🔴 Final Report – Citizen AI

Project Title: Citizen AI – Intelligent Citizen Engagement Platform
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1. INTRODUCTION

1.1 Project Overview

Citizen AI is a multilingual AI-powered public service platform to enhance the speed, accessibility, and transparency of government grievance redressal through natural language interaction, automated complaint routing, and real-time analytics.

1.2 Purpose

To reduce language and literacy barriers, automate citizen issue handling, and provide data-driven insights for government responsiveness and planning.

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2. IDEATION PHASE

2.1 Problem Statement

Citizens face difficulties in accessing public grievance channels due to limited digital access, language barriers, and lack of transparency. There is a need for an intelligent, multilingual platform to simplify and automate this process.

2.2 Empathy Map Canvas

- **Says:** "Nobody responds after I file a complaint"

- **Thinks:** "Will this make any difference?"

- **Feels:** Frustrated, ignored

- **Does:** Shares issues on WhatsApp or ignores them

2.3 Brainstorming

Explored chatbot tech, speech-to-text, feedback analytics, auto-routing via AI, real-time dashboards.

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3. REQUIREMENT ANALYSIS

3.1 Customer Journey Map

- **Awareness → Submission → Acknowledgment → Resolution → Feedback**
  Each stage includes multi-language chatbot interactions, automated tracking, and status updates.

3.2 Solution Requirement

Refer to Functional and Non-Functional requirements listed in the FSD.

3.3 Data Flow Diagram

Includes:

- Citizen input → NLP → Complaint Routing → Ticket DB → Notification → Resolution

3.4 Technology Stack

Layer	Technology
Frontend	React.js, Flutter
Backend	Node.js, FastAPI
NLP Engine	Hugging Face, IndicBERT, spaCy
Database	PostgreSQL, MongoDB
Analytics	Power BI, Tableau
Deployment	Docker, Kubernetes, Salesforce Cloud

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4. PROJECT DESIGN

4.1 Problem–Solution Fit

Language barrier, delayed grievance redressal → AI-powered voice/text interface with real-time complaint tracking.

4.2 Proposed Solution

Smart citizen chatbot, multilingual support, automated ticket routing, dashboards, sentiment analysis.

4.3 Solution Architecture

See: Technology Architecture Diagram (includes UI → API → NLP Engine → DB → Notification)

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5. PROJECT PLANNING & SCHEDULING

5.1 Project Planning

- **Methodology:** Agile (Scrum)

- **Sprints:** 3 (2-week each)

- **Artifacts:** Product backlog, sprint board, burndown charts

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6. FUNCTIONAL AND PERFORMANCE TESTING

6.1 Performance Testing

- Tools: JMeter, Postman

- Tested chatbot response time, ticket processing latency, multilingual load

- Target: Response <1s, success rate > 99%, concurrency 10K+

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7. RESULTS

7.1 Output Screenshots

- Chatbot interface in Telugu

- Complaint ticket auto-classified

- Admin dashboard showing live complaints

- Sentiment heatmap of citizen feedback

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8. ADVANTAGES & DISADVANTAGES

✅ **Advantages**

- Language-inclusive

- Mobile-first

- Automated, efficient routing

- Feedback-driven analytics

⚠️ **Disadvantages**

- Depends on internet access

- Model accuracy varies with dialect

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9. CONCLUSION

Citizen AI demonstrates the use of AI for real-world public service challenges by reducing manual overhead, improving citizen satisfaction, and enabling smarter governance.

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10. FUTURE SCOPE

- Integration with DigiLocker, UPI

- Predictive analytics for issue hotspots

- Rural kiosk integration with voice-only mode

- Open API for third-party civic apps

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11. APPENDIX

- **Source Code:** [GitHub Link]

- **Dataset:** [Dataset link or synthetic explanation]

- **Demo Video:** [Demo link]

- **Wireframes & Mockups:** Attached separately