Citizen AI-Intelligent Citizen Engagement Platform

1. Introduction

- Project Title: CitizenAI – Intelligent Citizen Engagaement Platform
- Team Members:

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2. Project Overview

Purpose:

The purpose of CitizenAI is to act as a intelligent citizen engagement platform that empowers both citizens and policymakers with reliable, AI-driven insights about cities, safety, and public services. It ensures that civic data and government information are presented in a clear, structured, and citizen-friendly way.

Core Functionalities

1. City Analysis

Crime Index & Safety Statistics:

Provides crime rate estimates, crime index scores, and highlights safety concerns in urban and rural areas.

Accident Rates & Traffic Safety:

Summarizes traffic accident data, identifies high-risk areas, and suggests safety measures.

Overall Safety Assessment:

Combines multiple factors (crime + accidents + public safety indicators) to generate an overall safety rating for the city

2. Citizen Services

Government Policies:

Explains national/state/local policies in simple language for easy citizen understanding

Public Services Queries:

Provides assistance about healthcare facilities, transport services, waste management, digital governance, and more.

Civic Issues & Solutions:

Offers general advice and suggestions on urban planning, infrastructure complaints, environmental concerns, and citizen rights.

3. User-Centric Experience

Provides clear, structured answers (summaries, bullet points, or reports).

Uses natural language processing to ensure answers are easy to read and contextually accurate.

Ensures responsible AI by avoiding misleading or unsafe civic advice.

Future :

- Integration with Live City Data Sources
- Police crime databases
- Traffic management systems
- Government open-data portals
- Civic Engagement Dashboards
- Visual crime maps, safety graphs, and accident trends
- Citizen feedback loops for continuous improvement
- Policy Impact Analysis
- AI can compare policies across regions
- Evaluate how government programs impact safety, transport, and citizen satisfaction
- Multi-Language Support
- Local languages (Tamil, Hindi, etc.) for accessibility
- Regional dialect adaptation for better citizen reach
- Mobile & Cloud Deployment
- Deploy CitizenAI as a mobile app or Hugging Face Space
- Allow citizens to access real-time civic insights on the go

3. Architecture

Frontend (Gradio UI):

Interactive web interface built with Gradio

Two Tabs:

1. City Analysis

2. Citizen Services

Backend (Python in Google Colab):

- Hugging Face Transformers for LLM responses
- PyTorch for model inference

Model Integration:

- Default Model: ibm-granite/granite-3.2-2b-instruct

4. Setup Instructions

Prerequisites:

- Python 3.9+
- Google Colab account
- Hugging Face access

Installation (in Colab):

!pip install transformers torch gradio -q

Run the App:

app.launch(share=True)

5. Notebook Structure

CitizenAI.ipynb

├── Model Loader (IBM Granite)

├── City Analysis Module

├── Citizen Services Module

└── Gradio UI

6. Running the Application

1. Open Google Colab

2. Upload and run citizenai.ipynb

3. Install dependencies

4. Launch Gradio interface

5. Use tabs for City Analysis or Citizen Services

7. API Documentation

POST /city/analyze

Input: City name

Output: Safety stats (crime index, accident rate, safety score)

POST /citizen/query

Input: Civic query

Output: AI-generated structured government response

8. Authentication (Future)

Open Mode (Default) – any user with Gradio link

Planned:

- Token-based authentication
- OAuth2 (Google / Hugging Face login)
- Role-based access (Citizens, Officials, Researchers)

