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AI for Bharat Hackathon

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Team Name : ByteBlaze

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Problem Statement : Build an AI-powered solution that improves access to information, resources, or opportunities for communities and public systems.

Brief about the Idea: BharatAccess AI is a voice-first, local-language AI assistant that helps underserved citizens understand and access government schemes, services, and opportunities without the need for digital literacy, English fluency, or intermediaries.

Instead of asking users to struggle through complex portals, BharatAccess AI is a smart layer of conversation on top of existing public systems. Users can just speak their natural language; the AI checks their eligibility and offers step-by-step advice on the available options, again in simple terms.

Essence of the product:

“From awareness → eligibility → action, in the user’s own voice and language.”

Your solution should be able to explain the following:

How different is it from any of the other existing ideas?

Currently, the government portals lack comprehensive information and tend to be English-dominant, text-based, and user-unfriendly. Helplines involve human intervention and have high waiting times. The CSCs involve physical presence and sometimes involve a fee. Generic AI chatbots simply provide information but cannot personalize the responses provided.

What makes BharatAccess.ai different from the current options is the following five factors:

- It is voice-first, not text-first.
- It is not limited to English but is offered in local languages too.
- It is not just a list of schemes but a personalized eligibility test.
- It is not dependent on high bandwidth but can be accessed via WhatsApp or SMS too.
- It is not just limited to the delivery of information but goes a step further to deliver actionable steps too.
- This makes it a useful and viable product and not just another AI-based chatbot.

How the Solution Solves the Problem

- This is because the solution helps to address the root causes of digital exclusion as follows:
- Firstly, the solution helps to overcome the problem of language and literacy exclusion by using speech-based interaction.
- Secondly, the solution helps to overcome the problem of confusion by making the eligibility criteria personal. This means that instead of having to visit different websites, the user only has to answer a few questions, and the system will then identify the schemes they are eligible for.
- Thirdly, the solution helps to overcome the problem of complexity by making the process of applying for the schemes simple and straightforward by using simple and clear language.
- Lastly, the solution helps to overcome the problem of middlemen exclusion by empowering the user to have direct access to accurate and simple guidance.

USP (Unique Selling Proposition)

The primary USP of bharataccess.ai is:

A voice-first, local language AI that offers personalized guidance on public benefits even in low bandwidth situations. Supporting differentiators include:

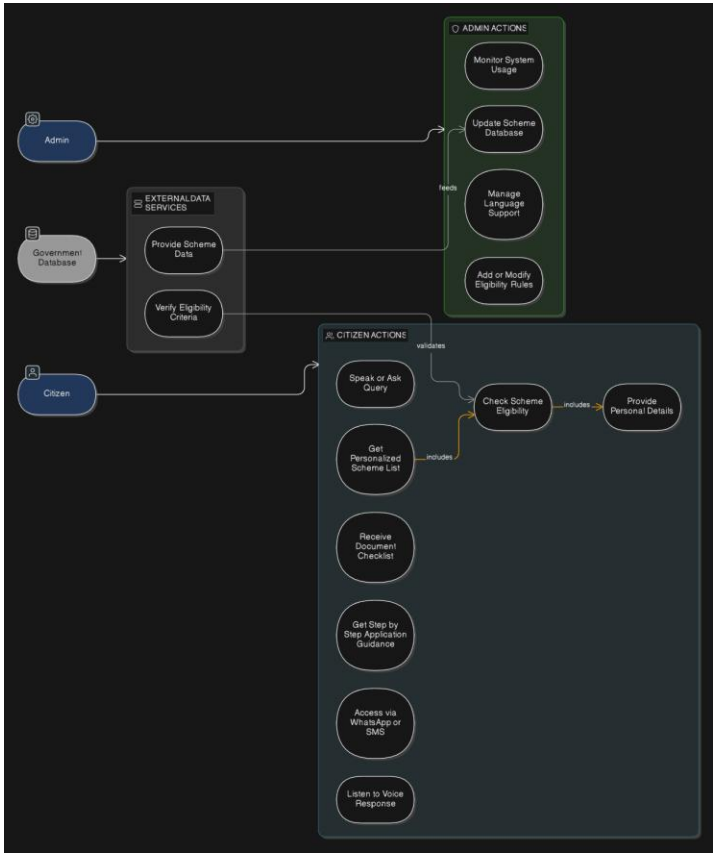
The following are the support USPs:

- Hyper-local language support
- Eligibility-based filtering
- Action-oriented responses
- WhatsApp and SMS compatibility
- Scalable backend architecture

List of features offered by the solution:

