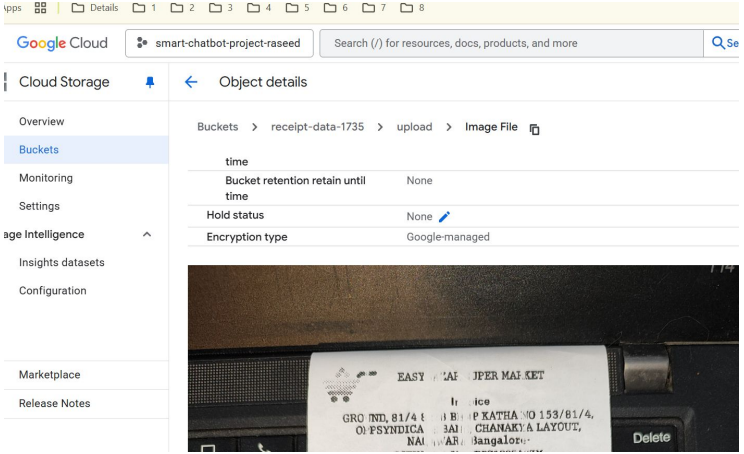
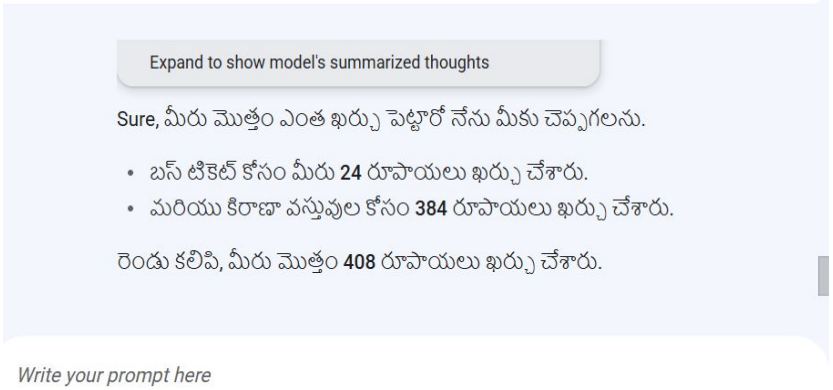
Team Details

a. Team name: Nudglet
b. Team leader name: Navya M
c. Problem statement: Receipt Management for Google Wallet

Problem that you are solving (add infographics)

Offline & Online Finance data Management : Uploading the bill and extracting the data from the bill using OCR

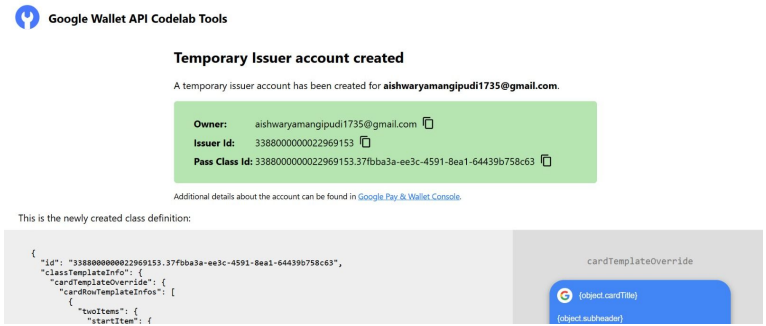




Language barrier voice enabled and chatbot to interact & get full closure insights

Brief about your solution

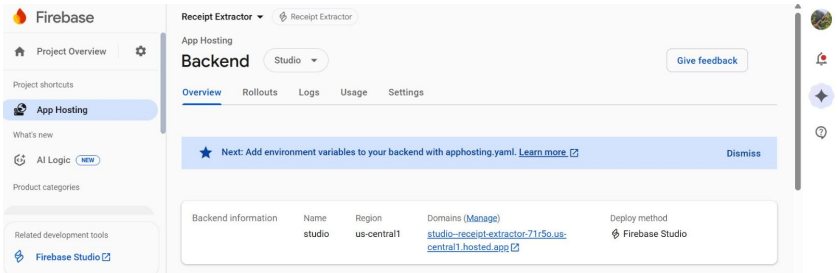
Our solution enhances Google Wallet by enabling users to upload offline receipts via camera, extract GPay transactions, and analyze spending patterns using data from WhatsApp, SMS, and email. Powered by Gemini 2.5 Flash, Vision API, OCR, and Google Colab, it intelligently organizes spending into wallet passes. A chatbot built with Vertex AI Agent Builder offers multilingual, voice-enabled interactions, letting users ask expense-related questions. Firebase Studio provides visual insights through charts, graphs, and timelines. The app delivers nudges, location-based alerts, and self-care suggestions supporting mindful financial decisions and mental wellness through personalized, AI-driven insights within an easy-to-use Wallet ecosystem.