9. User Interface

Tab 1: City Analysis → Textbox for city name, safety report output

Tab 2: Citizen Services → Textbox for query, structured government response

10. Testing

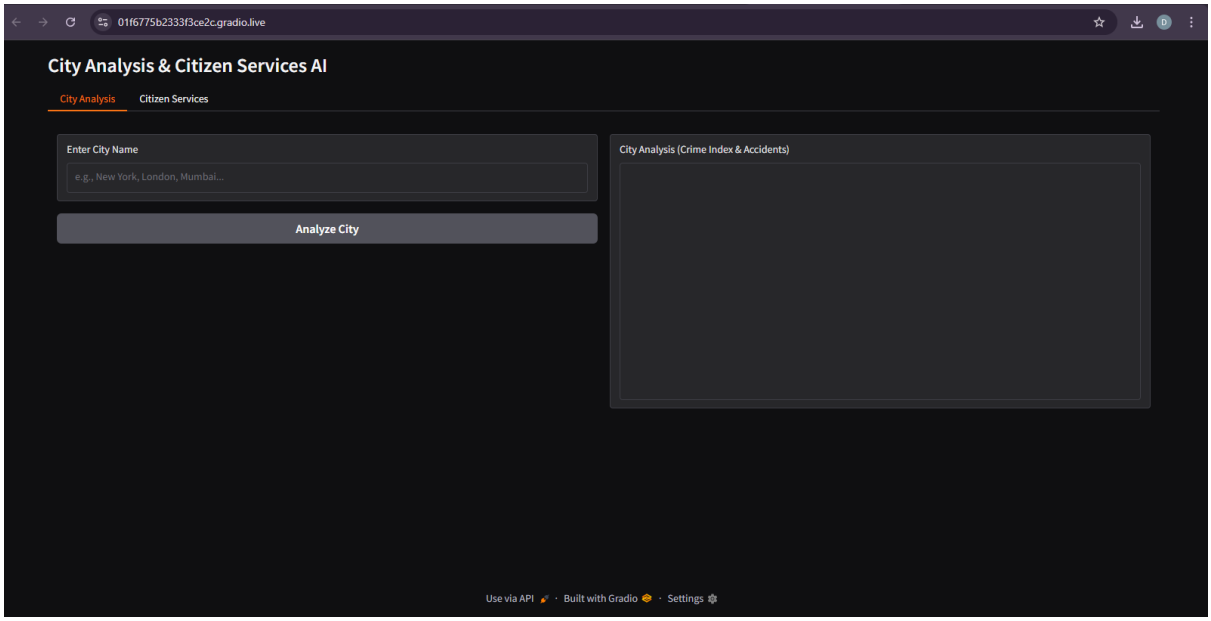
Unit Testing: Prompt building, response formatting

Manual Testing: Accuracy of safety reports, citizen responses

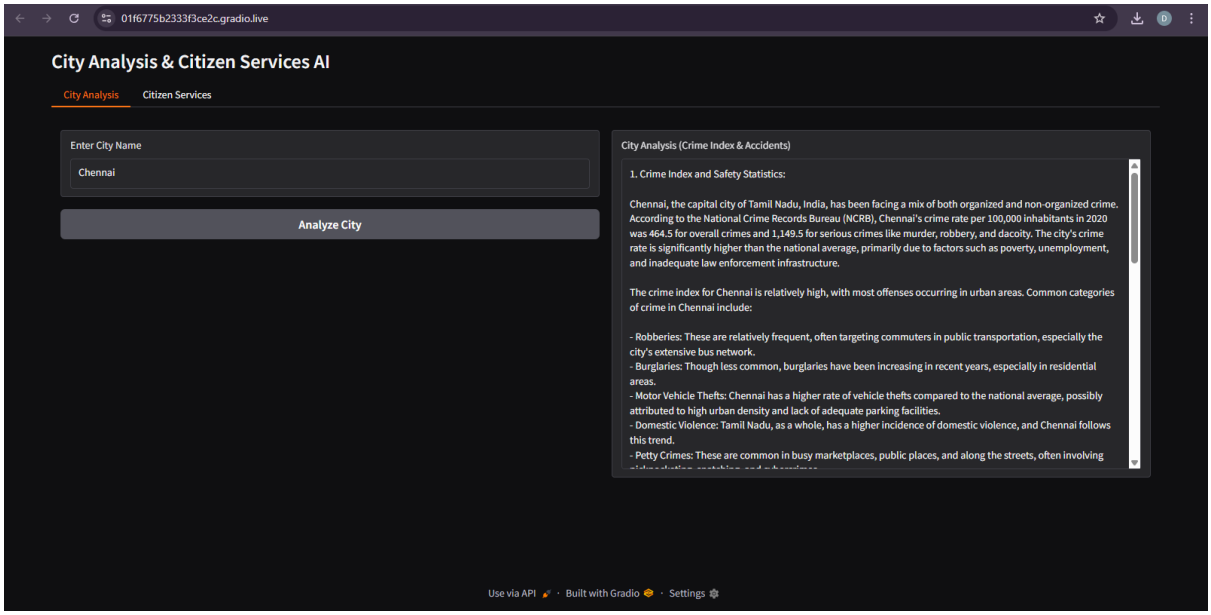
Edge Cases: Invalid city names, irrelevant queries