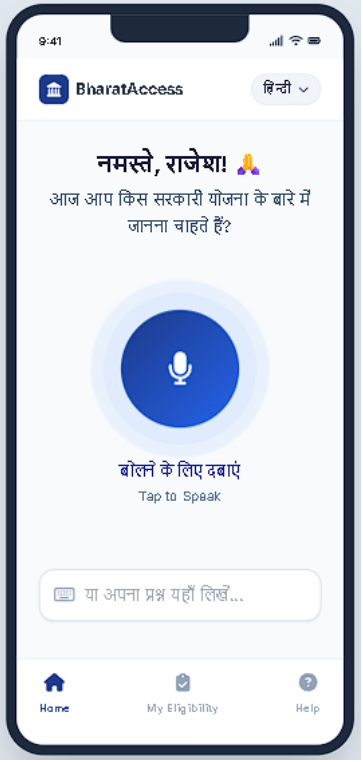
- Voice-based interaction using speech-to-text and text-to-speech
- Multi-language support (Hindi + one regional language initially)
- Smart eligibility engine based on structured scheme rules
- Personalized scheme recommendations
- Step-by-step application guidance
- Document checklist generation
- WhatsApp bot integration
- SMS fallback for low connectivity
- Admin dashboard for monitoring usage and analytics
- Knowledge base to prevent AI hallucinations

Process flow diagram or Use-case diagram



Wireframes/Mock diagrams of the proposed solution (optional)