Generic Pass creation in Google Wallet

Google technologies used and their use cases

- **Gemini + Cloud Vision + Vertex AI Agent :** Use Gemini 2.5 Flash Pro for analyzing images/videos, Cloud Vision for OCR, and Vertex AI Agent for conversational queries.
- **Translation API:** Supports local languages so users can interact in their preferred tongue.
- **Google Wallet API**: FastAPI connects to the Google Wallet API to dynamically create and update smart passes, transforming Wallet into an AI-driven spending hub..
- **Push Notifications:** Uses Wallet Push API to send intelligent, real-time alerts on spending or savings.
- **Firebase Studio:** Firestore stores structured receipt,
- **Cloud Functions Backend**: Handles processing, orchestrates AI pipelines, and ties everything together.
- **Google Colab:**To load the json extracted data into GCP bucket



For Uploading receipt by user

Features of the solution

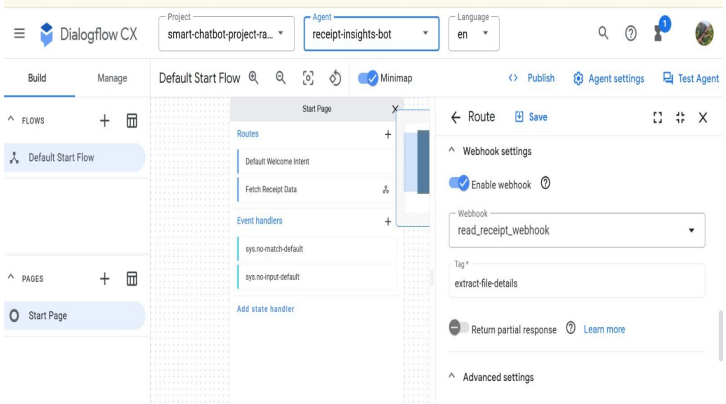
Unified Receipt Capture – Extracts data from offline receipts (images/videos) and online GPay transactions using Vision API & OCR.

Smart Notes & Offer Parsing – Collects spend reasons and offer data from WhatsApp, SMS, and emails.

AI Chatbot Support – Uses Gemini 2.5 + Vertex AI Agent Builder for multilingual, voice-enabled expense queries.

Insightful Dashboards – Visualizes spending with graphs, timelines, and category filters via Firebase Studio.

Wellness & Alerts – Sends personalized nudges, location-based notifications, and self-care suggestions.



Dialogflow CX

Impact of the solution

Enhanced Financial Awareness – Helps users track and reflect on their spending with detailed insights and summaries.

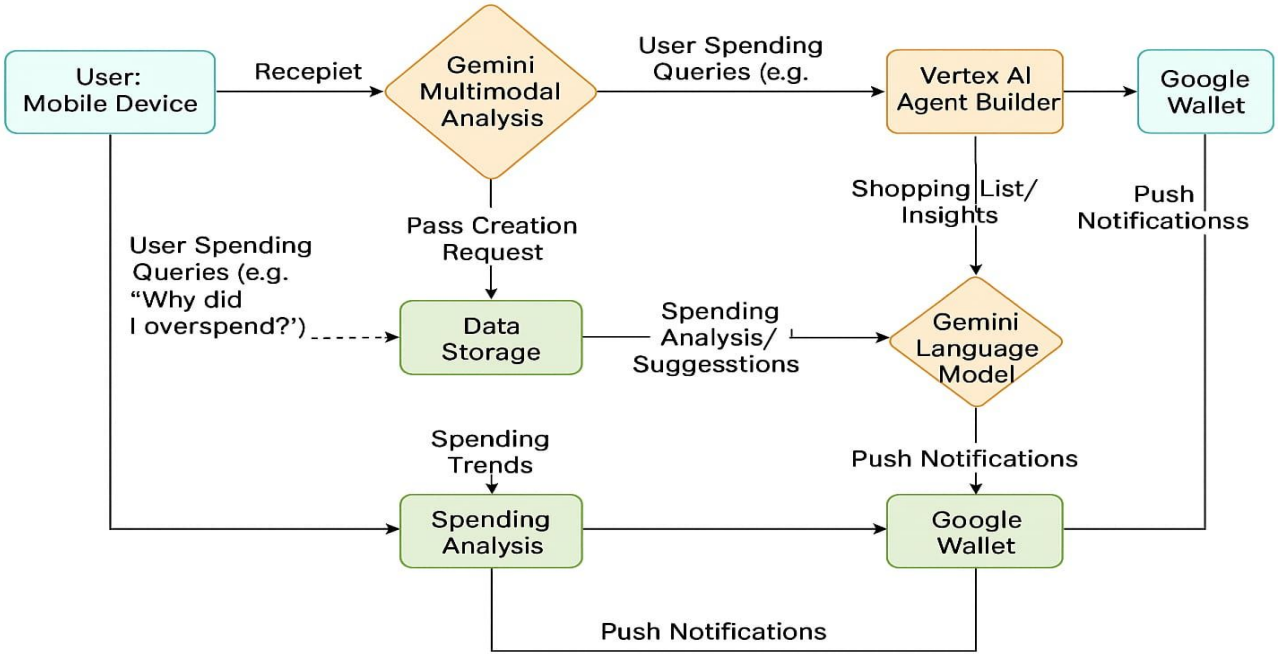
Bridges Offline & Online Data – Unifies receipts from physical purchases and digital transactions into one smart wallet.