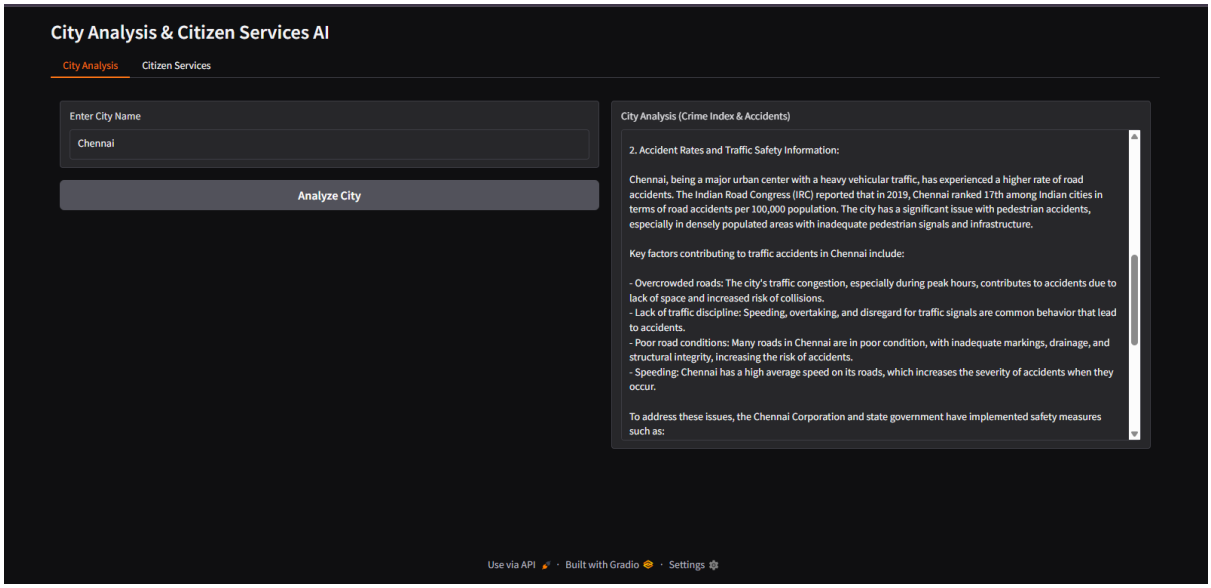
11. Screenshots

City Analysis:

