

Intelligent Citizen Engagement Platform

- Project Documentation

1. Introduction

Project Title: Intelligent Citizen Engagement Platform

Team Members:

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D.Shalini

D.Sarvina

Z.Sanoora

2. Project Overview

Purpose:

The purpose of the Intelligent Citizen Engagement Platform is to create a smart, AI-driven system that enhances communication, transparency, and collaboration between citizens and government bodies. The platform will enable citizens to easily access policies, provide feedback, track services, and stay informed in real time. For officials, it provides insights, analytics, and forecasting to improve decision-making and governance efficiency.

Features:

Conversational Interface: Citizens can ask questions and get plain-language answers.

Policy Summarization: Converts complex government documents into simplified, actionable summaries.

Citizen Feedback Loop: Collects and analyzes input from citizens to inform planning and services.

KPI Forecasting: Projects key performance indicators for governance and development.

Anomaly Detection: Identifies irregularities in data (e.g., service delays, unusual patterns).

Eco-Tip & Civic Guidance: Provides personalized tips to encourage sustainable and responsible civic engagement.

User-Friendly Dashboard (Streamlit/Gradio): Interactive web interface for citizens and officials.

3. Architecture

Frontend (Streamlit): Interactive dashboard with chat, feedback, and reports.

Backend (FastAPI): Manages APIs for document processing, chat, feedback, and analytics.

LLM Integration (Watsonx / OpenAI): For summarization, insights, and conversational features.

Vector Search (Pinecone/FAISS): Semantic search for documents and queries.

ML Modules: Forecasting and anomaly detection using time-series data.

4. Setup Instructions

1. Install Python 3.9+

2. Install dependencies (requirements.txt)

3. Configure .env with API keys

4. Run FastAPI backend

5. Launch Streamlit frontend

6. Upload data and interact with modules

5. Folder Structure

app/ – Backend logic (APIs, models, integrations)

ui/ – Frontend Streamlit pages

document_embedder.py – Handles document embedding

forecasting.py – KPI prediction module

anomaly_detector.py – Flags irregular patterns

report_generator.py – Generates AI-powered reports

Future Enhancements

1. AI-Driven Insights

Integrate advanced AI/ML models to predict citizen needs, identify social trends, and recommend personalized services.

2. Multi-Language & Voice Support

Enable regional language support and voice-based interaction for inclusivity and accessibility.

3. Mobile Application Expansion

Launch mobile apps (Android/iOS) with offline capabilities to reach rural and remote areas.

4. Blockchain for Transparency

Use blockchain technology to ensure secure, tamper-proof records of citizen feedback and government actions.

5. Smart City Integration

Connect the platform with IoT devices, smart sensors, and urban infrastructure for real-time problem reporting.

6. Gamification

Introduce reward systems for active citizen participation to encourage engagement and accountability.

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LTE



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Shree2535 Add files via upload

913573b · 2 days ago



189 lines (130 loc) · 396 KB

Code

Blame

Raw



```
1  # -*- coding: utf-8 -*-
2  """Welcome to Colab
3
4  Automatically generated by Colab.
5
6  Original file is located at
7  https://colab.research.google.com/notebooks/intro.ipynb
8
9  # Welcome to Colab!
10
11  ## Explore the Gemini API
12  The Gemini API gives you access to Gemini models created by Google DeepMind. Gemini models are built from the ground up
13
14  **How to get started**
15  * Go to <a href="https://aistudio.google.com/">Google AI Studio</a> and log in with your Google Account.
16  * <a href="https://aistudio.google.com/app/apikey">Create an API key</a>.
17  * Use a quickstart for <a href="https://colab.research.google.com/github/google-gemini/cookbook/blob/main/quickstarts/C
18
19  **Discover Gemini's advanced capabilities**
20  * Play with Gemini <a href="https://colab.research.google.com/github/google-gemini/cookbook/blob/main/quickstarts/Imag
21  * Discover the <a href="https://colab.research.google.com/github/google-gemini/cookbook/blob/main/quickstarts/Get_star
22  * Learn how to <a href="https://colab.research.google.com/github/google-gemini/cookbook/blob/main/quickstarts/Spatial_
23  * Unlock the power of the <a href="https://colab.research.google.com/github/google-gemini/cookbook/blob/main/quickstar
24
25  **Explore complex use cases**
26  * Use <a href="https://colab.research.google.com/github/google-gemini/cookbook/blob/main/examples/Search_grounding_for
27  * Extract <a href="https://colab.research.google.com/github/google-gemini/cookbook/blob/main/examples/Pdf_structured_c
28  * Create <a href="https://colab.research.google.com/github/google-gemini/cookbook/blob/main/examples/Book_illustrator
29
30  To learn more, take a look at the <a href="https://github.com/google-gemini/cookbook">Gemini cookbook</a> or visit the
31
32  Colab now has AI features powered by <a href="https://gemini.google.com">Gemini</a>. The video below provides informati
33
34  <center>
35    <a href="https://www.youtube.com/watch?v=V7RXyqFUR98" target="_blank">
36      
41    <h2>What is Colab?</h2>
42  </div>
43
44  Colab, or 'Colaboratory', allows you to write and execute Python in your browser, with
45  - Zero configuration required
46  - Access to GPUs free of charge
47  - Easy sharing
48
49  Whether you're a <strong>student</strong>, a <strong>data scientist</strong> or an <strong>AI researcher</strong>, Colab
50
51  <div class="markdown-google-sans">
52
53    ## <strong>Getting started</strong>
54  </div>
55
56  The document that you are reading is not a static web page, but an interactive environment called a <strong>Colab noteb
57
58  For example, here is a <strong>code cell</strong> with a short Python script that computes a value, stores it in a vari
59  """
60
61  seconds_in_a_day = 24 * 60 * 60
62  seconds_in_a_day
63
64  """To execute the code in the above cell, select it with a click and then either press the play button to the left of t
65
66  Variables that you define in one cell can later be used in other cells:
67  """
68
69  seconds_in_a_week = 7 * seconds_in_a_day
70  seconds_in_a_week
71
```

