SendGridAPIClient

from sendgrid.helpers.mail import Mail


app = Flask(__name__, static_url_path='/static', static_folder='static',
template_folder='templates')

app.secret_key = 'sus'

conn = ibm_db.pconnect("DATABASE=BLUDB;"

"HOSTNAME=54a2f15b-5c0f-46df-8954-7e38e612c2bd.c1ogj3sd0tgtu0lqde00.databases.a
ppdomain.cloud;"

                    "PORT=32733;"

                    "UID=dnp80914;PWD=5OtVWHTwkHw2GmU3;"

                    "PROTOCOL=TCPIP;"

                    "Security=SSL;"

                    "sslConnection=true;"

                    "SSLServerCertificate=DigiCertGlobalRootCA.crt;"

                    "", "", "")


# print("Connected to database", conn)


session = {}

# import sendgrid environment variables

api_key = os.environ.get('API_KEY')

api_key2 = os.environ.get('API2')
```

```
# route for sending email

def sendemail(mail):
    message = Mail(
        from_email='aswin2kumarforme@gmail.com',
        to_emails=mail,
        subject='Cautious Alert',
        html_content='<h1>You are entering into contaminated zone!!</h1>'
                     '<p>Stay safe and take necessary precautions</p><br>'
                     '<p>Thank you</p><br>'
                     '<p>Team Cautious Alert</p>')
    try:
        sg = SendGridAPIClient(api_key)
        response = sg.send(message)
        print(response.status_code)
        print(response.body)
        print(response.headers)
    except Exception as e:
        print(e.message)


# create a sent email function using sendinblue
def send_conf_email(email):
    url = "https://api.sendinblue.com/v3/smtp/email"
    payload = {
        "sender": {
            "name": "Aswin Kumar",
            "email": "aswin@smartinternz.com"
        },
        "to": [
            {
                "email": email,
                "name": 'Hey'
            }
        ],
        "subject": "Confirming Registration",
        "htmlContent": "<h1>Thank you for registering with us</h1>"
                       "<p>Stay safe and take necessary precautions</p><br>"
                       "<p>Thank you</p><br>"
                       "<p>Team Cautious Alert</p>",
    }
    headers = {
        'accept': "application/json",
        'content-type': "application/json",
        'api-key': api_key2
    }
    response = requests.request("POST", url, data=json.dumps(payload), headers=headers)
    print(response.text)


@app.route('/', methods=['GET', 'POST'])
def register():
    message = ''
    if request.method == 'POST':
        # get the data from the form
        name = request.form['username']
        email = request.form['email']
        password = request.form['password']
        confirm_password = request.form['confirm_password']
        # if nothing is entered in the form
        if not name or not email or not password or not confirm_password:
            message = 'Please fill all the fields!'
            return render_template('register.html', message=message)
        # if the password and confirm password do not match
```

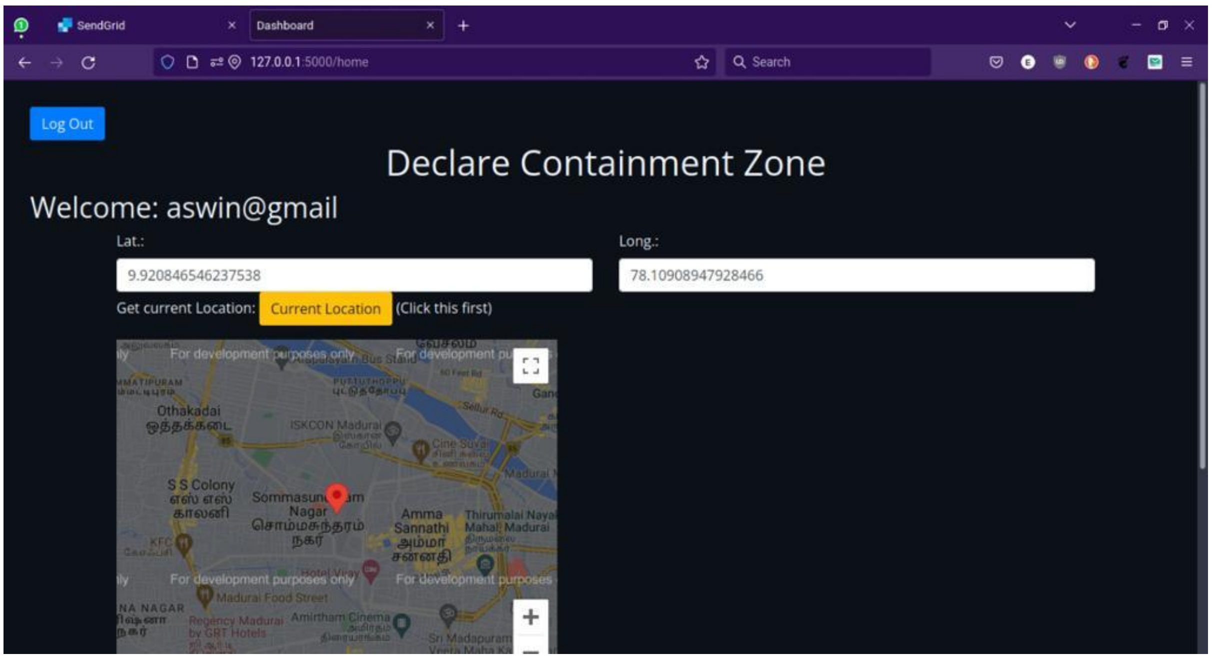
```
        elif password != confirm_password:
            message = 'Passwords do not match!'
            return render_template('register.html', message=message)