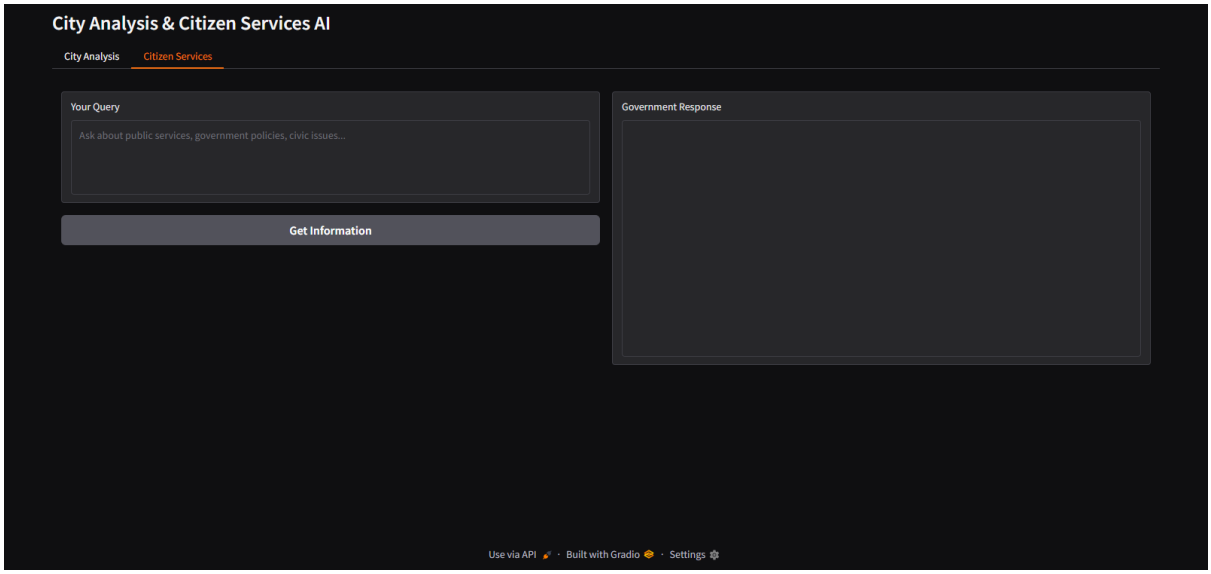


Output:

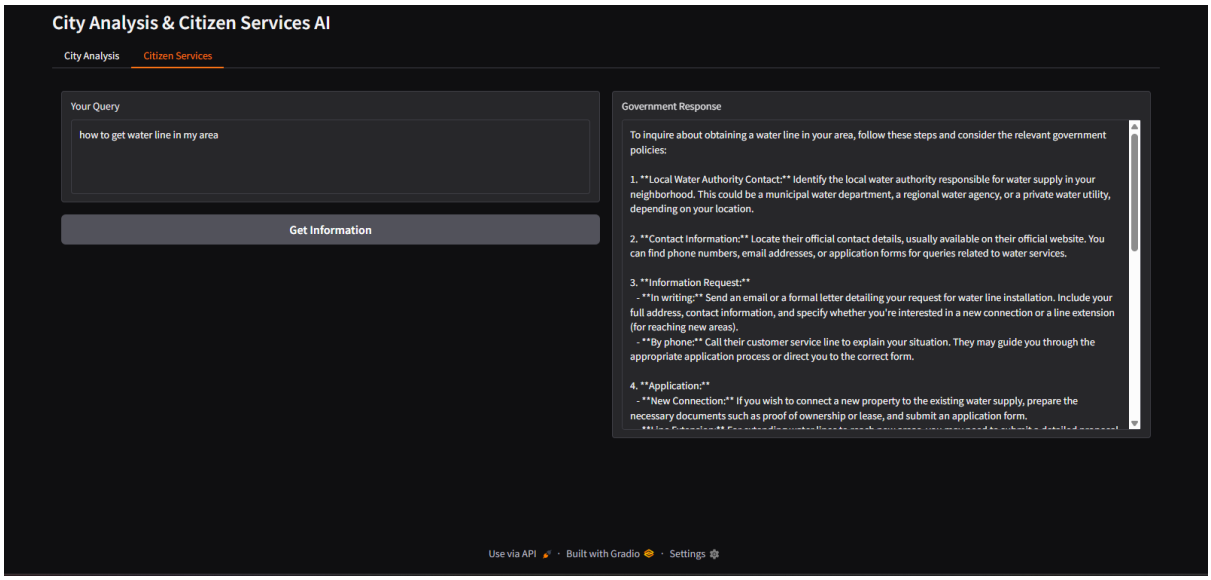

01f6775b2333f3ce2c.gradio.live
City Analysis & Citizen Services AI
City Analysis
Citizen Services
Enter City Name
Chennai
Analyze City
City Analysis (Crime Index & Accidents)
1. Crime Index and Safety Statistics:
Chennai, the capital city of Tamil Nadu, India, has been facing a mix of both organized and non-organized crime. According to the National Crime Records Bureau (NCRB), Chennai's crime rate per 100,000 inhabitants in 2020 was 464.5 for overall crimes and 1,149.5 for serious crimes like murder, robbery, and dacoity. The city's crime rate is significantly higher than the national average, primarily due to factors such as poverty, unemployment, and inadequate law enforcement infrastructure.
The crime index for Chennai is relatively high, with most offenses occurring in urban areas. Common categories of crime in Chennai include:
- Robberies: These are relatively frequent, often targeting commuters in public transportation, especially the city's extensive bus network.
- Burglaries: Though less common, burglaries have been increasing in recent years, especially in residential areas.
- Motor Vehicle Thefts: Chennai has a higher rate of vehicle thefts compared to the national average, possibly attributed to high urban density and lack of adequate parking facilities.
- Domestic Violence: Tamil Nadu, as a whole, has a higher incidence of domestic violence, and Chennai follows this trend.
- Petty Crimes: These are common in busy marketplaces, public places, and along the streets, often involving
Use via API · Built with Gradio · Settings