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main

IBM-project / IBM-projects.py

↑ Top

Code

Blame

Raw



```
72 """Colab notebooks allow you to combine <strong>executable code</strong> and <strong>rich text</strong> in a single doc
73
74 Colab notebooks are Jupyter notebooks that are hosted by Colab. To find out more about the Jupyter project, see <a href
75
76 <div class="markdown-google-sans">
77
78 ## Data science
79 </div>
80
81 With Colab you can harness the full power of popular Python libraries to analyse and visualise data. The code cell below
82
83 You can import your own data into Colab notebooks from your Google Drive account, including from spreadsheets, as well
84 """
85
86 import numpy as np
87 import IPython.display as display
88 from matplotlib import pyplot as plt
89 import io
90 import base64
91
92 ys = 200 + np.random.randn(100)
93 x = [x for x in range(len(ys))]
94
95 fig = plt.figure(figsize=(4, 3), facecolor='w')
96 plt.plot(x, ys, '-')
97 plt.fill_between(x, ys, 195, where=(ys > 195), facecolor='g', alpha=0.6)
98 plt.title("Sample Visualization", fontsize=10)
99
100 data = io.BytesIO()
101 plt.savefig(data)
102 image = F"data:image/png;base64,{base64.b64encode(data.getvalue()).decode()}"
103 alt = "Sample Visualization"
104 display.display(display.Markdown(F"!![{alt}]({image})"))
105 plt.close(fig)
106
107 """Colab notebooks execute code on Google's cloud servers, meaning that you can leverage the power of Google hardware,
108
109 For example, if you find yourself waiting for <strong>pandas</strong> code to finish running and want to go faster, you
110
111 To learn more about accelerating pandas on Colab, see the <a href="https://colab.research.google.com/github/rapidsai-co
112 <a href="https://colab.research.google.com/github/rapidsai-community/showcase/blob/main/getting_started_tutorials/cudf
113
114 <div class="markdown-google-sans">
115
116 ## Machine learning
117 </div>
118
119 With Colab you can import an image dataset, train an image classifier on it and evaluate the model, all in just <a href
120
121 Colab is used extensively in the machine learning community with applications including:
122 - Getting started with TensorFlow
123 - Developing and training neural networks
124 - Experimenting with TPUs
125 - Disseminating AI research
126 - Creating tutorials
127
128 To see sample Colab notebooks that demonstrate machine learning applications, see the <a href="#machine-learning-exampl
129
130 <div class="markdown-google-sans">
131
132 ## More resources
133
134 ### Working with notebooks in Colab
135
136 </div>
137
138 - [Overview of Colab](/notebooks/basic_features_overview.ipynb)
139 - [Guide to markdown](/notebooks/markdown_guide.ipynb)
140 - [Importing libraries and installing dependencies](/notebooks/snippets/importing_libraries.ipynb)
141 - [Saving and loading notebooks in GitHub](https://colab.research.google.com/github/googlecolab/colabtools/blob/main/n
142 - [Interactive forms](/notebooks/forms.ipynb)
143 - [Interactive widgets](/notebooks/widgets.ipynb)
144
145 <div class="markdown-google-sans">
```



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City Analysis & Citizen Services AI

City Analysis

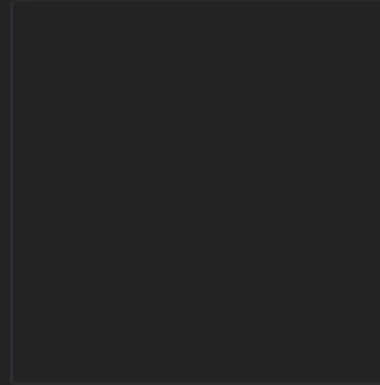
Citizen Services

Enter City Name

e.g., New York, London, Mumbai...

Analyze City

City Analysis (Crime Index & Accidents)





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18



City Analysis & Citizen Services AI

City Analysis

Citizen Services

Your Query

Ask about public services, government policies, civic issues...

Get Information

Government Response



GIF



Q¹

W²

E³

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Y⁶

U⁷

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