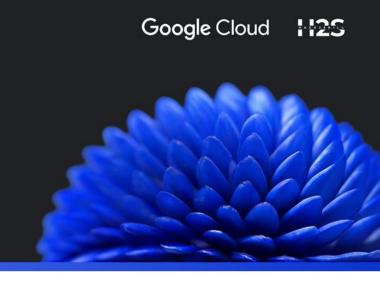


Gen Al Exchange Hackathon



Team Name: Trip Sense

Team Leader Name: Sukhsimar Singh

Problem Statement: [Professional] Personalized Trip Planner with Al

"The world is a book, and those who do not travel read only one page."

Saint Augustine

Common Challenges in Planning Trips

- Overwhelming Choices: Too many destinations, hotels, and attractions to choose from.
- Lack of Personalization: Most tools give generic itineraries, not tailored to preferences.
- Real-Time Uncertainty: Weather, traffic, and local events change plans last minute.
- Time-Consuming: Manually comparing flights, hotels, and activities takes hours.
- Budget Constraints: Difficult to balance affordability with quality experiences.
- Group Coordination: Aligning preferences across multiple travelers is challenging.

The Solution?

An Al Powered trip planner!



From budget-friendly getaways to luxury escapes, our Al assistant helps you discover amazing destinations, create detailed itineraries, and find the best places to visit based on your preferences.

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Table of Contents:

- Overview
- Key Features and Unique Selling Points
- Why Trip Sense?
- Application Walkthrough

Trip from Chandigarh to Tokyo

- How it works?
- Features
- User Flow Diagram
- BPMN Diagram
- Application Architecture
- Tech Stack Used

Overview

Trip Sense is an intelligent travel planning application powered by **Google's Gemini AI** that creates personalized itineraries using real-time data from Google Maps, Places, and Weather APIs. Built with Streamlit for a modern, interactive web interface.

Trip Sense eliminates the "planning fatigue" that comes with traditional trip planning by: Automating Research - Al handles all location discovery, weather checking, and validation:

- · Providing Real-Time Data Always current information from live APIs
- Enabling Natural Interaction Chat-based refinement instead of complex forms
- Offering Complete Solution Plan, refine, save, export, and manage in one place
- Delivering Professional Output High-quality PDFs ready for travel

The Result? Users get professional-quality, personalized itineraries in minutes instead of hours of manual research across multiple websites. This positions Trip Sense as a next-generation Al-native travel planner rather than just another booking platform with Al features bolted on.

Key Features

- Smart Al Planning Generates detailed day-by-day itineraries with real-time data
- Interactive Chat Interface Refine and customize trips through conversation
- Real-time Integration Google Maps, Places, and Weather APIs for live data
- Personalization Engine 10+ travel styles, budget levels, dietary preferences
- · Trip Management Save, edit, export to PDF, and manage multiple trips
- Function Calling Automatic API integration for attractions, restaurants, hotels

Unique Selling Points

- · Zero Manual Research AI handles all location discovery and validation
- Live Data Integration Real-time weather, attractions, and availability
- Complete Trip Lifecycle Plan → Chat → Save → Export → Manage

Why Trip Sense?

Feature	Trip Sense	Traditional Planners	
Data Source	Real-time API integration	Static databases	
Planning Method	Al-driven with function calling	Manual search + filters	
Customization	Conversational refinement	Form-based modifications	
Integration	6 Google APIs seamlessly integrated	Limited API connections	
User Experience	Single-app complete journey	Multi-platform fragmented	
Intelligence	Context-aware Al responses	Rule-based recommendations	
Export Quality	Professional PDF with links	Basic text/PDF exports	
Trip Management	Full lifecycle management	Limited post-creation options	



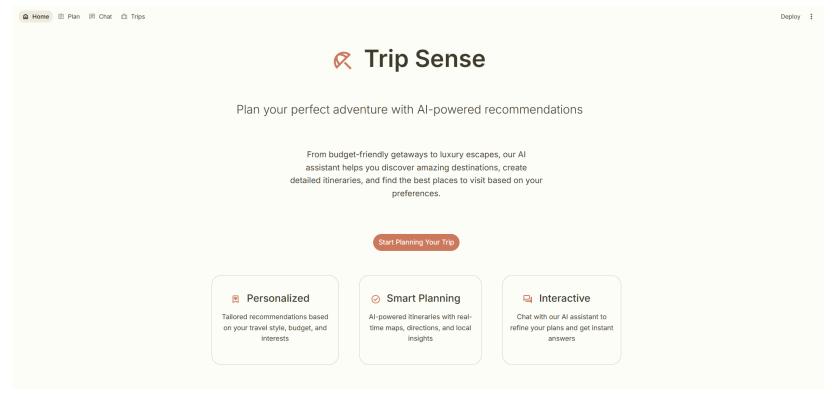
Let's Plan a Trip from

Chandigarh to Tokyo!