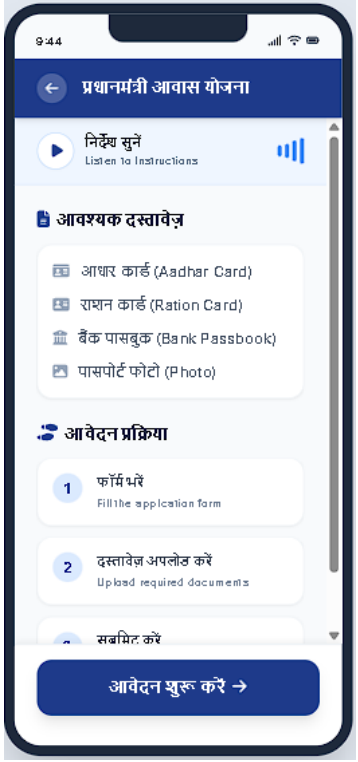
1. Home Screen



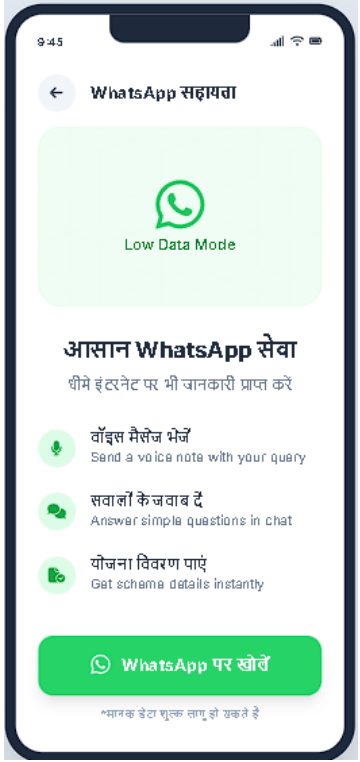
2. Question Flow

3. Eligibility Results

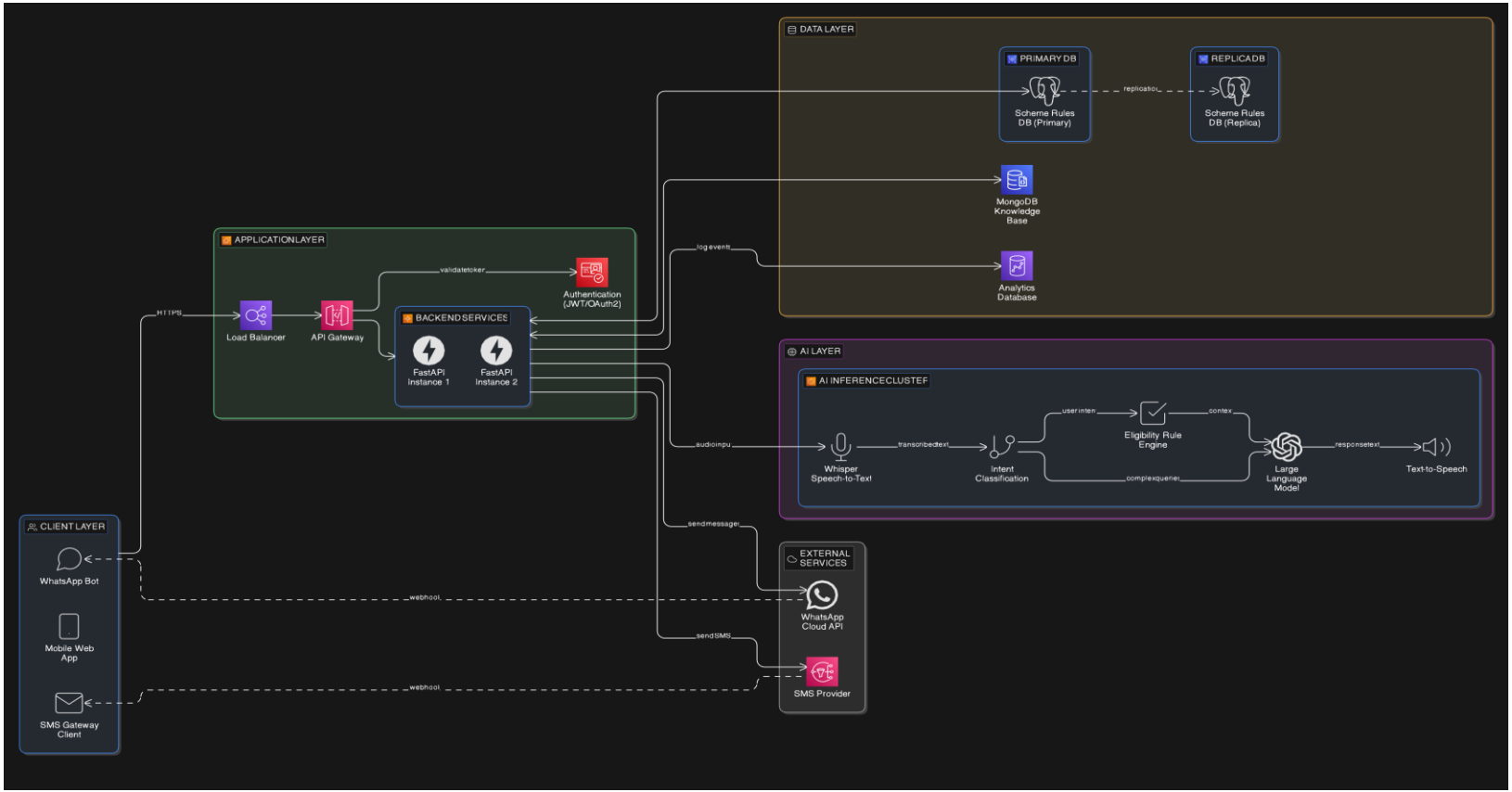
4. Scheme Details



5. WhatsApp Mode



Architecture diagram of the proposed solution:



Technologies to be used in the solution:

Backend
- Python 3.10+
- FastAPI for REST API
- PostgreSQL or MongoDB for database
- Redis for caching

AI/ML
- OpenAI Whisper (base or small model for speed)
- GPT-3.5-turbo /Llama 2/ Gemini 1.5 (Pro / Flash) / Claude 3 (Haiku / Sonnet / Opus) for LLM explanation
- Indic TTS (AI4Bharat or Google Cloud TTS with Indic voices)

WhatsApp Integration
- Twilio WhatsApp API
- Webhook handling with FastAPI

Frontend
- ReactJs, TailwindCSS,
- Web Audio API for voice recording
- Fetch API for backend communication

Estimated implementation cost (optional):

Project (2–3 days)

Component	Estimated Cost
Cloud Server (AWS/GCP)	₹1,000 – ₹3,000
WhatsApp API (trial)	₹0 – ₹1,500
Speech-to-Text API	₹0 – ₹2,000
Text-to-Speech API	₹0 – ₹2,000
Domain (optional)	₹500 – ₹1,000
Total Estimated Cost	**₹2,000 – ₹8,000**

Project (6–12 month)

Component	Annual Cost
Cloud Infrastructure	₹5–10 lakh
AI Model Hosting	₹3–8 lakh
WhatsApp/SMS	₹2–5 lakh
Data & Maintenance	₹2–4 lakh
Total	**₹12–25 lakh/year**

Add as per the requirements for the hackathon:

Problem Alignment
- Millions unable to access government schemes due to language & digital barriers
- Fragmented portals + complex eligibility processes
- High dependency on middlemen in rural India
- Direct impact on low-income citizens, farmers, students, elderly
- Solves real Bharat-level digital inclusion gap

Innovation / USP
- Voice-first public service AI
- Regional language conversational support
- Personalized eligibility engine (not generic info)
- Works on low-bandwidth (WhatsApp/SMS mode)
- Serverless, cost-efficient architecture

Scalability & Impact
- Designed for pan-India deployment
- Multi-language scalable framework
- Serverless infra → auto-scale to lakhs of users
- Extendable to education, healthcare, jobs, subsidies

Add as per the requirements for the hackathon:

AWS Services Used
- **Amazon API Gateway** – Secure API management
- **Amazon DynamoDB** – Scheme rules & user session storage
- **Amazon Bedrock / SageMaker** – AI model integration
- **Amazon CloudWatch** – Monitoring & analytics

Feasibility & Implementation Plan
- Modular microservice-based architecture
- MVP buildable in hackathon timeline
- Core focus: Voice → Eligibility → Guidance
- Easily extensible for future integrations

Social / Business Impact
- Reduces middleman dependency
- Saves time & application errors
- Improves scheme access rate
- Promotes digital inclusion in Bharat
- Strengthens trust in public systems

Future Scope
- More regional languages
- Full mobile app
- Government API integrations
- Predictive eligibility alerts
- Public analytics dashboard
- Expansion to enterprise civic platforms

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Thank You