        #  password length must be 8 or above
        if len(password) < 8:
            message = 'Password must be 8 or more characters'
            return render_template('register.html', message=message)
        # check if the email is valid
        if re.match(r"[^@]+@[^@]+\.[^@]+", email):
            # insert the data into the database
            # check if email already exists in the database
            sql = "SELECT * FROM users WHERE email = '" + email + "'"
            stmt = ibm_db.exec_immediate(conn, sql)
            # print("stmt", stmt)
            result = ibm_db.fetch_assoc(stmt)
            # print("result", result)
            if result:
                message = 'The username or email already exists!'
            else:
                sql = "INSERT INTO users (id, username, email, password,type) VALUES
(seq_person.nextval,'" + name + \
                      "', '" + email + "', '" + password + "', 1) "
                ibm_db.exec_immediate(conn, sql)
                # send confirmation email
                send_conf_email(email)
                return redirect(url_for('login'))
        else:
            message = 'The email is invalid!'
    return render_template('register.html', message=message)



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

```
def login():
    message = ''
    if request.method == 'POST':
        # get the data from the form
        email = request.form['email']
        password = request.form['password']
        # if nothing is entered in the form
        if not email or not password:
            message = 'Please fill all the fields!'
            return render_template('login.html', message=message)
        # check if the username and password are valid
        sql = "SELECT * FROM users WHERE email = '" + email + "' AND password = '" +
password + "'"
        stmt = ibm_db.exec_immediate(conn, sql)
        result = ibm_db.fetch_assoc(stmt)
        # print("result", result)
        if result:
            # message = 'You have successfully logged in!'
            session['id'] = result['ID']
            session['username'] = result['USERNAME']
            session['email'] = result['EMAIL']
            # print("id ==", session['id'])
            return redirect(url_for('home'))
        else:
            message = 'The email or password is incorrect!'
    return render_template('login.html', message=message)



@app.route('/logout')
def logout():
    session.clear()
    return redirect(url_for('login'))
```

```
# create a route for the home page and open only if the user is logged in
@app.route('/home', methods=['GET', 'POST'])
def home():
    # print(name)


    if 'id' in session:
        if request.method == 'GET':
            return render_template('home.html', name=session['username'])
        if request.method == "POST":
            # get data
            lat = request.form["lat"]
            lon = request.form["lon"]
            if lat == "" or lon == "":
                return render_template('home.html', name=session['username'],
email=session['email'], id=session['id'],
                                       success=0)
            #       create a query to insert the data into the database
            sql = "INSERT INTO inf_location (locate_id, locate_lat, locate_lang, visited) VALUES
(seq_loc.nextval,'" \
                  + lat + "', '" + lon + "', 0)"
            #       execute the query
            ibm_db.exec_immediate(conn, sql)
            return render_template('home.html', name=session['username'],
email=session['email'], id=session['id'],
                                   success=1)
        return render_template('home.html', success=0)
    else:
        return redirect(url_for('login'))



# create a route for the data page and open only if the user is logged in
@app.route('/data')
```

```
def data():
    if 'id' not in session:
        return redirect(url_for('login'))
    else:
        # create a query to fetch the data from the database
        sql = "SELECT * FROM inf_location"
        stmt = ibm_db.exec_immediate(conn, sql)
        # print("stmt", stmt)
        # fetch all the data from the database and store it in the result dictionary
        result = ibm_db.fetch_assoc(stmt)

        # create a list to store the data
        data = []
        # loop through the result dictionary and append the data to the list
        while result:
            data.append(result)
            result = ibm_db.fetch_assoc(stmt)
        # print(data)
        return render_template('data.html', data=data)


# android signup api
@app.route('/android_signup', methods=['POST'])
def android_signup():
    if request.method == 'POST':
        # get the data from the form
        name = request.json['name']
        email = request.json['email']
        password = request.json['password']
        # if nothing is entered in the form
        # check if the email is valid
        if re.match(r"[^@]+@[^@]+\.[^@]+", email):
            # insert the data into the database
            # check if email already exists in the database
            sql = "SELECT * FROM users WHERE email = '" + email + "'"