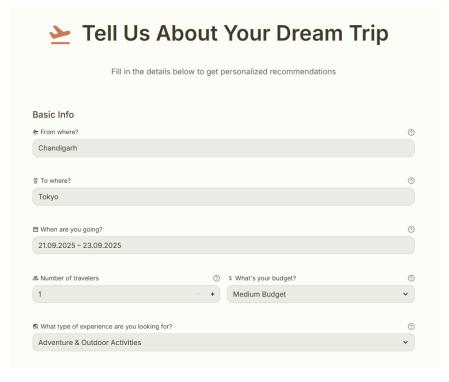
In this Application walk though we will see how Trip Sense achieves smooth trip generation and removes the burden that comes with planning trips

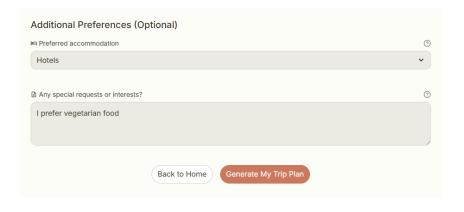
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Application Layout : Home Page



Application Layout : Form Page





Key inputs from the User are taken to plan the perfect trip and ensuring all important details such as Initial location, Destination, Dates, Travellers, Budget and Experience are considered. Moreover, there Additional preferences section is also provided to account for special needs

Application Layout: Chat Page



Planning your trip from Chandigarh to Tokyo from Sep 21 to Sep 23, 2025

- Hi! I can help plan trips. Tell me destination, dates, budget, interests.
- Plan a trip with the following preferences: Origin: Chandigarh Destination: Tokyo Duration: 2 days Travel dates: September 21, 2025 to September 23, 2025 Season: Autumn Travel month(s): September Group size: 1 Travel style: Adventure & Outdoor Activities Budget: Medium Budget Accommodation preference: Hotels Special requests: I prefer vegetarian food Please create a detailed, conversational Itinerary with:
- 1. Transportation options from Chandigarh to Tokyo with estimated costs and travel times
- 2. A day-by-day plan with specific recommendations
- 3. Practical tips and travel advice considering the season and time of year
- 4. Weather considerations and appropriate activities for Autumn travel
- 5. Budget estimates and booking suggestions
- 6. Seasonal highlights and events that might be happening during September
- 7. Time zone differences and jet lag considerations if traveling from Chandigarh

Format your response in clear markdown with headings and bullet points for easy reading.

Checkout the Generated Itinerary in the next page!

Here is where the magic happens! The AI assistant uses the initial info and generates a detailed day to day itinerary including all the activities with the times. It also generates the Booking urls for flight search, Hotels and Restaurants mentioned in the itinerary.

Application Layout: Chat Page: Response



Hello there! Get ready for an incredible adventure in Tokyo! I'm TripSense, and I'm thrilled to help you plan a fantastic 2-day solo trip from September 21st to September 23rd, 2025, focusing on outdoor activities and vegetarian delights.

Tokyo in autumn is a magical experience, with pleasant weather and beautiful foliage starting to emerge. Let's dive into your personalized itinerary!

Your Tokyo Autumn Adventure: Nature, Views & Veggie Delights!

Flights from Chandigarh to Tokyo

Getting from Chandigarh to Tokyo will involve a layover, as there are no direct flights. Here are some options to consider:

- Airlines: Look for flights with carriers like Air India, ANA, Japan Airlines, or other international airlines that connect through major hubs like Delhi, Mumbai, or even Bangkok or Singapore.
- Estimated Travel Time: Expect a total travel time of approximately 12-18 hours, including layovers.
- Estimated Cost: Flight prices can vary significantly, but for a medium budget, expect to pay around INR 40,000 60,000 (approximately 480 720 USD) for a round trip. Booking in advance is highly recommended for better deals.

