CITIZEN AI

Project Documentation

1. Introduction

Project Title: Citizen AI

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2. Project Overview

Purpose:
City Insight AI is designed to analyze urban safety data (crime and accidents) and provide quick responses to citizen queries about government services, policies, and civic issues.

Features:

City Analysis Module: Provides statistics on accidents and safety measures for major cities.

Citizen Interaction: Responds to queries on transport, education, health, and other public services.

Conversational Interface: Allows users to interact naturally through text.

Gradio Interface: A simple, user-friendly web application.

3. Architecture

Frontend (Gradio): Provides interactive tabs for city analysis and citizen services.

Backend (Python): Contains logic for analyzing cities and handling citizen queries.

Deployment: Runs on Google Colab or local machine with Gradio’s shareable link.

4. Setup Instructions

Prerequisites:

Python Programming Knowledge

Gradio Framework

Google Colab / Jupyter Notebook

Internet Connectivity

Steps:

1. Install Gradio using pip install gradio.

2. Copy the provided Python code into a Colab/Jupyter Notebook.

3. Run the notebook to launch the Gradio application.

4. Use the provided share link to access the interface.

5. Folder Structure

app/ – Backend logic (Python functions).

ui/ – Gradio interface files.

city_analysis.py – Contains city analysis logic.

citizen_services.py – Handles user queries and responses.

6. Running the Application

1. Open Google Colab or Jupyter Notebook.

2. Install dependencies (gradio).

3. Run the code cells to start the Gradio app.

4. Access the generated shareable link to interact with the application.

7. API Documentation

City Insight AI provides:

City Analysis Endpoint: Enter a city name to view accident and safety data.

Citizen Query Endpoint: Ask about transport, health, education, or general services.

8. Authentication

Demo Mode: No authentication is required.

Future Scope: API keys and role-based access can be integrated for secure deployments.

9. User Interface

The Gradio app contains:

City Analysis Tab: Input a city and view safety/accident statistics.

Citizen Services Tab: Submit queries and receive instant responses.

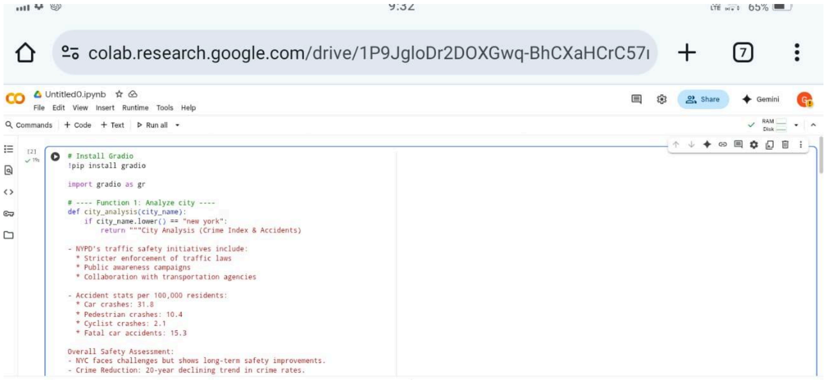
10. Testing

Unit Testing: Verified correct responses for cities (New York, Los Angeles).

Manual Testing: Checked Gradio interface buttons and query responses.

Edge Cases: Tested with unsupported cities and random queries.

11. Screenshots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```
# Install Gradio
!pip install gradio

import gradio as gr

# ---- Function 1: Analyze city ----
def city_analysis(city_name):
    if city_name.lower() == "new york":
        return """City Analysis (Crime Index & Accidents)

- NYPD's traffic safety initiatives include:
  * Stricter enforcement of traffic laws
  * Public awareness campaigns
  * Collaboration with transportation agencies

- Accident stats per 100,000 residents:
  * Car crashes: 31.8
  * Pedestrian crashes: 10.4
  * Cyclist crashes: 2.1
  * Fatal car accidents: 15.3

Overall Safety Assessment:
- NYC faces challenges but shows long-term safety improvements.
- Crime Reduction: 20-year declining trend in crime rates.
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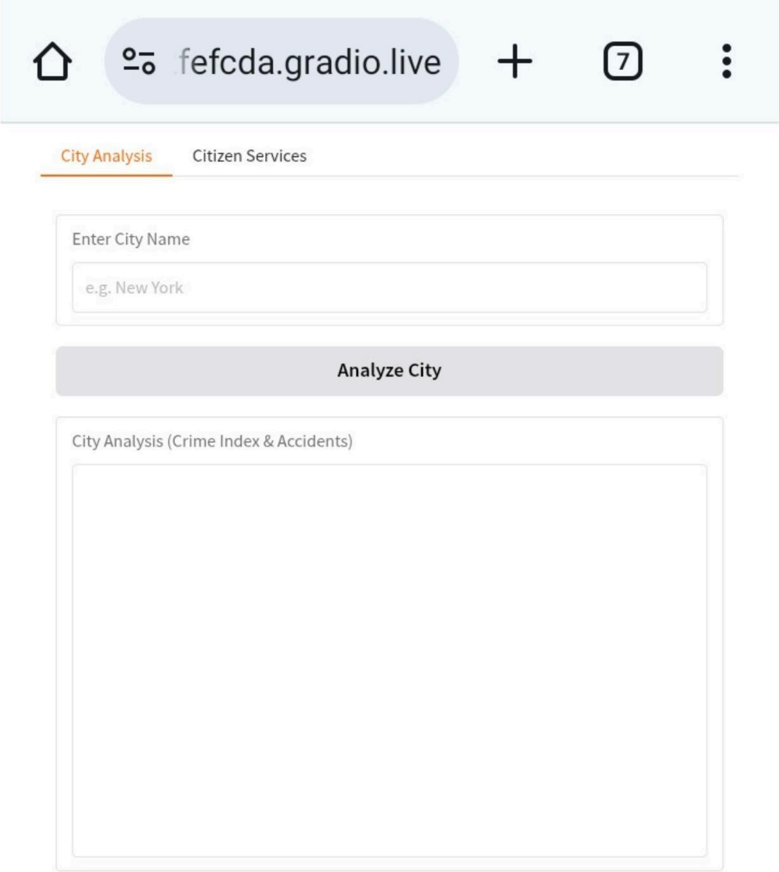

12. Known Issues

Limited data availability (only New York and Los Angeles currently supported).

Requires internet for Gradio shareable links.

13. Future Enhancements

Add support for more cities and datasets.

Integrate real-time APIs for updated statistics.

Expand queries to cover more public services.

Deploy on cloud platforms for scalability.
