Citizen AI

Project Documentation

1. Introduction

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2. Project Overview

Purpose: Citizen AI is an intelligent citizen engagement platform designed to enhance interaction between governments and the public. Using AI and real-time data, the assistant provides city safety insights, government service query resolution, and sentiment analysis of citizen feedback.

Features:

• Conversational Interface – Natural language interaction for citizens.
• City Safety Analysis – Summarized crime and accident statistics.
• Sentiment Analysis – Classifies citizen feedback.
• Citizen Feedback Dashboard – Visual analytics of sentiment distribution.
• Gradio UI – Interactive multi-tab dashboard.

3. Architecture

• Frontend: Built with Gradio (interactive UI).
• Backend: Python + Transformers + Torch.
• LLM Integration: IBM Granite model.
• Visualization: Matplotlib for charts.

4. Setup Instructions

• Python 3.9+ required.
• Install dependencies: transformers, torch, gradio, textblob, matplotlib.
• Run: python app.py
• Access Gradio dashboard in browser.

5. Folder Structure

project/
■■■ app.py # Main script
■■■ requirements.txt # Dependencies
■■■ models/ # Model configs
■■■ ui/ # Gradio layouts
■■■ utils/ # Utility functions

6. Running the Application

• Launch Gradio app.
• Use City Analysis, Citizen Assistant, Sentiment Analysis, and Dashboard tabs.

7. API Documentation

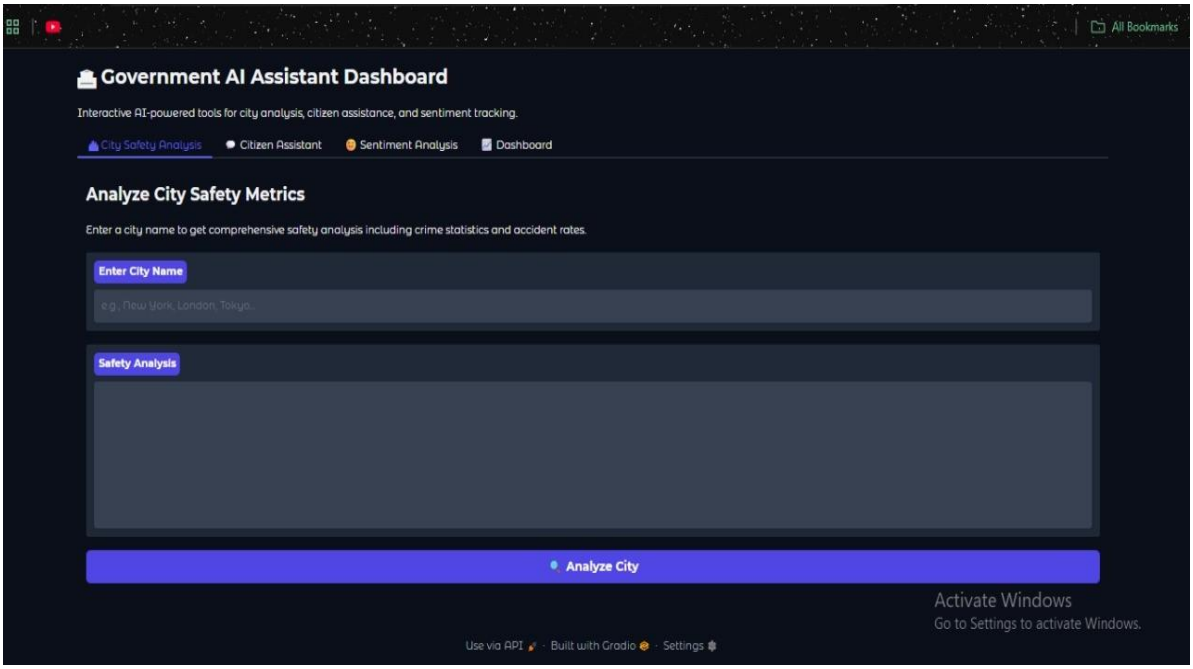
• POST /city-analysis – Returns AI-generated safety report.
• POST /citizen-assist – Handles citizen queries.
• POST /analyse-sentiment – Performs sentiment analysis.

8.Authentication

Currently open for demo use. Future enhancements include token-based authentication, role-based access (citizens, officials, admins).