Search Flights from Chandigarh to Tokyo

Accommodation in Tokyo

For a medium budget and good access to various parts of the city, consider hotels in areas like Shinjuku, Shibuya, or Ueno. These areas offer a good mix of amenities, transportation, and dining options.

- Hotel Recommendation:
- Shinjuku Granbell Hotel
- Rating: 4.0/5
- Price Level: 3 (Medium)
- . Rationale: Modern design, comfortable rooms, and excellent location in Shinjuku, offering easy access to public transport and vibrant nightlife.
- Book Shinjuku Granbell Hotel

The response is Broken Down into 3 Sections:

- Travel Advice: Gives flight recommendations and booking links
- Accommodation Advice: Gives Gotel Recommendations and the booking links
- Day to Day Itinerary: That would be covered in the next slide

Here is the Response from Trip Sense! The ai assistant gives a structured markdown response which clearly mentions the objectives and also highlights key details such as headings, neatly organises stuff with bullet points

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Day-by-Day Itinerary

Day 1: Sunday, September 21, 2025 - Urban Nature & Panoramic Views

- · Morning (9:00 AM 12:00 PM): Shinjuku Gyoen National Garden
- Weather Advice: The morning will be pleasantly cool, around 20-22°C. A light jacket or cardigan would be perfect.
- Rationale: Start your adventure with a serene escape in one of Tokyo's most beautiful and expansive gardens. It's a perfect way to ease into the
 city's pace and enjoy some greenery.
- Activity: Explore the various garden styles, including French Formal, English Landscape, and traditional Japanese. Look out for early signs of
 autumn foliage
- Booking: Book Tickets for Shinjuku Gyoen National Garden
- Travel: A short walk from Shinjuku Station.
- Lunch (12:30 PM 1:30 PM): Ain Soph. Journey Shinjuku
- Weather Advice: The temperature will be comfortable for a walk to the restaurant.
- . Rationale: Indulge in delicious and creative vegan cuisine at one of Tokyo's most renowned vegetarian-friendly restaurants.
- · Cuisine: Vegan, Japanese fusion
- Price Level: 3 (Medium)
- Travel: Approximately 10-15 minutes walk from Shinjuku Gyoen.
- · Afternoon (2:30 PM 5:00 PM): Tokyo Metropolitan Government Building Observation Decks
- Weather Advice: Clear skies are ideal for breathtaking panoramic views.
- Rationale: Enjoy spectacular, free 360-degree views of Tokyo, and on a clear day, even Mount Fuji! It's an excellent way to grasp the sheer scale
 of the city.
- · Activity: Head up to the North or South Observation Deck for stunning cityscapes.
- Booking: No booking required, free entry.
- Travel: Approximately 15-20 minutes walk from Ain Soph. Journey.
- Late Afternoon (5:30 PM 7:00 PM): Meiji Jingu Shrine & Yoyogi Park
- Weather Advice: The evening will be mild, perfect for a leisurely stroll.
- Rationale: Experience the tranquility of a grand Shinto shrine dedicated to Emperor Meiji and Empress Shoken, nestled within a vast forest. Yoyogi
 Park offers a glimpse into local life.
- · Activity: Walk through the impressive torii gates, explore the shrine grounds, and enjoy the peaceful atmosphere.
- Travel: Take the JR Yamanote Line from Shinjuku Station to Harajuku Station (approx, 5 minutes). The shrine is a short walk from the station.
- Dinner (7:30 PM 8:30 PM): T's TanTan (Tokyo Station)
- Weather Advice: The evening will be cool, so a warm bowl of ramen will be very comforting.
- · Rationale: Savor a hearty and flavorful vegan ramen experience, perfect after a day of exploration.
- · Cuisine: Vegan Ramen
- Price Level: 2 (Low-Medium)
- Travel: Take the JR Yamanote Line from Harajuku Station to Tokyo Station (approx. 15-20 minutes). T's TanTan is located inside Tokyo Station.

