Code for mini project

Import java.util.\*;

Import java.text.SimpleDateFormat;

Class Ambulance {

String id;

String location;

String status;

Int eta; // ETA in minutes

Public Ambulance(String id, String location, String status, int eta) {

This.id = id;

This.location = location;

This.status = status;

This.eta = eta;

}

}

Public class AmbulanceNotificationSystem {

// List to simulate ambulances

Static List<Ambulance> ambulances = new ArrayList<>();

// Function to send notification

Public static void sendNotification(String ambulanceId, String message) {

String timestamp = new SimpleDateFormat(“yyyy-MM-dd HH:mm:ss”).format(new Date());

System.out.println(“[“ + timestamp + “] Notification for Ambulance “ + ambulanceId + “: “ + message);

}

// Function to simulate ambulance tracking and notifications

Public static void trackAmbulances() {

For (Ambulance ambulance : ambulances) {

If (“En Route”.equals(ambulance.status)) {

sendNotification(

ambulance.id,

“Your ambulance is “ + ambulance.eta + “ minutes away. Current Location: “ + ambulance.location + “.”

);

} else if (“Available”.equals(ambulance.status)) {

sendNotification(ambulance.id, “Ambulance is available for dispatch.”);

} else if (“Arrived”.equals(ambulance.status)) {

sendNotification(ambulance.id, “Your ambulance has arrived.”);

}

}

}

// Simulate real-time updates (ETA decrease, status change)

Public static void simulateUpdates() {

While (true) {

For (Ambulance ambulance : ambulances) {

If (“En Route”.equals(ambulance.status)) {

Ambulance.eta = Math.max(0, ambulance.eta – (int)(Math.random() \* 2)); // Decrease ETA by 1 or 2

If (ambulance.eta == 0) {

Ambulance.status = “Arrived”; // Change status to Arrived

}

}

}

// Track ambulances every 10 seconds

trackAmbulances();

try {

Thread.sleep(10000); // Wait for 10 seconds before the next update

} catch (InterruptedException e) {

e.printStackTrace();

}

}

}

Public static void main(String[] args) {

System.out.println(“Starting Notification System…”);

// Add sample ambulances

Ambulances.add(new Ambulance(“AMB123”, “12.9716,77.5946”, “En Route”, 5));

Ambulances.add(new Ambulance(“AMB456”, “13.0827,80.2707”, “Available”, 0));

// Start the simulation

simulateUpdates();

}

}

Output:

[2024-11-21 10:15:00] Notification for Ambulance AMB123: Your ambulance is 5 minutes away. Current Location: 12.9716,77.5946.

[2024-11-21 10:15:00] Notification for Ambulance AMB456: Ambulance is available for dispatch.

[2024-11-21 10:15:10] Notification for Ambulance AMB123: Your ambulance is 3 minutes away. Current Location: 12.9716,77.5946.

[2024-11-21 10:15:20] Notification for Ambulance AMB123: Your ambulance has arrived.