



Google Maps

Google Maps AI

Live Code Demo

Google Maps AI

Sync your journey to your beat, powered by Gemini 2.0 Flash AI

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Celebrating Google Maps Hackathon

August 1, 2025

Agenda

- 1 Project Overview
- 2 Technical Architecture
- 3 How It Works
- 4 Key Components
- 5 User Interface
- 6 Deployment
- 7 Future Enhancements
- 8 Contributing

What is Google Maps AI?

- **AI-Powered Road Trip Assistant**
- Built with Google's Agent Development Kit (ADK)
- Leverages Gemini 2.0 Flash AI model
- Natural language conversation interface
- Comprehensive trip planning capabilities



Maps AI

Key Features

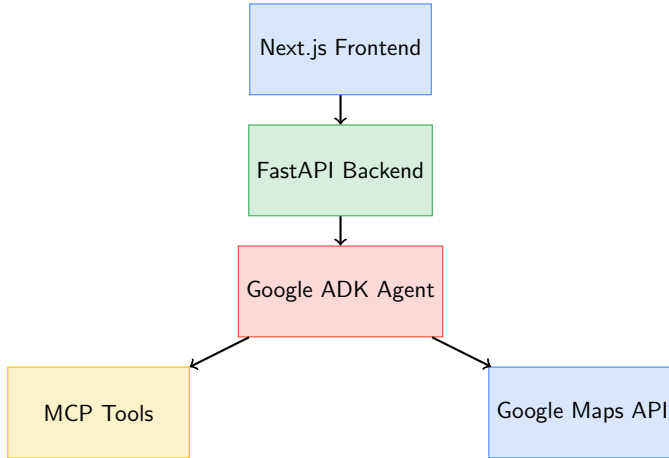
AI Capabilities

- Intelligent route optimization
- Conversational interface
- Personalized recommendations
- Multi-day trip support

Travel Assistance

- Weather forecasts
- Clothing recommendations
- Pet-friendly options
- Budget-conscious planning

System Architecture




Technology Stack

Component	Technology
AI Model	Gemini 2.0 Flash
Agent Framework	Google ADK
Protocol	Model Context Protocol (MCP)
Backend	FastAPI (Python 3.11+)
Frontend	Next.js 14 with TypeScript
Styling	Tailwind CSS
Deployment	Docker & Google Cloud Run
Maps Integration	Google Maps API

Conversation Flow

- ➊ **Warm Greeting:** AI welcomes user as road trip assistant
- ➋ **Starting Point:** Asks where journey begins
- ➌ **Destination:** Determines final destination (supports scenic routes)
- ➍ **Duration:** Establishes trip length
- ➎ **Preferences:** Gathers personalized details
 - Pet accommodations
 - Budget level
 - Interests (nature, food, history)
 - Dietary restrictions
- ➏ **Itinerary Creation:** AI generates customized trip plan

chat interface

**Maps Assistant**
Online

+ New Conversation

Active Agent:
Maps Assistant
2 conversations

Hi


Okay, here's the full plan for your 3-day road trip from San Francisco to Los Angeles via Big Sur! ##...




1m ago26 messages

New Conversation

6m ago0 messages

Google Maps Assistant
Powered by ADK

**Maps Assistant**
Google Maps Assistant

Connected

Sur!

Day 1: San Francisco → Monterey/Carmel (approx. 3-4 hours driving)

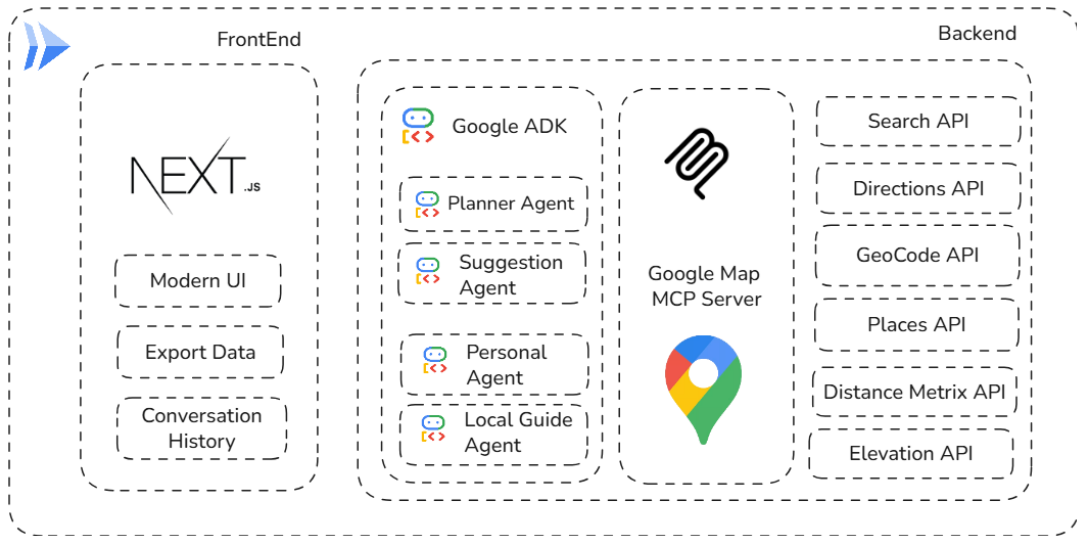
- **Morning:** Start your day with a scenic drive down Highway 1.
- **Stop 1: Half Moon Bay.** Enjoy the beautiful coastal views and let your furry friend stretch their legs at **Half Moon Bay State Beach**. (Many areas are dog-friendly, but always check signage).
- **Lunch: The Flying Fish Bar & Grill** in Half Moon Bay. Offers some vegan options and a dog-friendly patio.
 - Address: 218 San Mateo Rd, Half Moon Bay, CA 94019
- **Afternoon:** Continue down Highway 1, enjoying the stunning views.
- **Stop 2: 17-Mile Drive.** This scenic loop through Pebble Beach is a must-see (there is a toll). Stop at the **Lone Cypress** for a photo op. 🌲

Ask about places, directions, or anything maps-related...