Day 2: Monday, September 22, 2025 - Coastal Views & Traditional Charm

- . Morning (9:00 AM 1:00 PM): Day Trip to Enoshima Island
- Weather Advice: Expect pleasant temperatures around 22-24°C. The coastal breeze might make it feel a bit cooler, so a light windbreaker is a
 good idea.
- Rationale: Escape the city for a refreshing coastal adventure! Enoshima offers beautiful ocean views, caves, shrines, and a relaxed island vibe.
- Activity: Explore the Enoshima Shrine, climb to the Enoshima Sea Candle for panoramic views, and discover the Iwaya Caves.
- Booking: Book Tickets for Enoshima Sea Candle & Iwaya Caves
- Travel: Take the JR Shonan-Shinjuku Line from Shinjuku Station to Fujisawa Station (approx. 55 minutes), then transfer to the Enoden Line to Enoshima Station (approx. 10 minutes).
- Lunch (1:30 PM 2:30 PM): Enoshima Island Restaurant (Vegetarian Options)
 - . Weather Advice: Enjoy the fresh sea air while dining.
 - Rationale: Many restaurants on Enoshima Island offer fresh seafood, but you can find places with vegetarian options like tempura, soba, or udon.
 Look for signs indicating "shoiin ryori" (Buddhist vegetarian cuisine) or ask for "vasai" (vegetable) dishes.
 - · Cuisine: Japanese, Vegetarian-friendly
 - Price Level: 2-3 (Medium)
 - Travel: Various options available on the island.
- · Afternoon (3:30 PM 6:00 PM): Explore Asakusa & Senso-ji Temple

Weather Advice: The late afternoon will be mild and comfortable for walking.

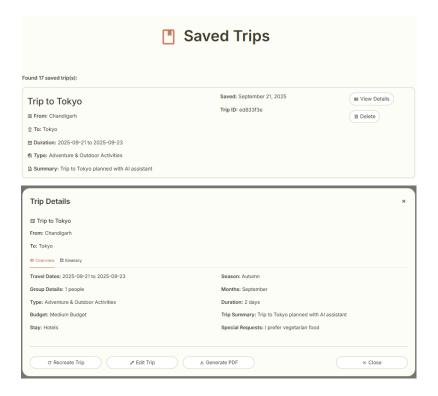
- Rationale: Immerse yourself in Tokyo's traditional past at its oldest temple, Senso-ji, and wander through the bustling Nakamise-dori market.
- Activity: Walk through the iconic Kaminarimon Gate, browse the stalls of Nakamise-dori for souvenirs, and admire the grandeur of Senso-ji
 Temple.
- Travel: Take the Enoden Line back to Fujisawa Station, then the JR Tokaido Line to Tokyo Station, and finally the Tokyo Metro Ginza Line to Asakusa Station (total travel approx. 1.5 - 2 hours).
- Dinner (6:30 PM 7:30 PM): Daikokuya Tempura (Vegetarian Options)
- . Weather Advice: A warm meal will be perfect as the evening cools.
- Rationale: While famous for its seafood tempura, Daikokuya often has excellent vegetable tempura sets that are a must-try for a traditional Japanese meal. Confirm vegetarian options upon arrival.
- Cuisine: Tempura, Japanese
- Price Level: 3 (Medium)
- Travel: A short walk from Senso-ii Temple.
- Evening (8:00 PM onwards): Sumida River Cruise (Optional)
- Weather Advice: The evening will be cool, so bring a light jacket.
- · Rationale: Enjoy a different perspective

Ask me anything about your trip..

>

The Day-to-Day itinerary covers all the important aspects of a trip, including Weather Advice, Rationale for the chosen place, Activity to do, Booking links (if required) and Travel method. It also sections the entire day by equal time periods and gives comprehensive detail about the place, activity and time.

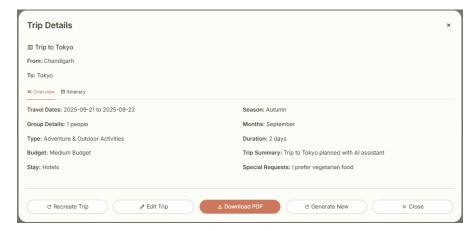
Application Layout : Chat Page : Response





After the we click Save Trip, the trip gets saved with all the important details, After clicking on the View Details option, the we can view the Trip and the important information gets populated. From the itinerary tab, we can see the Tip Details, the response model just generated

Application Layout : Chat Page : Response



We can also download the Itineraries! Once Generate PDF is clicked, the itinerary is loaded into a PDF file ready to be downloaded!