            stmt = ibm_db.exec_immediate(conn, sql)
            # print("stmt", stmt)
            result = ibm_db.fetch_assoc(stmt)
            # print("result", result)
            if result:
                return jsonify({"message": "The username or email already exists!"})


            else:
                sql = "INSERT INTO users (id, username, email, password,type) VALUES
(seq_person.nextval,'" + name + \
                      "', '" + email + "', '" + password + "', 2) "
                ibm_db.exec_immediate(conn, sql)
                # pass the id of the user to the android app
                sql = "SELECT * FROM users WHERE email = '" + email + "' AND password = '" +
password + "'"
                stmt = ibm_db.exec_immediate(conn, sql)
                result = ibm_db.fetch_assoc(stmt)
                return {"status": "success", "message": "You have successfully registered!", "id":
result['ID']}
        else:
            return jsonify({'message': 'The email is invalid!'})
    return jsonify({'message': 'The email is invalid!'})




# android get all users
# @app.route('/get_all_users', methods=['GET'])
# def get_all_users():
#     # create a query to fetch the data from the database
#     sql = "SELECT * FROM users"
#     stmt = ibm_db.exec_immediate(conn, sql)
#     # print("stmt", stmt)
#     # fetch all the data from the database and store it in the result dictionary
#     result = ibm_db.fetch_assoc(stmt)
#
#     # create a list to store the data
#     data = []
#     # loop through the result dictionary and append the data to the list
#     while result:
#         data.append(result)
#         result = ibm_db.fetch_assoc(stmt)
#     # print(data)
#     return {'data': data}


@app.route("/post_user_location_data", methods=["POST"])
def post_user_location_data():
    # get data
    lat = request.json["lat"]
    lon = request.json["long"]
    id1 = request.json["id"]
    ts = request.json['timestamp']
    #        create a query to insert the data into the database
    sql = "INSERT INTO location (LOCATE_LAT, LOCATE_LONG, USER_ID, TIME_STAMP)
VALUES ('" + lat + "', '" + lon + "', '" + str(
        id1) + "', '" + ts + "')"
    #        execute the query
    ibm_db.exec_immediate(conn, sql)
    return {"status": "success", "message": "You have successfully registered!"}



@app.route("/location_data")
def location_data():
    # create a query to fetch the data from the database
    sql = "SELECT * FROM inf_location"
    stmt = ibm_db.exec_immediate(conn, sql)
    # print("stmt", stmt)
    # fetch all the data from the database and store it in the result dictionary
    result = ibm_db.fetch_assoc(stmt)

    # create a list to store the data
    data = []
    # loop through the result dictionary and append the data to the list
    while result:
        data.append(result)
        ibm_db.fetch_assoc(stmt)
        # print(data)
        return json.dumps(data)

    else:
        return {"response": "failure"}



@app.route("/get_all_users")
def get_users():
    # create a query to fetch the data from the database
    sql = "SELECT * FROM users"
    stmt = ibm_db.exec_immediate(conn, sql)
    # print("stmt", stmt)
    # fetch all the data from the database and store it in the result dictionary
    result = ibm_db.fetch_assoc(stmt)
    if result:
        # create a list to store the data
        data = []
        # loop through the result dictionary and append the data to the list
        while result:
            data.append(result)
            result = ibm_db.fetch_assoc(stmt)
        # print(data)
        return json_dumps(data)

    # if(user_result > 0):
    #     rv = signup_cursor.fetchall()
    #     row_headers = [x[0] for x in signup_cursor.description]
    #     json_data = []
    #     for result in rv:
    #         json_data.append(dict(zip(row_headers, result)))
    #     return json.dumps(json_data)


@app.route("/send_trigger", methods=["POST"])
def send_trigger():
    if request.method == "POST":
        # get the data from the form
        email = request.json['email']
        location_id = request.json['id']
        # print("email and loc", email, location_id)
        # get location data
        sql = "SELECT VISITED FROM INF_LOCATION WHERE LOCATE_ID = '" +
str(location_id) + "'"
        stmt = ibm_db.exec_immediate(conn, sql)
        print("stmt", stmt)
        if stmt:
            result = ibm_db.fetch_assoc(stmt)
            if result:
                visited = result['VISITED']
                visited = visited + 1
                sql = "UPDATE INF_LOCATION SET VISITED = '" + str(visited) + "' WHERE
LOCATE_ID = '" + str(
                  location_id) + ""
                ibm_db.exec_immediate(conn, sql)

                ibm_db.exec_immediate(conn, sql)
                # send email
                # print("email ->", email)
                sendemail(email)
                return {"response": "Mail success"}
            else:
                return {"response": "Mail failed"}



if __name__ == '__main__':
    app.run(debug=True, host='0.0.0.0', port=5000)
```

