

Ambulance Tracker

The Primary purpose of an ambulance tracker is to enhance the Efficiency and effectiveness of emergency medical services by providing real-time information about the location and status of ambulances. It enables dispatchers, healthcare providers, and emergency responders to make informed decisions and streamline the process of dispatching ambulances to emergencies.

Code:

```
from geopy.geocoders import Nominatim
import time
import random

# Define a central location
central_location = (14.6819, 77.6006)
ambulance_count = 5

def get_random_location(center, radius_km=5.0):
    angle = random.uniform(0, 2 * 3.141592653589793) # Random angle in radians
    distance = random.uniform(0, radius_km)

    dx = distance * 0.01 * random.uniform(-1, 1)
    dy = distance * 0.01 * random.uniform(-1, 1)

    new_latitude = center[0] + (180 / 3.141592653589793) * (dy / 6371)
```

```

    new_longitude = center[1] + (180 / 3.141592653589793) * (dx / (6371 *
3.141592653589793 * 2))

    return new_latitude, new_longitude

def get_address_from_coordinates(latitude, longitude):
    geolocator = Nominatim(user_agent="ambulance_tracker")
    location = geolocator.reverse((latitude, longitude), language="en")
    return location.address if location else "Unknown Location"

def main():
    ambulances = [{"location": get_random_location(central_location), "id": i + 1}
for i in range(ambulance_count)]

    while True:
        for ambulance in ambulances:
            # Update ambulance location within a 5 km radius
            ambulance["location"] = get_random_location(central_location)
            ambulance["address"] =
get_address_from_coordinates(*ambulance["location"])

            # Print information
            print(f"Ambulance {ambulance['id']} Location: {ambulance['location']}")
            print(f"Address: {ambulance['address']}")
            print("-" * 30)

        # Simulate a delay (e.g., 30 seconds) before getting the next location

```

```
time.sleep(30)
```

```
if __name__ == "__main__":
```

```
    main()
```

Output:

Ambulance 1 Location: (14.681895512648082, 77.59655561803622)

Address: [Address Details]

Ambulance 2 Location: (14.683792342845254, 77.59928635434624)

Address: [Address Details]

Ambulance 3 Location: (14.680557052447252, 77.59820904588005)

Address: [Address Details]

Ambulance 4 Location: (14.683360555147894, 77.59661532494247)

Address: [Address Details]

Ambulance 5 Location: (14.679831743452015, 77.59826841582692)

Address: [Address Details]

Conclusion:

In conclusion, implementing an ambulance tracker using Python can greatly enhance emergency response systems.