



Memory Jogger

Supporting People with Dementia

Problem Statement

Dementia impairs short-term and associative memory, leaving patients unable to recall names, faces, or recent events. Families and caregivers juggle constant reminders for medication, appointments, and social visits yet can’t always be present. This gap erodes patient dignity, increases caregiver stress, and deepens social isolation.

Target Audience & Context

Primary users—elderly individuals with mild to moderate dementia at home or in care facilities—benefit from a simple, voice-first interface to access personal data like contacts, photos, and calendars. Secondary users—family caregivers and professional staff—use a companion dashboard to monitor reminders, confirmations, and patient status, ensuring continuous support and oversight.

Gen-AI Use Case

Knowledge Graph Population: An LLM ingests raw inputs (contacts, call transcripts, SMS, calendar events, photo metadata), extracts entities (people, relationships, dates, locations, reminder intents) to build the graph, then auto-generates concise summaries of key people, dates, tasks, and upcoming reminders.

RAG Contextual Q&A: User queries (“Who is this?” / “When did I last talk to Rekha?”) trigger graph retrieval of relevant facts (e.g., contact names, timestamps), which are fed into the LLM to produce accurate, personalized responses.

Flashcard Generation: A generative model creates spaced-review flashcards pairing faces, names, and contextual notes for memory reinforcement.

Dynamic Reminder Creation & TTS: Calendar entries and RSVPs are transformed into friendly text prompts (“Your daughter Priya visits at 4 PM”) and rendered in a soothing, caregiver-style voice using TTS.

Caregiver Reports: Periodic narrative summaries of completed, missed, and upcoming reminders are generated for the caregiver dashboard, enabling proactive support.

Feasibility & Execution

Tools & Data: Knowledge Graph: Neo4j (cloud master), Room/SQLite (on-device), Face Detection & RAG: TensorFlow Lite (embeddings + LLM), ML Kit , Voice I/O: ASR, Kokoro-82M(TTS), Data Ingestion: Android provider. APIs (Contacts, CallLog, SMS, Calendar, MediaStore), Cloud & Sync: Firebase Functions (photo clustering, analytics), Firestore (encrypted backup)

Day 1	Day 2
- Ingest contacts, calls, SMS, calendar, photos.	- Build Reminder Engine (scheduler, Yes/No/Repeat flow).
- Populate on-device graph (Room) and set up Neo4j master graph schema.	- Implement Firebase-driven photo clustering and encrypted sync to Neo4j.
- Construction of graph RAG	- Design minimal UI end-to-end testing

Scalability & Impact

Memory Jogger’s hybrid design scales by distributing real-time inference on-device and heavy tasks in the cloud. Modular APIs, multilingual support, and caregiver dashboards integrate into hospitals and home care. By reducing caregiver burden and enhancing patient autonomy, it drives improved outcomes and broad adoption worldwide.

Conclusion & Minimum Lovable Product

Memory Jogger can be commercialized as a subscription service that helps people with dementia regain independence and supports caregivers with real-time analytics and alerts. Licensed direct-to-consumer or to eldercare institutions and hospitals, this model ensures recurring revenue, sustainable growth, and meaningful impact on daily care.

MVP Features:

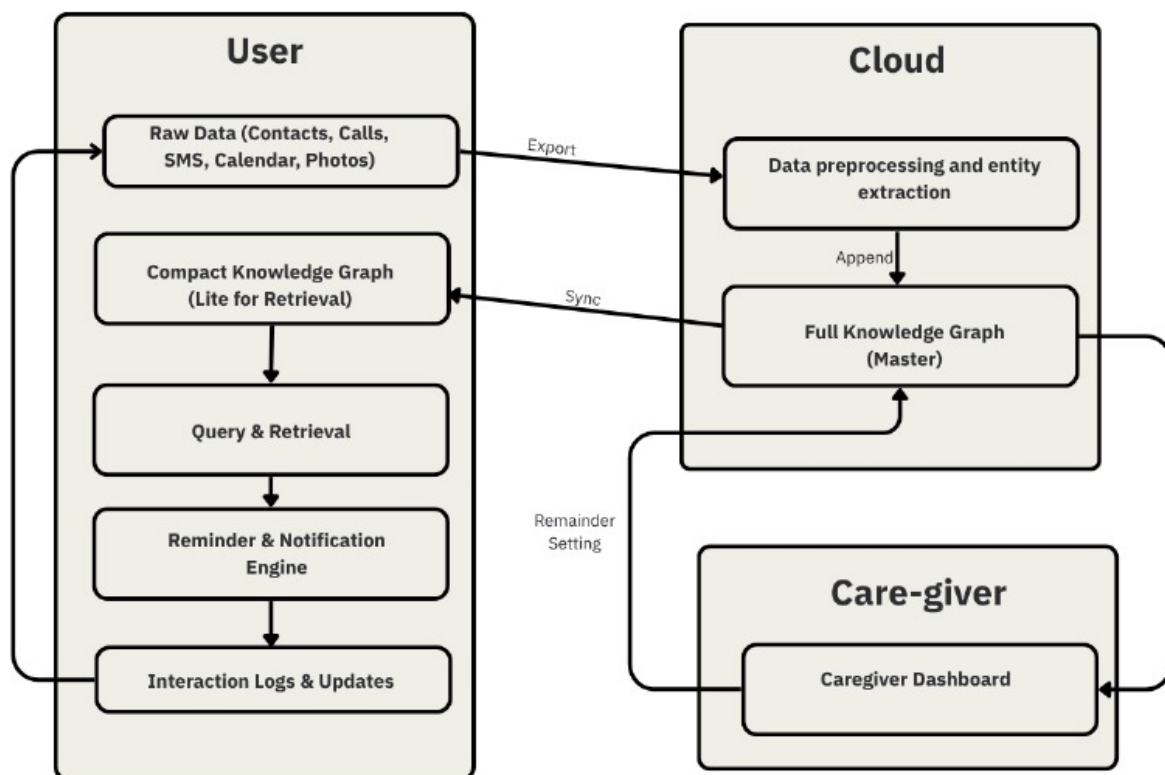
Universal Access: Usable on both smartphones and button phones(Via automated phone calls).

Offline and Voice-First: All core features work without internet, with a simple three-button UI and voice or tap activation for accessibility.

Personalized Flashcards: Automatically creates custom name-face-note cards for spaced memory reinforcement.

Location-Based Prompts: Delivers context-aware reminders and flashcards based on location, such as prompting photo reviews when arriving at specific places.

Solution Framework / Workflow



Citation:

AI tools such as ChatGPT to draft documentation, Sora for video generation, and Eleven Labs for voice-over production were used.