🧠 AI-Powered Recommendation System in CinePark

Our CinePark interface offers two personalized film recommendation features, both implemented using **Genkit**, a developer tool that allows building AI-powered workflows, and powered by Google's **Gemini 2.0 Flash** model.

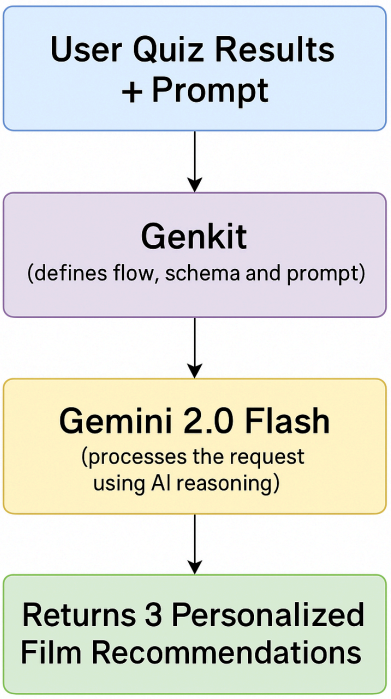
Two key technologies power this system:

🔷 Gemini: The AI Brain

- Gemini is a **large language model (LLM)** developed by Google DeepMind, similar to OpenAI's GPT.
- In our project, we use `gemini-2.0-flash`, a fast and lightweight version.
- Its role is to process natural language prompts and **generate the actual recommendations** based on user inputs.

🔧 Genkit: The AI Orchestrator

- Genkit is an **open-source AI development framework** created by Google.
- It helps developers **structure, define, and manage AI flows** using prompts, input/output schemas, and tool integrations.
- In CinePark, Genkit is how we connect user data (like quiz results) to Gemini through well-defined AI flows.



🔍 1. What AI Are We Using?

- **AI Model:** googleai/gemini-2.0-flash
- **Framework:** Genkit (open-source AI orchestration tool)
- **Provider:** Google AI (via Firebase Studio integration)
- **Usage Context:** The AI is used via Genkit definePrompt and defineFlow constructs to process quiz input and generate film recommendations.

🎯 2. What Does the AI Do and How?

A. General Film Recommendations

Handled by src/ai/flows/recommend-films.ts

- **Input:**
    - User’s personality quiz results (as a stringified JSON)
    - Movie ratings from the user
    - User's location
    - Optionally: Previously recommended films to avoid repetition

- **Process:**

  The Gemini AI is prompted to act like a *film connoisseur*. It receives your personality data and uses that to select **3 unique, hidden gem films**—such as indie, foreign, or cult classics—that match the user’s psychological profile and viewing preferences.

- **Output:**
    - title, genre, description, and a personalized why explaining the match

- **Goal:**
  Deliver highly personalized recommendations beyond typical blockbusters, making the experience feel more curated and niche.

B. Local Cinema Recommendations

Handled by src/ai/flows/recommend-local-films.ts

- **Input:**
    - User’s personality quiz results
    - User location (hardcoded to Barcelona)

- **Process:**
  The Gemini model is given a **CSV list of films currently showing in cinemas across Barcelona** (like Cinesa Diagonal Mar, Cinemes Verdi, etc.). It filters this list using the personality profile to **select exactly 3 best-fit films** currently playing.

- **Output:**
    - title, cinemaName, cinemaLocation for each film

- **Goal:**
  Help users discover current movies in nearby cinemas that best match their personality, creating a bridge between preferences and real-world availability.

📊 3. What Data Is Used?

- **Personality Quiz Results:**
  Based on Big Five traits (Openness, Conscientiousness, Extraversion, Agreeableness, Neuroticism) + optional movie preferences

- **Location Info:**
  Used to either personalize context or filter local film options

- **Film Datasets:**
  - General: Generated internally by AI using external knowledge
  - Local: Hardcoded film list from Barcelona cinemas in CSV format

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✅ 4. Why Is This a Good AI Design?

- **Context-aware Personalization:** Recommendations are not generic; they align with the user's unique psychological profile.
- **Real-world Integration:** For local films, only movies currently in cinemas are considered.
- **Avoids Repetition:** Tracks previously recommended titles to maintain variety.
- **Explainability:** The AI provides not just a recommendation, but a reason behind each choice.
- **Efficiency:** Fast and dynamic, enabled by Genkit + Gemini's lightweight (flash) variant optimized for responsiveness.