9.User Interface

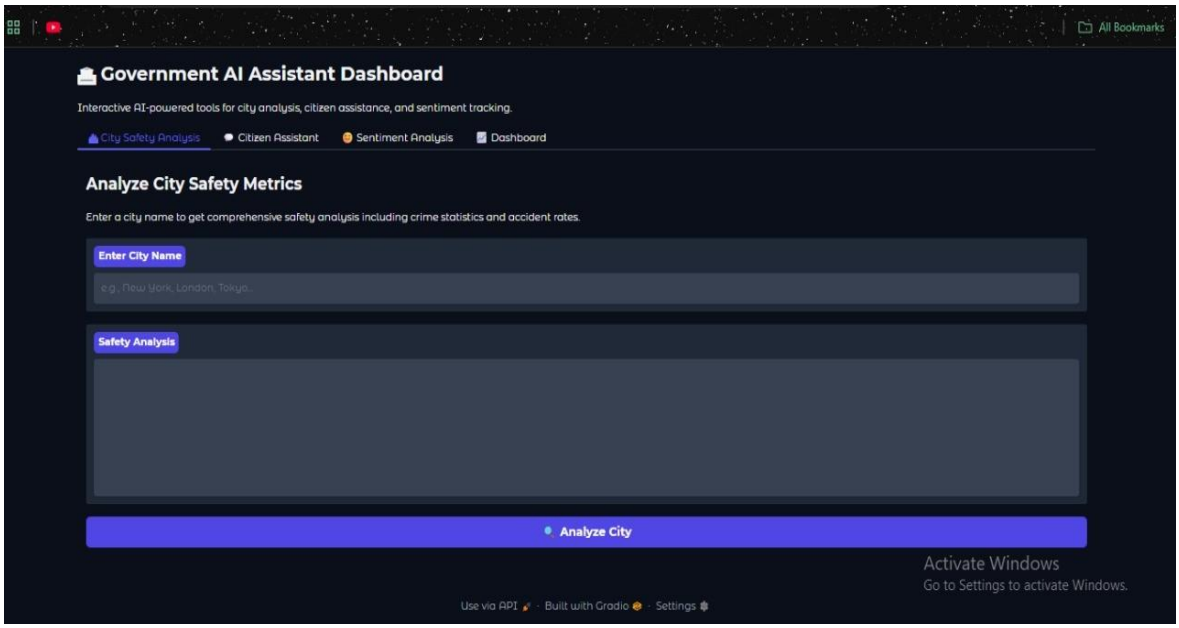
Tabbed layout for each feature, dashboard visualization of sentiment, and clean accessible design for non-technical users.

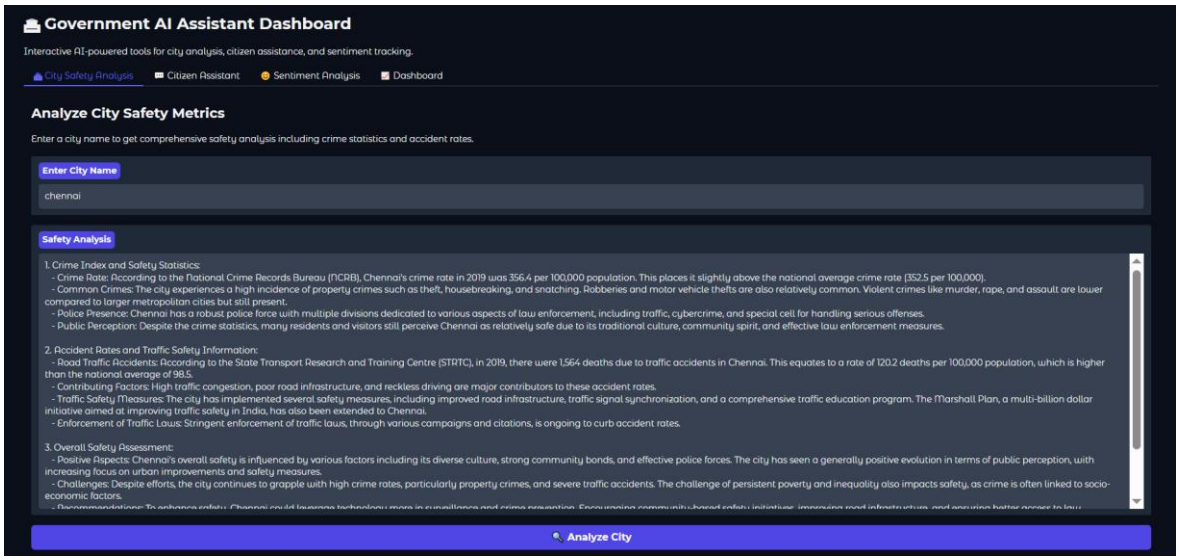


10.Testing

• Unit Testing – for AI response functions.
• Manual Testing – UI flows.
• Edge Cases – large queries, empty input.

11.Screenshots





12.Conclusion

This program demonstrates a Citizen AI Assistant Dashboard that integrates AI-powered analysis, citizen engagement, and data visualization into one interactive platform. Using transformers for natural language generation, TextBlob for sentiment analysis, and Matplotlib for visualization, it provides:

City Safety Analysis – Delivers crime and accident statistics through AI-driven reports.

Citizen Assistant – Acts as a conversational government helpdesk, answering policy and service-related queries.

Sentiment Analysis – Classifies citizen feedback as Positive, Neutral, or Negative.

Interactive Dashboard – Tracks and visualizes collective sentiment trends for better decision-making.

By combining AI models, real-time interactions, and visual analytics, this system can help governments, civic bodies, or organizations understand public safety concerns, citizen queries, and overall public sentiment.

13. Known Issues

• AI sometimes repeats prompt text.
• Model slower on CPU.

14. Future Enhancements

• Integration with real-time city data APIs.
• Multi-language support.
• Role-based authentication.
• Advanced analytics and forecasting.