Mental Wellbeing Support – Reduces financial stress through timely nudges, suggestions, and decision support tools.

Inclusive & Accessible – Supports voice, local language queries, and multilingual chatbot for broader user adoption.

Data-Driven Personalization – Offers contextual insights and offers based on user behavior, location, and preferences.

Architecture diagram of the proposed solution



How is this solution different from others

Multimodal Input Integration – Combines image-based receipts, GPay data, WhatsApp/SMS/email offers into one unified financial view.

Conversational Insights – Users can query their expenses via voice or text using a multilingual chatbot built with Vertex AI Agent Builder.

Smart Visual Analytics – Offers pie charts, timelines, and graphs auto-generated with Firebase Studio for intuitive financial understanding.

Contextual Nudges – Sends personalized, location-based, and behavioral notifications to guide better spending habits.

Self-Care & Wellness Support – Goes beyond finance by providing self-care tips and mental wellness nudges based on user behavior.

Future scope

AI-Powered Budgeting & Forecasting: Use Gemini 2.5 Flash to predict spending patterns, offer budget tips, and auto-categorize expenses smartly.

Unified Financial Hub: Integrate bank accounts, GPay, SMS, email, and offline receipts to give users a 360° view of their finances.

Smart Notifications & Rewards: Provide location-based nudges, offer reminders, and personalized savings alerts in real-time.

Inclusive & Multilingual Experience: Expand with offline access, regional language support, and voice-based interactions for rural and diverse users.

Wellbeing & Decision Support: Empower mindful spending via mood-based insights, chatbot-guided queries, and visual analytics like graphs & timelines.

Google Cloud

Agentic AI Day

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Files

sample_data

1000164010.jpg

smart-chatbot-project-raseed-486c4b...

```
[ ] from google.colab import files
    uploaded = files.upload()  # Upload your downloaded key.json file here
```

Choose Files smart-chatb...59e2d.json

- **smart-chatbot-project-raseed-486c4b559e2d.json**(application/json) - 2422 bytes, last modified: 7/27/2025 - 100% done

Saving smart-chatbot-project-raseed-486c4b559e2d.json to smart-chatbot-project-raseed-486c4b559e2d.json

```
[ ] import os
    os.environ["GOOGLE_APPLICATION_CREDENTIALS"] = "/content/smart-chatbot-project-raseed-486c4b559e2d.json"
```

```
[ ] from google.cloud import vision
```

```
import io
import json

# Initialize Vision client
client = vision.ImageAnnotatorClient()
```

Google Cloud | smart-chatbot-project-raseed | Search (/) for resources, docs, products, and more | Search

Vertex AI | Receipt extraction | Compare | Autosave | Clear | Build with code | Docs

Tools

Dashboard

Model Garden

Pipelines

Notebooks

Colab Enterprise

Workbench

Vertex AI Studio

Create prompt

System instructions

Give the model context to understand the task and provide tailored responses

Model

gemini-2.5-flash

Our standard reasoning model that allows you more control over how the model thinks

Switch model

Outputs

Structured output

Expand to show model's summarized thoughts

Sure, మీరు మొత్తం ఎంత ఖర్చు పెట్టారో నేను మీకు చెప్పగలను.

- బస్ టికెట్ కోసం మీరు **24** రూపాయలు ఖర్చు చేశారు.
- మరియు కిరాణా వస్తువుల కోసం **384** రూపాయలు ఖర్చు చేశారు.

రెండు కలిపి, మీరు మొత్తం **408** రూపాయలు ఖర్చు చేశారు.

Write your prompt here

Components of Expenditure

Receipt 1: BMTC Bus Ticket

- **Issuer:** BMTC (Bangalore Metropolitan Transport Corporation)
- **Ticket Number:** T No: 526
- **Date:** 06-07-2025 (Note: This date appears to be in the future, which is unusual for a bus ticket likely issued recently. It could be a machine

Google Cloud

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Thank you!