On the Right you can see the Detailed itinerary with clickable links and all the itinerary details neatly formatted. Use can share this with fellow trip partners and make it easy for everyone to follow and book stuff!

■■ Trip to Tokyo

■ Trip Overview

Destination:	Tokyo	
Travel Dates:	2025-09-21 to 2025-09-23	
Duration:	2 days	
Group Size:	1 people	
Travel Type:	Adventure & Outdoor Activities	
Budget:	Medium Budget	
Accommodation:	Hotels	
Season:	Autumn	
Travel Months:	September	

■ Trip Summary

Trip to Tokyo planned with Al assistant

■ Special Requests

I prefer vegetarian food

■■ Detailed Itinerary

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Application Flow: Summarised

Step	Page	User Action	System Response	Duration
1	Landing	Click "Start Planning"	Navigate to Form	1 second
2	Form	Fill trip details	Validate and process	2-5 minutes
3	Form	Submit form	Generate prompt, navigate	2 seconds
4	Chat	Wait for Al	Generate initial itinerary	10-30 seconds
5	Chat	Refine via chat	Al responses with updates	5-15 seconds
6	Chat	Save trip	Store to JSON, confirm	2 seconds
7	Trips	View/manage trips	Display saved trips	1 second
8	Trips	Export PDF	Generate and download	3-10 seconds

Total User Journey Time: 5-10 minutes for complete trip planning and saving. This detailed user flow demonstrates TripSense's intuitive progression from initial planning through AI-powered generation to comprehensive trip management, all while maintaining a seamless user experience with robust technical implementation.

How it Works?

Trip Sense uses the Google Gemini 2.5 model and its features to generate these robust itineraries.

Once the user submits the form, the information is stored in the streamlit's 'session_state' and then is sent as an input to the model as an initial prompt. Once the initial prompt is added, Gemini uses the function calls if required to fetch the information in real time!.

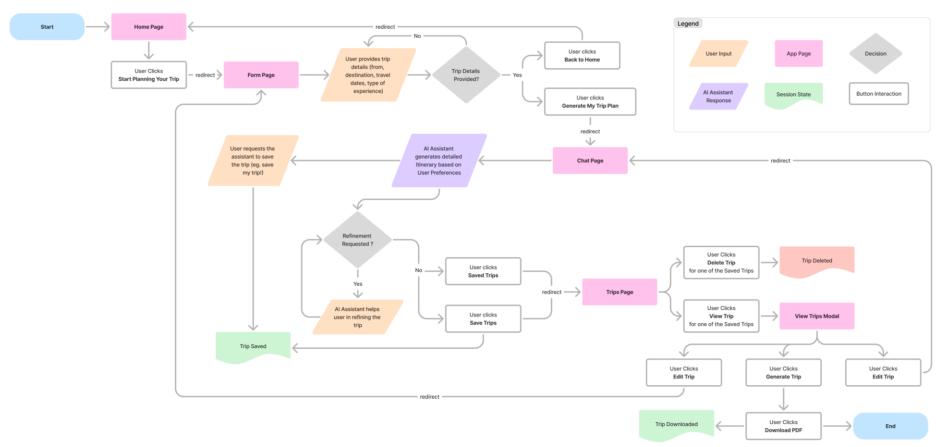
The following tools are defined in the model configuration:

- search_text() Resolves destination coordinates
- get_weather() Fetches weather forecast for travel dates
- get_nearby_attractions() Finds tourist attractions
- get_nearby_restaurants() Discovers dining options
- get_hotels() Locates accommodation options
- save_trip() Saves the trip

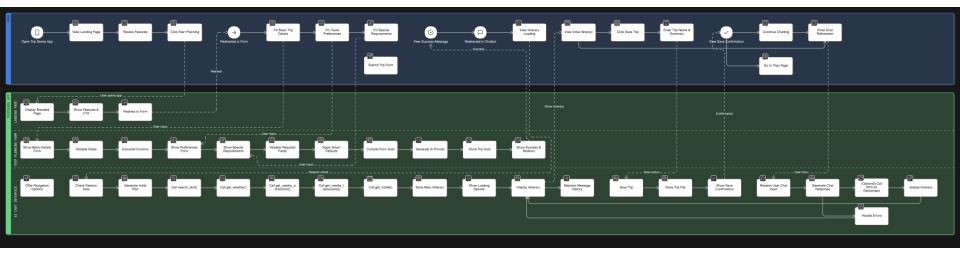
Trip Sense automatically calls these functions during response generation:

 $search_text() \rightarrow get_weather() \rightarrow get_nearby_attractions() \rightarrow get_nearby_restaurants() \rightarrow get_hotels() \rightarrow save_trip()$

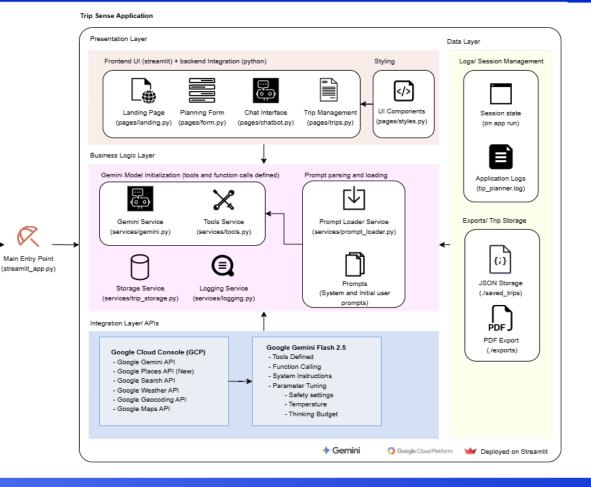
User Flow Diagram



Application Flow Diagram



Application Architecture Diagram



Data Flow Architecture

```
User Input \rightarrow Form Validation \rightarrow Prompt Generation \rightarrow AI Processing \rightarrow Function Calls \rightarrow API Integration \rightarrow Response Processing \rightarrow UI Display \rightarrow Trip Storage \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow \downarrow Form Data Validation Jinja2 Template Gemini AI Tool Execution Google APIs Format Response Streamlit UI JSON Files
```

Trip Storage Schema

```
"trip id": "string (8-char UUID)",
"user id": "string (default: 'default')",
"created at": "ISO timestamp",
"trip data": {
    "trip_name": "string",
    "trip_summary": "string",
    "form data": {
        "origin": "string",
       "destination": "string",
       "duration": "integer",
       "start_date": "YYYY-MM-DD",
       "end date": "YYYY-MM-DD",
       "season": "string",
       "travel_months": ["string"],
       "travel_type": "string",
       "budget": "string",
        "group_size": "integer",
        "accommodation": "string",
        "special requests": "string"
    "itinerary": {
        "ai response": "string (markdown)",
        "demo mode": "boolean",
        "generated at": "ISO timestamp"
```

Places API Response Schema

Weather API Response Schema

Tech Stack Used

Core Technologies

- Python : Main programming language
- Streamlit : Web application framework
- Google Gemini AI: Advanced language model with function calling
- Google Maps Platform: Location services and weather data
- Jinja2: Template engine for dynamic prompts
- PyYAML: Configuration file management

Key Dependencies

- google-genai: Google Gemini Al integration
- streamlit: Web app framework
- python-dotenv: Environment variable management
- jinja2: Template rendering
- pyyaml: YAML configuration parsing
- reportlab: PDF generation for exports
- requests: HTTP client for API calls

Estimated implementation cost (optional):

API Costs (Monthly Estimates)

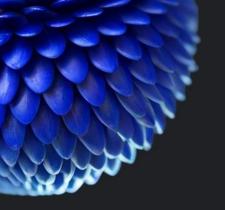
- Google Gemini AI \$50-200/month (based on token usage)
- Google Maps Platform \$100-300/month (Places, Weather, Geocoding APIs)
- Total API Costs: \$150-500/month

Infrastructure Costs (Monthly Estimates)

- · Streamlit Cloud Free for public apps, \$20/month for private
- Alternative: AWS/GCP \$50-150/month (EC2/Compute Engine + storage)
- Database (if scaling) \$25-100/month (PostgreSQL/MongoDB)
- CDN & Storage \$10-30/month



Thank you!



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Thank you

