Helpdesk Ticketing System – Technical Documentation

# 1. Overview

The Helpdesk Ticketing System is a backend application developed using Java Spring Boot. It allows users in an organization to create and manage IT/service-related tickets. The system supports authentication, role-based access, ticket management, and reporting.

# 2. Features

- JWT-based Authentication

- Role-based Authorization (Admin, Support Agent, Employee)

- Ticket Lifecycle Management (Open, Assigned, Resolved, Closed)

- Commenting and Notifications

- Admin Dashboard and User Management

- API Documentation with Swagger

# 3. Tech Stack

Backend: Java, Spring Boot, Spring Security

Database: H2 (Dev), MySQL/PostgreSQL (Prod)

Authentication: JWT

Documentation: Swagger/OpenAPI

Build Tool: Maven

# 4. Project Structure

src/  
├── controller/ # REST API controllers  
├── model/ # Entity classes  
├── repository/ # Data access layer  
├── service/ # Business logic  
├── config/ # Security and configuration  
├── HelpdeskApplication.java  
tests/ # Test cases  
docs/ # API specs and diagrams  
.github/ # GitHub workflows

# 5. API Usage

Base URL: http://localhost:8080

Access Swagger UI: http://localhost:8080/swagger-ui.html

API Endpoints include:

- /api/auth/login [POST] - Login

- /api/users [GET, POST] - Admin-only User Management

- /api/tickets [GET, POST, PUT, DELETE] - Ticket operations

- /api/tickets/assign/{id} [PUT] - Assign tickets

- /api/tickets/status/{id} [PUT] - Update ticket status

- /api/tickets/comment/{id} [POST] - Add comment to ticket

# 6. How to Run

1. Clone the repository

2. Import as a Maven project into your IDE

3. Configure database in `application.properties`

4. Run `HelpdeskApplication.java` or use `mvn spring-boot:run`

5. Access endpoints and Swagger UI