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Helpdesk Tool Web & Mobile App (Android & IOS) – Developer Documentation

1. Overview

This document outlines the architecture, components, and development guidelines for the Helpdesk Tool built by Evol8 IT Services. The system is designed to manage support tickets with advanced features including role-based access, real-time dashboards, location tracking, and analytics.

2. Purpose

To provide developers with a detailed understanding of the technical structure and implementation strategy for the Helpdesk Tool. It includes modules, database schema, API specs, dashboard elements, and enhancements like location-based ticket tracking.

3. Technology Stack

- Frontend:
- Backend:
- Database:
- Authentication:
- Hosting:
- DevOps:
- Geolocation:

4. Core Modules

- **User Management**: Admins, Agents, End Users
- **Ticket Management**: CRUD with status, priority, and escalation
- **Location Tracking**: Capture and display ticket location details
- **Dashboard**: Visualize ticket statuses, workload, and SLA compliance
- **Knowledge Base**: Article repository for common solutions
- **Notifications**: Email, in-app, or Slack alerts

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- **Reports**: KPIs, SLAs, regional performance

- **Integrations**: Email, CRM, Slack

5. Database Schema

Users: id, name, email, password_hash, role

Tickets: id, title, description, status, priority, location, assigned_to, created_by, created_at, updated_at

Comments: id, ticket_id, user_id, comment_text, created_at

KnowledgeBase: id, title, content, tags, visibility, created_by

Notifications: id, user_id, type, message, status, timestamp

6. REST API Overview

- /api/login (POST): Authenticate user

- /api/tickets (GET/POST): Fetch or create tickets

- /api/tickets/:id (GET/PUT/DELETE): View/update/delete ticket

- /api/users (GET): List users

- /api/notifications (GET): User alerts

- /api/kb (GET/POST): Knowledge base access

- /api/dashboard (GET): Real-time dashboard data

7. Ticket Location Support

A new field `location` is added to ticket forms and records to track where the issue originates. This can be populated manually or via Google Maps API. Admins can filter, sort, and visualize tickets by location on the dashboard.

8. Dashboard Components

- Ticket Status Overview

- Workload Distribution

- SLA Compliance

- Regional Ticket Heatmap (using location)

- Live Search and Filters-Thumbnail preview for ticket attachments

9. Authentication & Roles

Uses JWT for session handling. Middleware ensures access control by role. Supports Admin (all access), Agent (assigned tickets), and End User (submit/view own tickets).

10. Error Handling & Logging

Standardized API responses. Centralized logging via Winston or Loguru. Client-side error boundaries in React for UI robustness.

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11. Testing & QA

- Unit Testing: Jest / PyTest
- Integration Testing: Postman / Swagger
- CI/CD: GitHub Actions for auto-tests and linting

12. Future Enhancements

- AI-based auto-assignment
- Location clustering and response optimization
- Chatbot for common queries
- Mobile app with GPS-aware ticketing

Disclaimer

This document is intended solely for the internal use of authorized personnel involved in the development and maintenance of the Helpdesk Tool under Evol8 IT Services. The contents of this document, including architecture, APIs, code structure, and technology choices, are proprietary and confidential. All technical specifications, integrations, and features described in this document are subject to change based on project requirements, technology updates, or client feedback.

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