

Google Cloud

PRESENTS

Agentic AI Day

Build the next generation of intelligent agents

Powered by **I2S**

Team Details

- a. **Team name: DrishtiKrishi**
- b. **Team leader name:**
- c. **Problem statement: Providing Farmers with Expert Help on Demand**

Brief about the idea:

DrishtiKrishi will be a voice-first, AI-powered farming assistant. It aims to help small and marginal farmers by offering instant, localized, and actionable agricultural guidance in their native language. Built with Google's Vertex AI and Firebase Studio, it will act like a personal agronomist, market analyst, and scheme navigator; users will interact entirely through voice and image inputs.

Farmers can upload photos of sick crops for quick diagnosis and treatment suggestions. They can inquire about real-time mandi prices to receive AI-driven advice on the best time to sell, and they can ask about government subsidies like drip irrigation—directly in their local language.

DrishtiKrishi will also offer weather-based crop care alerts, offline access for areas with low connectivity, and personalized recommendations based on the user's crop type, location, and interaction history.

With full multilingual voice support, secure access, and a scalable backend, DrishtiKrishi will close the gap between agricultural knowledge and rural access; it will help farmers make smarter choices every day.

Opportunities

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

DrishtiKrishi is an AI- powered husbandry adjunct. It helps growers snappily diagnose crop conditions by assaying print uploads with Gemini AI. The adjunct has a voice interface in original languages. It offers real- time mandi prices and gives advice on whether to vend or hold crops. It also makes it easier to pierce government schemes through simple exchanges. erected on Firebase Studio, it's scalable and can work offline. It's designed for pastoral connectivity and availability.

- How will it be able to solve the problem?

DrishtiKrishi lets farmers upload crop images for quick disease detection with Gemini AI and receive tailored remedies. It gives real-time mandi prices along with sell or hold advice through voice in local languages. Farmers can inquire about subsidies and get clear spoken explanations, including eligibility checks and application links. The voice-based interface makes it easy to use, even for those with low literacy. It also uses weather forecasts to predict risks and suggests preventive actions based on detected diseases. DrishtiKrishi is a smart, always-available farming companion.

- USP of the proposed solution

DrishtiKrishi will be India's first voice-driven, multimodal AI farming assistant. It will combine crop image diagnosis, Mandy price trends, and scheme guidance, all in the farmer's own language.

It will combine voice, image, and language in one assistant.

It can use Vertex AI Gemini Multimodal for smart, context-aware responses.

It can be fully voice-enabled for low-literacy and elderly farmers.

It will be built on Firebase Studio, making it fast, offline-ready, and scalable.

It can deliver hyperlocal, actionable insights for real-world farming decisions.

List of features offered by the solution

1. Crop Disease Detection via Image

- Snap or upload a photo of a diseased plant.
- Analyzed instantly using the Gemini multimodal model on Vertex AI.
- Returns diagnosis, treatment steps, and affordable local remedies.

2. Multimodal Input Support

- Accepts image and voice inputs.
- Built with Vertex AI Agent Builder and Speech-to-Text/Text-to-Speech APIs.
- Designed for ease of use for farmers with low digital literacy.

3. Real-Time Market Price Intelligence

- Queries mandi prices from sources like AgMarkNet.
- Gemini analyzes trends and gives AI-driven recommendations: sell now or wait.
- Localized to the user's crop and region.

4. Government Scheme Navigator

- Ask in Kannada: "drip irrigation subsidy yaavdu?"
- Agent replies with relevant schemes, eligibility, and direct application links.
- Trained on government websites using custom RAG and Gemini.

5. Voice-First, Multi-Lingual Assistant

- Complete hands-free interaction through voice.
- Supports Kannada, Hindi, Marathi, and other regional languages.
- Uses Vertex AI's multilingual Speech-to-Text and TTS APIs.

6. Offline-Ready with Firebase

- Caches important info, like weather, diseases, and prices for low-connectivity areas.
- Built with Firebase Studio, Auth, Firestore, and Hosting.
- Ensures real-time sync and low-latency performance.

7. Weather-Based Crop Advisory

- Integrates local weather APIs.
- Sends timely notifications: "Rain expected tomorrow; avoid spraying pesticide today."