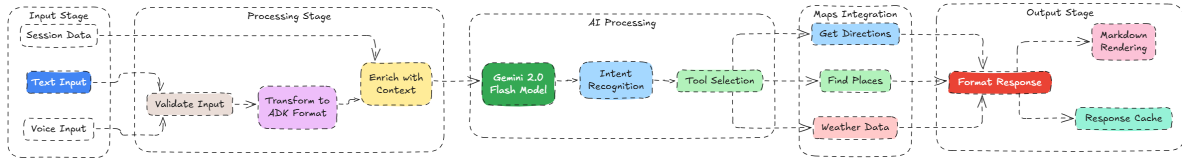
▶ Send

Audio Unmuted

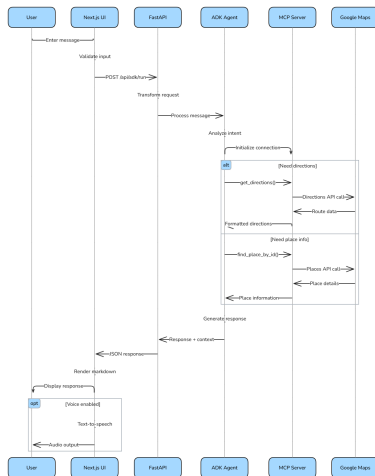
Technical architecture



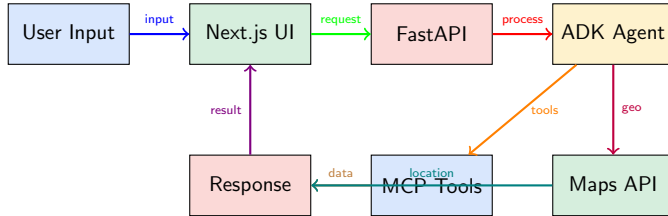
Project Structure



Sequence diagram



Data Flow Diagram



AI Agent Configuration

```
# agent.py
root_agent = LlmAgent(
    model='gemini-2.0-flash',
    name='maps_assistant_agent',
    instruction=prompt.instruction,
    tools=[
        MCPToolset(
            connection_params=StdioServerParameters(
                command='npx',
                args=["-y", "@modelcontextprotocol/server-google-maps"],
                env={"GOOGLE_MAPS_API_KEY": google_maps_api_key}
            ),
        ),
    ],
)
```

Model Context Protocol (MCP) provides:

- Seamless tool integration for Maps functionality
- Available tools:
 - `get_directions` - Route planning
 - `find_place_by_id` - Location details
 - `search_places` - Discovery
 - `get_place_details` - Reviews & info
- Extensible architecture for additional tools
- Real-time API integration

Modern Chat Interface

Features:

- Real-time chat with AI
- Voice input/output support
- Session management
- Conversation history
- Export capabilities
- Connection status indicator

UI Components:

- React with TypeScript
- Tailwind CSS styling
- Responsive design
- Markdown rendering
- Google Maps theme

Example Interaction

User

I want to plan a 3-day road trip from San Francisco to Los Angeles via Big Sur

AI Assistant

Great choice! That's one of the most scenic routes on the West Coast. Let me help you plan this amazing trip...

Day 1: San Francisco Monterey (2.5 hours)

- Morning: Depart SF, stop at Half Moon Bay
- Lunch: Pescadero (Duarte's Tavern)
- Afternoon: 17-Mile Drive, Pebble Beach
- Evening: Stay in Monterey

Weather: 65-72F, partly cloudy

What to Pack: Layers, comfortable walking shoes, camera

Deployment Options

Docker Deployment

- Multi-stage build
- Optimized image size
- Environment variables
- Health checks included
- Non-root user security

Google Cloud Run

- Serverless deployment
- Auto-scaling
- HTTPS by default
- Pay-per-use pricing
- Easy CI/CD integration

Quick Start Commands

```
# Clone repository
git clone https://github.com/Yash-Kavaiya/GMap-Buddy.git
cd GMap-Buddy

# Set environment variable
export GOOGLE_MAPS_API_KEY="your_api_key_here"

# Docker deployment
docker build -t gmap-buddy .
docker run -d -p 8080:8080 \
    -e GOOGLE_MAPS_API_KEY="your_api_key_here" \
    --name gmap-buddy-container gmap-buddy

# Access at http://localhost:8080
```

Roadmap & Future Features

Planned Features:

- Real-time traffic integration
- Collaborative trip planning
- Social sharing capabilities
- Offline mode support
- Mobile app development

AI Enhancements:

- Multi-modal inputs (images)
- Historical trip learning
- Dynamic re-routing
- Local event integration
- Personalization engine

How to Contribute

- **GitHub Repository:** github.com/Yash-Kavaiya/GMap-Buddy
- **Report Issues:** Found a bug? Let us know!
- **Feature Requests:** Share your ideas
- **Code Contributions:** Submit pull requests
- **Documentation:** Help improve our docs
- **Testing:** Test on different platforms

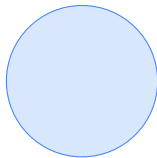
Development Process

Fork Feature Branch Code Test Pull Request

Thank You!

Google Maps AI

Transforming road trip planning with AI



Try it out: <https://github.com/Wiikay/Google-Maps-AI>.

Devpost: Celebrating Google Maps