ScreenShots



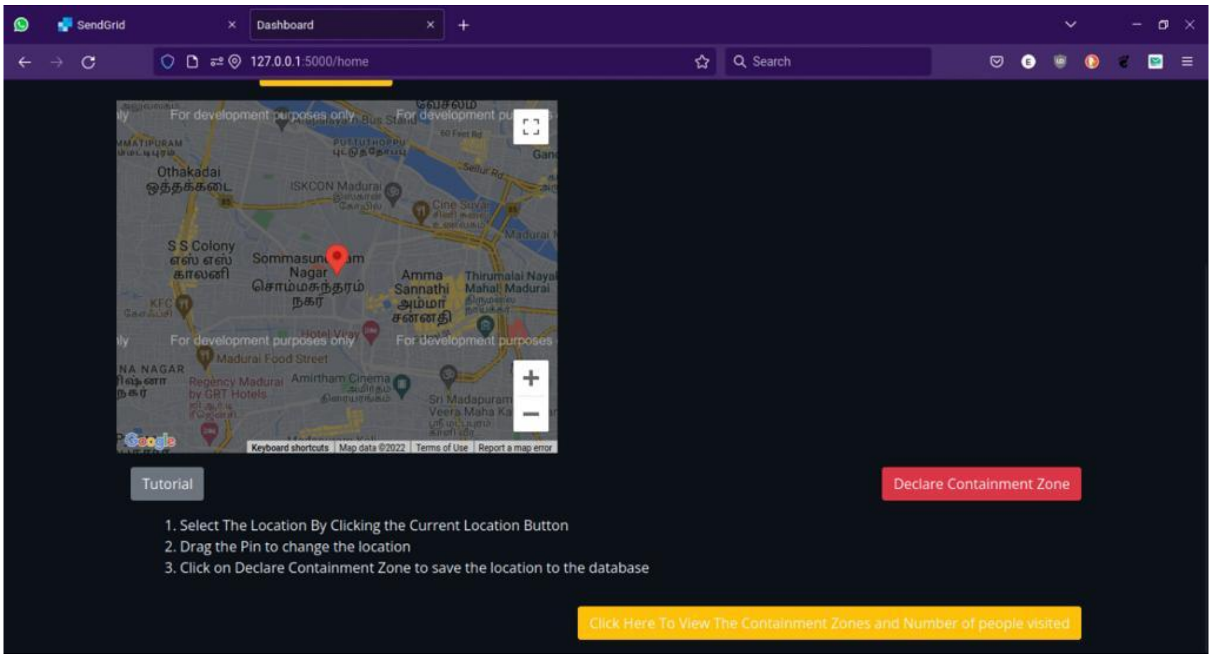
Declare Containment Zone

Welcome: aswin@gmail

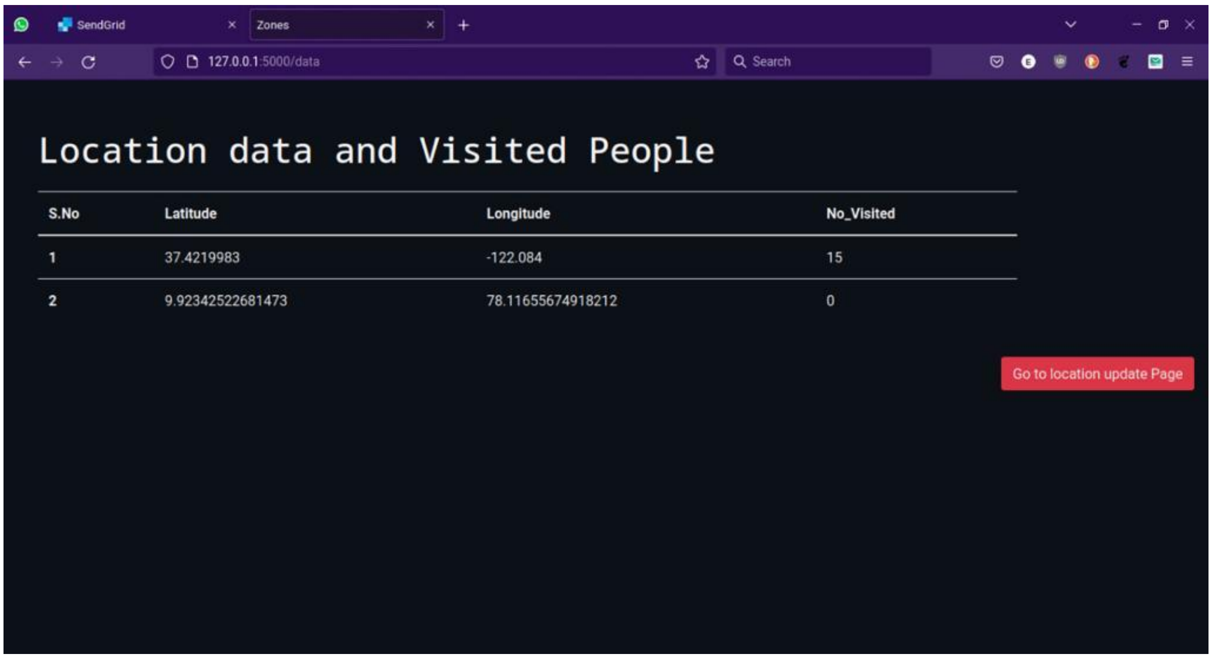
Lat.: 9.920846546237538

Long.: 78.10908947928466

Get current Location: Current Location (Click this first)



1. Select The Location By Clicking the Current Location Button
2. Drag the Pin to change the location
3. Click on Declare Containment Zone to save the location to the database



Location data and Visited People

S.No	Latitude	Longitude	No_Visited
1	37.4219983	-122.084	15
2	9.92342522681473	78.11655674918212	0