

# Doctor Arrival Tracking System

Project Title: Doctor Arrival Tracking System

## Problem Statement:

In many hospitals and clinics, patients are often forced to wait for 3-4 hours for doctors to arrive. This not only causes inconvenience but also adds to patient frustration and system inefficiency.

## Objective:

To build a system that tracks the real-time location or status of doctors and provides estimated arrival times (ETA) to waiting patients via a mobile app, SMS, or digital display.

## Key Features:

### 1. Doctor Tracking:

- GPS-based tracking using mobile app (with permission).
- Manual status update option for doctors: "In Transit", "In OT", "Consulting", etc.
- Integration with Google Maps API to estimate time of arrival.

### 2. Patient Notification:

- Patients receive real-time updates about doctor status.
- App, SMS, or display boards can show: "Doctor will arrive in approx. 20 mins."
- Queue status: "You are #3 in line."

### 3. Hospital System Integration:

- Fetch daily doctor schedules (OPD, appointments).
- Update delays, cancellations, or emergency rescheduling.

#### Technologies to Use:

- Frontend: React Native / Flutter
- Backend: Node.js / Flask / Django
- Database: Firebase / MongoDB / PostgreSQL
- APIs: Google Maps API, Firebase Messaging / Twilio

#### MVP (Minimum Viable Product):

1. Doctor mobile app for location sharing & status update.
2. Patient interface showing current status & ETA.
3. Basic admin panel for hospital to manage doctor schedules.

#### Challenges:

- Doctor consent and privacy for live tracking.
- Accuracy issues with indoor GPS.
- Hospital cooperation and system access.
- Ensuring low battery/data usage.

#### Future Enhancements:

- Smart queueing system based on real arrival.
- Video consultation if doctor is delayed.
- Auto-rescheduling and emergency alerts.

#### Use Cases:

- OPD wait management in hospitals.
- Clinics with irregular doctor arrival.
- Telehealth scheduling and hybrid care models.

#### Conclusion:

This system has potential real-world utility and can significantly reduce patient wait time, improve transparency, and optimize healthcare operations. Ideal for both MVP and full-scale deployment.