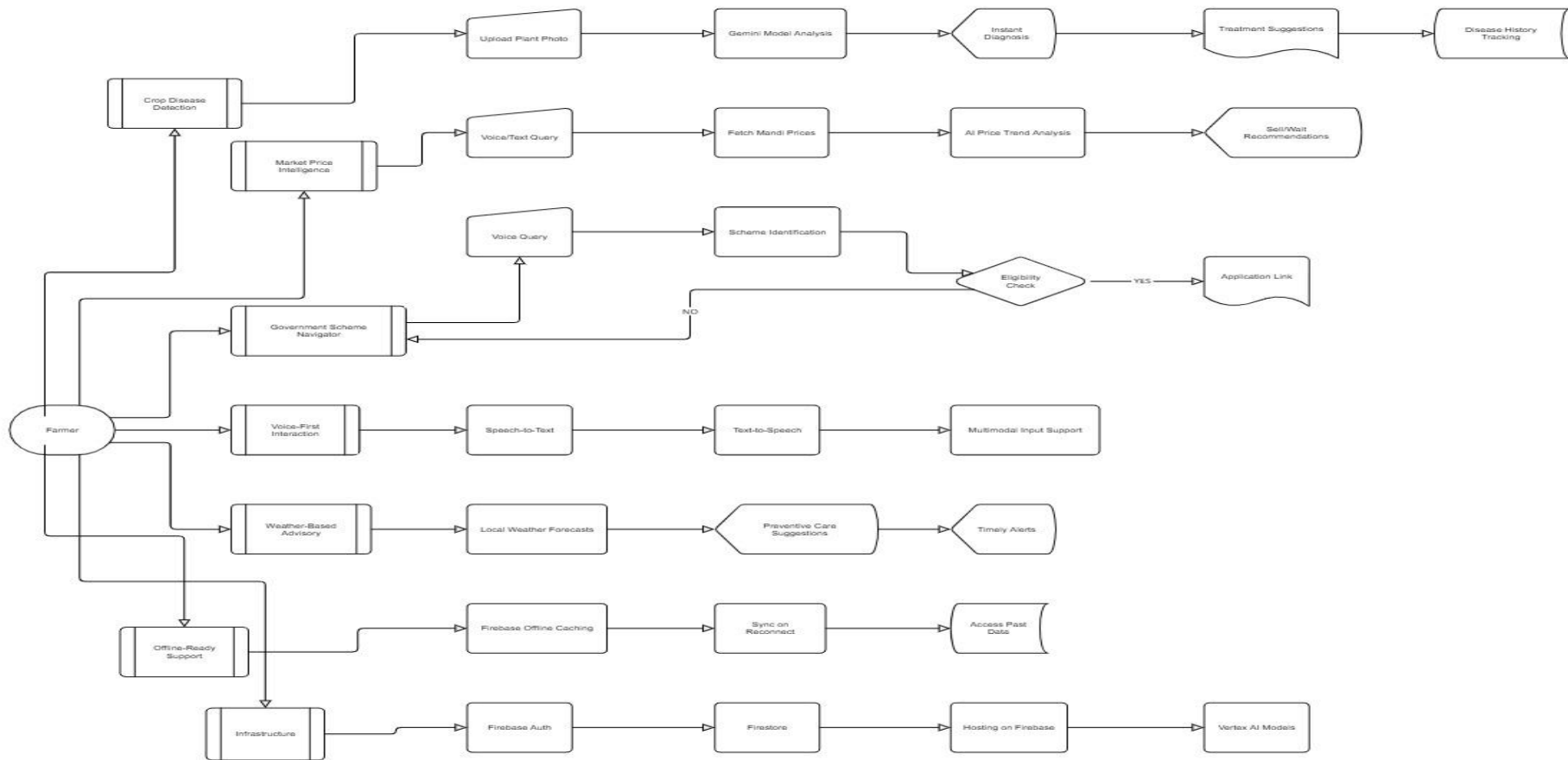
8. Personalized & Contextual Recommendations

- Tailored based on crop, season, soil data, and farmer history.
- Keeps a digital record of the farmer's interactions and advice received.

