Memory Jogger

Supporting People with Dementia

Problem Statement

Dementia gradually erodes memory, making it hard to recall names, tasks, or events. Simple questions like "Who is Priya?" can lead to confusion, stress, and reduced independence. Caregivers often struggle to manage daily prompts, medications, and reassurance—especially from afar. Existing apps are too complex or generic for those with cognitive decline. What's needed is a simple, voice-first memory assistant that reinforces familiarity, ensures routine completion, and supports meaningful connection—empowering users while easing caregiver load.

Target Audience & Context

Memory Jogger is built for individuals in early to mid-stages of dementia or memory loss, and the caregivers supporting them. These users benefit from minimal, calming interfaces with personalized reminders and gentle voice guidance. Family caregivers, often working or remote, need timely updates on missed or completed tasks. The app is designed to reduce anxiety, boost confidence, and create small daily wins—helping both users and caregivers navigate memory challenges with less friction and more compassion.

Gen-AI Use Case

Memory Jogger uses Generative AI to power a wide array of context-aware memory support features:

- **Voice-First Conversational Support**: Voice support provides contextual answers through speech and visuals, combining names, photos, and timelines seamlessly.
- **Reminder & Confirmation Engine**: Sends TTS-based reminders with Yes/No/Repeat options and caregiver alerts. Missed-task detection triggers caregiver or emergency notifications.
- **Visitor Arrival Reminders**: Announces names, photos, and relationships before visits with confirmation and fallback mechanisms.
- **Proactive, Context-Aware Prompts**: Offers location or time-based suggestions—e.g., "You're at the park—want to see last week's photos?"
- **Custom Flashcards**: Automatically created after calls, visits, or recognition events—users practice name-face recall via visual flashcards.
- **Personal Knowledge Graph**: Dynamically generated graph links people, photos, call logs, dates, and relationships to personalize memory assistance.

Solution Framework / Workflow

1. On-Device Data Ingestion

- Leverage the device's contacts and call-log APIs for ingesting contacts, call history, and caregiver-tagged roles.
- Use the system's media, messaging, and calendar APIs to load photos, SMS, and event data for on-device face detection, clustering, and NLP extraction.

2. Personal Knowledge Graph

- Nodes: People, photos, events, locations (with metadata)
- Edges: Relationships and interactions

3. Reminder & Notifications

- Time- or location-based triggers for meds, appointments, visitors

4. Voice & UI
• Wake word or tap to invoke
• Offline ASR + lightweight intent parsing

5. Hybrid Cloud
• On-device lookups and TTS/ASR
• Cloud for heavy jobs (photo reclustering, analytics) with encrypted sync

6. Caregiver Dashboard
• Live task monitoring
• Customizable reminders and emergency contacts

Simplified Medicine Intake Workflow

Wake-up → Geofence triggers morning check-in → 10 AM medication reminder → "Did you hear this?"→ confirmation → follow-up→ "Did you take your medicine?" → confirmation → Caregiver notified or alert escalated → Dashboard updated in real-time

Feasibility & Execution

Memory Jogger uses Android's SpeechRecognizer for on-device ASR, ML Kit and TensorFlow Lite for face detection and intent parsing, and Firebase for optional photo clustering and dashboard sync. Core modules—data ingestion, voice/UI, reminders, confirmation loop, and visitor/location prompts—are built using SDKs and open libraries. Privacy is ensured through on-device processing and end-to-end encryption.

Scalability & Impact

Memory Jogger's hybrid architecture scales effortlessly. On-device modules handle voice, reminders, and recall offline, while cloud features enable photo clustering, analytics, and caregiver dashboards. Its modular design supports multiple languages, adaptable voice tones, and use across homes, clinics, and eldercare centers. By reinforcing memory and routines, it improves user orientation, reduces caregiver strain, and enhances quality of life—making it suitable for broad, cross-cultural adoption.

Conclusion

Memory Jogger is a Gen-AI-powered memory companion that brings clarity to daily life through voice-first reminders, contextual flashcards, and personalized insights. Its **MVP** includes medication alerts, flashcard generation, visitor prompts, and a caregiver dashboard. Designed for empathy, simplicity, and safety, it's more than an app—it's a lifeline for individuals with memory loss. Because every memory deserves a companion.

Minimum Lovable Product

Memory Jogger delivers free core voice recall and reminders, with a simple premium subscription unlocking advanced photo clustering, multilingual soothing voices, location-based prompts, and comprehensive, secure caregiver dashboards. Available direct-to-consumer and via institutional licensing, it can be integrated into hospital and eldercare systems, ensuring scalable memory-care solutions and recurring revenue.

Citations

We leveraged a suite of AI Tools: Consensus to extract key findings from research articles, ChatGPT to draft documentation, Sora for video generation and Eleven Labs for voice-over production.