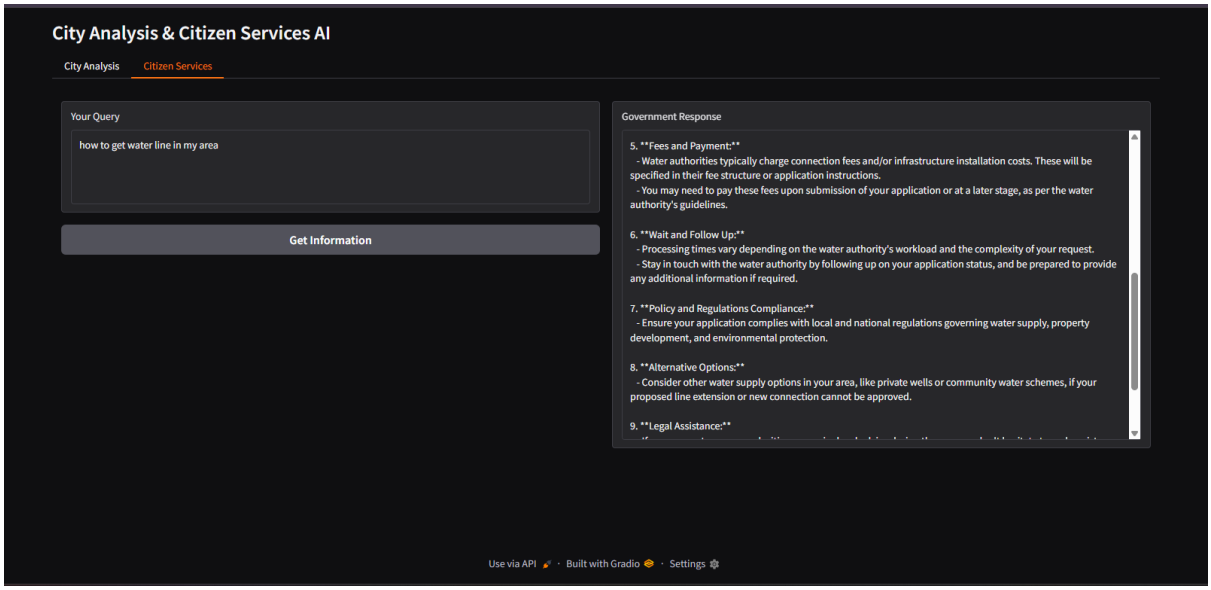

City Analysis & Citizen Services AI
City Analysis
Citizen Services
Enter City Name
Chennai
Analyze City
City Analysis (Crime Index & Accidents)
2. Accident Rates and Traffic Safety Information:
Chennai, being a major urban center with a heavy vehicular traffic, has experienced a higher rate of road accidents. The Indian Road Congress (IRC) reported that in 2019, Chennai ranked 17th among Indian cities in terms of road accidents per 100,000 population. The city has a significant issue with pedestrian accidents, especially in densely populated areas with inadequate pedestrian signals and infrastructure.
Key factors contributing to traffic accidents in Chennai include:
- Overcrowded roads: The city's traffic congestion, especially during peak hours, contributes to accidents due to lack of space and increased risk of collisions.
- Lack of traffic discipline: Speeding, overtaking, and disregard for traffic signals are common behavior that lead to accidents.
- Poor road conditions: Many roads in Chennai are in poor condition, with inadequate markings, drainage, and structural integrity, increasing the risk of accidents.
- Speeding: Chennai has a high average speed on its roads, which increases the severity of accidents when they occur.
To address these issues, the Chennai Corporation and state government have implemented safety measures such as:
Use via API · Built with Gradio · Settings

Citizen Services:



Output:





12. Known Issues

Model responses vary by prompt phrasing

Internet/GPU instability in Colab may affect performance

13. Future Enhancements

- Data visualization dashboards (crime trends, accidents)
- Real-time city open-data integration
- Mobile app deployment for wider citizen use