Google Cloud

PRESENTS

Agentic AI Day

Build the next generation of intelligent agents

Powered by H2S

Team Details

    a.   **Team name:**

    b.   **Team leader name:**

    c.   **Problem statement:**

Brief about the idea

Project FinQuest is not another passive expense tracker. It's an agentic AI co-pilot that lives within Google Wallet, transforming everyday spending into an interactive and rewarding journey towards financial wellness.

We go beyond simple OCR by using Gemini's advanced multimodal reasoning to deeply **understand the *context* of your purchases**. A receipt isn't just a list of transactions; it's a clue to your lifestyle, your needs, and your goals.

FinQuest ingests receipts in any format (photo, video, live stream) and in multiple languages. It then turns this data into actionable intelligence, delivered through dynamic, gamified passes directly in your Google Wallet. It's your personal financial coach, meal planner, and savings strategist, all rolled into one seamless experience. Our goal is to shift user behavior from reactive tracking to proactive, informed decision-making before the point of sale.

For a team involving engineers experienced in GenAI, Computer Vision, and Mobile Dev, this project is a perfect synthesis of our skills, leveraging the full power of the Google Cloud ecosystem to build a truly next-generation application, not just a prototype.

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

Existing solutions like Expensify or Splitwise are digital filing cabinets for receipts. FinQuest is an intelligent engine for behavioral change. Our differentiation is threefold:

1. **From Data Entry to Data Intelligence:** Other apps perform OCR; we perform *contextual analysis*. We don't just see "Milk, 1L, ₹60." We understand it's a grocery item, a perishable good, and can connect it to your weekly consumption patterns. This allows us to answer questions like, *"Do I have enough milk for the week, or should I add it to my shopping list?"* This is the leap from simple data extraction to true AI-driven reasoning.

2. **From Passive Tracking to Active Coaching:** Finance apps show you charts of what you've already spent. This is historical data. FinQuest uses Google Wallet as a **dynamic, real-time dashboard for the future**. We use "Wallet Quests" (e.g., "Hit your ₹5,000 grocery budget this month") and "Achievement Passes" (e.g., "Frugal Master: You saved 15% on subscriptions this month!") that are pushed and updated in real-time. The app doesn't need to be opened to feel a sense of progress and motivation.

3. **From Generic Nudges to Hyper-Personalized Narratives:** Generic advice is ignored. FinQuest leverages a **Persona-Driven AI Engine**. A student user gets a "Side-Quest: Save ₹500 this week for bonus XP," with a casual, encouraging tone. A freelance user gets sophisticated advice on smoothing cash flow and identifying tax-deductible expenses, with a professional tone. The AI, powered by Gemini, adapts its communication style, goals, and financial strategies to who you are.

How will it be able to solve the problem?

FinQuest directly addresses the core challenges outlined:

- **Cumbersome Physical Receipts:** Our multimodal ingestion pipeline (using Gemini 1.5 Pro's Vision capabilities) makes capturing receipts effortless. Snap a photo, take a short video panning across a long receipt, or even use a live feed. We handle multiple languages, crumpled paper, and varied formats.
- **Difficulty Tracking Expenses:** We automate this entirely. The agent not only extracts items and costs but also intelligently categorizes them (e.g., "Groceries," "Utilities," "Entertainment") with high accuracy, storing the structured data in Firestore.
- **Inability to Leverage Purchase Data:** This is our core strength. We turn static data into a dynamic conversation.
  - **Actionable Insights:** "You've spent ₹2,500 on dining out this month. Here are 3 highly-rated recipes you can make with the groceries you already have."
  - **Financial Planning:** "Your recurring subscriptions total ₹1,800/month. The 'Netflix Premium' plan was just used twice. Consider downgrading?"
  - **Proactive Assistance:** A user can ask, "Create a shopping list for a lasagna recipe using ingredients I don't currently have." The agent checks past receipts, generates the list, and creates a Google Wallet pass for it.

USP of the proposed solution

FinQuest is the first platform to fuse Agentic AI, Gamified Behavioral Science, and Deep Google Wallet Integration into a single, cohesive experience that turns financial management from a chore into a rewarding quest.

Feature Category	Feature	Technical & User-Facing Details
Core Engine	Multimodal & Multilingual Ingestion	Users can upload images, short videos, or use a live camera stream. The system supports receipts in English, Hindi, Tamil, Kannada, and more, powered by Gemini's vision and translation capabilities.
	Automated Itemization & Categorization	The AI agent extracts line items, prices, taxes, merchant details, and warranty periods. It uses few-shot prompting to intelligently categorize expenses into user-definable categories.
	Secure Data Persistence	All extracted and structured receipt data (JSON format) is securely stored in a dedicated Firestore database, linked to the user's Firebase Auth UID.

List of features offered by the solution

We've structured our features into three layers: The Core Engine, The Intelligence Layer, and The User Experience.

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Intelligence Layer	**Persona-Driven AI Coach**	Onboarding includes selecting a financial persona (e.g., Student, Freelancer, Parent). The Gemini-powered agent adapts its tone, goal-setting difficulty, and financial advice accordingly.
	Contextual Query Engine	Users can ask complex, natural language questions that require reasoning across multiple receipts. Examples: *"Is the warranty still valid for the headphones I bought in May?"*, *"Compare my grocery spending at BigBasket vs. Zepto this quarter."*
	Proactive Savings & Spending Alerts	The system analyzes spending velocity and patterns. It will generate alerts like, *"Heads up! You're 80% through your 'Entertainment' budget with 15 days left in the month."*
	Predictive Inventory Management	For consumable goods (groceries, toiletries), the agent can estimate consumption rates and prompt the user when they might be running low (e.g., *"You usually buy laundry detergent every 3 weeks. Need to add it to your list?"*).

List of features offered by the solution

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User Experience	**Dynamic Google Wallet Integration**	This is our primary UI. We generate and update passes for: Savings Goals (with progress bars), Spending Summaries, Achievement Badges, Shopping Lists, and Insight Alerts. We will use the Google Wallet API's push notification feature.
	Gamification & 'Wallet Quests'	Users earn points (XP) and badges for positive financial actions like meeting a budget, increasing savings, or completing a "No-Spend Weekend" quest.
	Seamless Mobile App Interface	A lightweight native or Flutter app for onboarding, detailed analysis, persona management, and initiating complex queries. The day-to-day interaction happens in Google Wallet.

Process flow diagram or use-case diagram

Technologies to be used in the solution

- **AI/ML:** Vertex AI Agent Builder, Gemini 2.5 Flash API (on Vertex AI), Google Cloud Vision & Translation APIs (for specific tasks involving multilinguality as a fallback option).
- **Backend & Compute:** Cloud Run (for containerized microservices in a serverless approach where users do not get blocked when multiple concurrent users access)
- **Database & Storage:** Firestore (for NoSQL document storage of user data and receipts), Cloud Storage (for raw media files).
- **Messaging:** Pub/Sub (for decoupling asynchronous workflows).
- **Frontend & App Platform:** Native Android (Kotlin) or Flutter for the companion app. **Firebase** will be used extensively for **Authentication**, and we will leverage **Firebase Studio** to accelerate development, aiming for the special prize.
- **Integration:** Google Wallet API.
- **Operations:** Cloud Logging and Cloud Monitoring for observability and debugging.

Architecture diagram of the proposed solution

Wireframes/Mock diagrams of the proposed solution (optional)