9. Secure & Scalable

- Secure login via Firebase Auth.
- Scalable backend using Firestore and Cloud Functions.
- Real-time updates and user tracking.

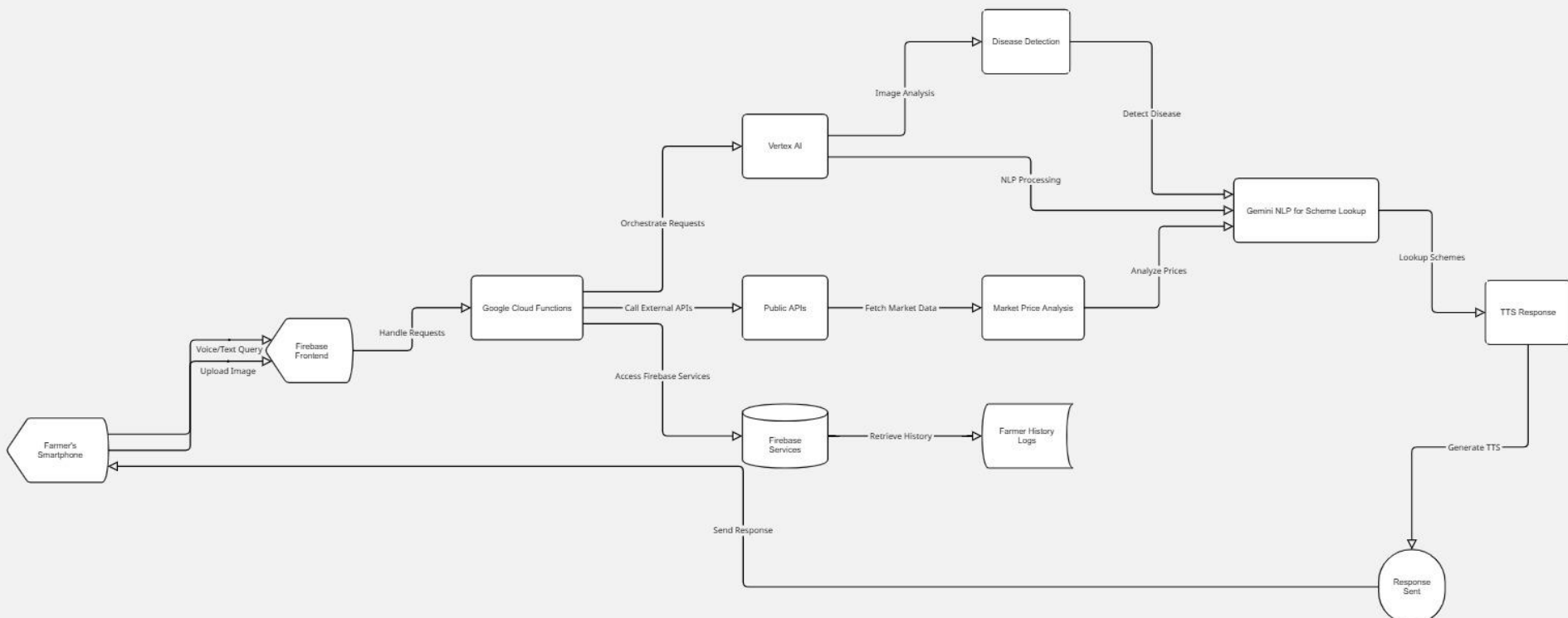
Process flow diagram or use-case diagram



Technologies to be used in the solution

Layer	Tools / APIs
AI	Gemini Multimodal Model on Vertex AI
Voice	Vertex AI Speech-to-Text / Text-to-Speech
Language Model	Vertex AI Agent Builder (fine-tuned for Agri)
Backend	Firebase Firestore, Firebase Functions
Auth & Hosting	Firebase Auth + Firebase Hosting
Market APIs	AgMarkNet / NCDEX / State Agri Market Boards
Weather API	OpenWeather / IMD
UI	Typescript+vite

Architecture diagram of the proposed solution



Wireframes/Mock diagrams of the proposed solution (optional)



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Thank you!

