

# Customer Support Ticket System

## Project Description

This system manages customer support tickets for industrial businesses, streamlining issue resolution and improving customer satisfaction. The AI component uses sentiment analysis to prioritize tickets based on customer tone and urgency.

## Features

- **Ticket Management:** Create, track, and resolve support tickets.
- **Customer Portal:** Allow customers to submit and view tickets.
- **AI Sentiment Analysis:** Prioritize tickets based on sentiment.
- **Analytics Dashboard:** Visualize ticket resolution times and trends.
- **Notifications:** Alert support agents of high-priority tickets.
- **User Authentication:** Secure access for customers and agents.

## Tech Stack

- **MongoDB:** Stores ticket data, customer details, and resolution logs.
- **Express.js:** Handles API routes for ticket management.
- **React:** Builds an intuitive frontend for customers and agents.
- **Node.js:** Manages backend and AI integration.
- **AI Component:** Uses a pre-trained NLP model (e.g., via Hugging Face API) for sentiment analysis.

## AI Component

The AI feature uses a pre-trained NLP model to analyze ticket text and assign a sentiment score (positive, neutral, negative), prioritizing urgent or negative tickets for faster resolution.

## API Endpoints

- GET /api/tickets: List all tickets.
- POST /api/tickets: Create a new ticket.
- POST /api/sentiment: Analyze ticket sentiment.
- GET /api/analytics: Fetch ticket resolution analytics.

## **Usage**

1. Customers submit tickets via the portal.
2. Agents track and resolve tickets.
3. Use AI to prioritize urgent tickets based on sentiment.
4. View ticket resolution analytics.

## **Future Enhancements**

- Integrate chatbot for automated ticket responses.
- Add multi-language support for customers.
- Enhance AI with predictive ticket categorization.