**PHASE IV PROJECT**

**PROJECT TITLE :** PUBLIC TRANSPORT OPTIMIZATION

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**TEAM NAME :** proj 201030 Team\_1

**SOURCE CODE :**

import time

import serial

import gpsd

from gsmmodem import GsmModem

# Define serial port for GPS communication

gps\_serial = serial.Serial('/dev/ttyUSB0', 9600)

# Initialize GSM modem

modem = GsmModem(port='/dev/ttyUSB1', baudrate=9600)

modem.connect('<your\_pin>', 'your\_gsm\_device')

# Function to send an SMS

def send\_sms(message, recipient):

modem.sendSms(recipient, message)

# Function to get GPS coordinates

def get\_gps\_coordinates():

try:

packet = gpsd.get\_current()

if packet.mode >= 2:

return packet.lat, packet.lon

else:

return None, None

except Exception as e:

print(f"Error reading GPS data: {e}")

return None, None

# Main loop

while True:

try:

command = input("Enter a command: ")

if command == "Track Vehicle":

lat, lon = get\_gps\_coordinates()

if lat is not None and lon is not None:

message = f"Vehicle Tracking Alert:\nYour Vehicle Current Location is:\nLatitude: {lat:.6f}\nLongitude: {lon:.6f}\nGoogle Maps Link: https://www.google.com/maps/@{lat},{lon},14z"

recipient = '850xxxxxxx' # Replace with the actual phone number

send\_sms(message, recipient)

print("SMS Sent")

else:

print("No GPS Fix")

else:

print("Invalid command")

except KeyboardInterrupt:

print("Exiting")

break

# Disconnect GSM modem

modem.close()

**SOURCE CODE**

mapboxgl.accessToken = 'YOUR\_MAPBOX\_ACCESS\_TOKEN'; // Replace with your Mapbox access token

const map = new mapboxgl.Map({

container: 'map',

style: 'mapbox://styles/mapbox/streets-v11', // You can use a different Mapbox style

center: [-73.981915, 40.747766], // Initial map center (longitude, latitude)

zoom: 12, // Initial zoom level

});

const busMarker = new mapboxgl.Marker()

.setLngLat([-73.981915, 40.747766]) // Initial bus location (longitude, latitude)

.addTo(map);

// Set up a function to update bus location (you would replace this with real-time data)

function updateBusLocation() {

// Replace with code to fetch real-time bus location data

// For this example, we're simulating a moving bus

const newLocation = simulateBusMovement(busMarker.getLngLat());

busMarker.setLngLat(newLocation);

requestAnimationFrame(updateBusLocation);

}

// Function to simulate bus movement (replace this with real real-time data)

function simulateBusMovement(currentLocation) {

// In this example, we're simulating bus movement by incrementing longitude

const newLongitude = currentLocation.lng + 0.0001;

return [newLongitude, currentLocation.lat];

}

updateBusLocation(); // Start updating the bus location

**SOURCE CODE**

<!DOCTYPE html>

<html>

<head>

<meta charset="utf-8">

<title>Real-Time Bus Tracking</title>

<meta name="viewport" content="width=device-width, initial-scale=1">

<link href="https://api.mapbox.com/mapbox-gl-js/v2.6.1/mapbox-gl.css" rel="stylesheet">

<script src="https://api.mapbox.com/mapbox-gl-js/v2.6.1/mapbox-gl.js"></script>

<style>

body {

margin: 0;

padding: 0;

}

#map {

height: 100vh;

width: 100%;

}

</style>

</head>

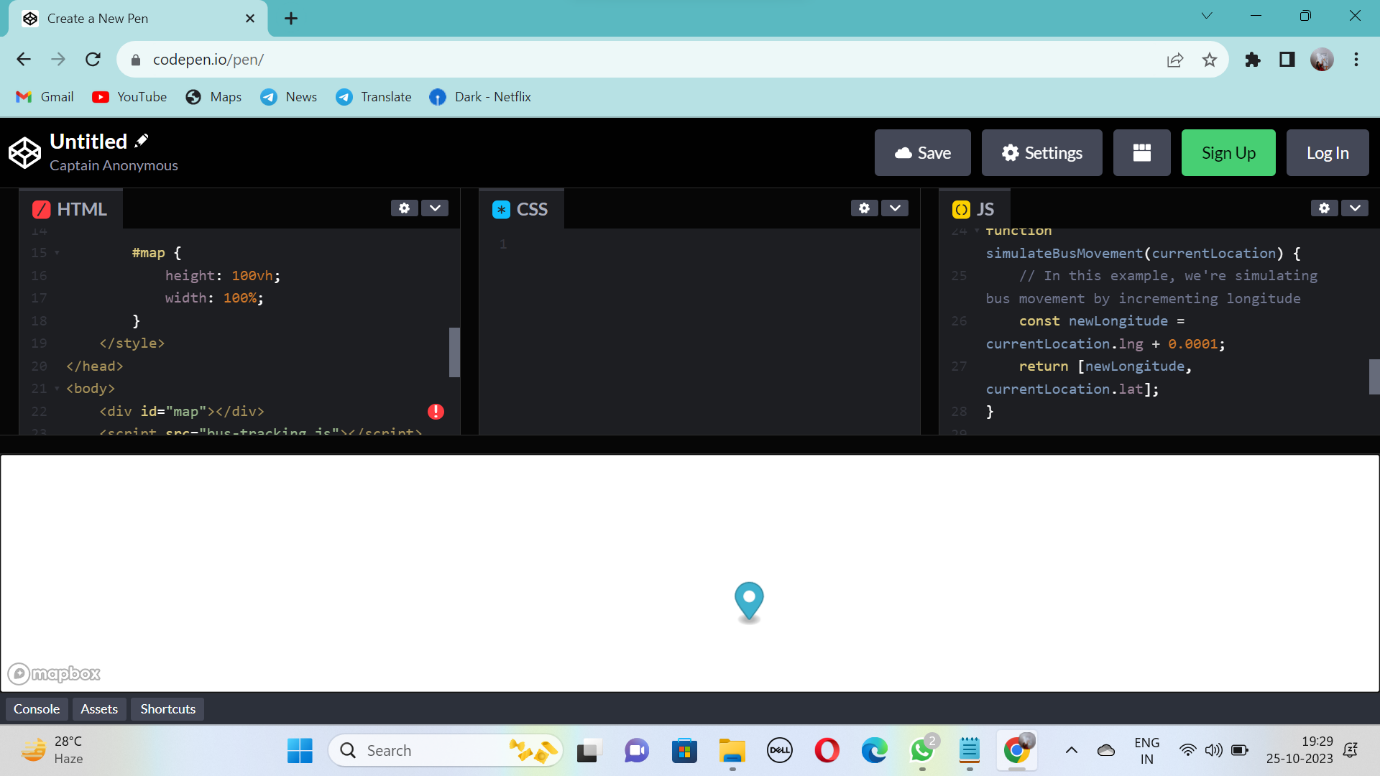
<body>

<div id="map"></div>

<script src="bus-tracking.js"></script>

</body>

</html>

**OUTPUT**