AI NEWS DIGEST TELEGRAM BOT

Get summarized, AI-analyzed news instantly — personalized, stored, and alert-driven.

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PROBLEM STATEMENT

- Huge amount of news published daily — users can't keep up.
- Reading multiple articles takes time and effort.
- People miss important updates due to overload.
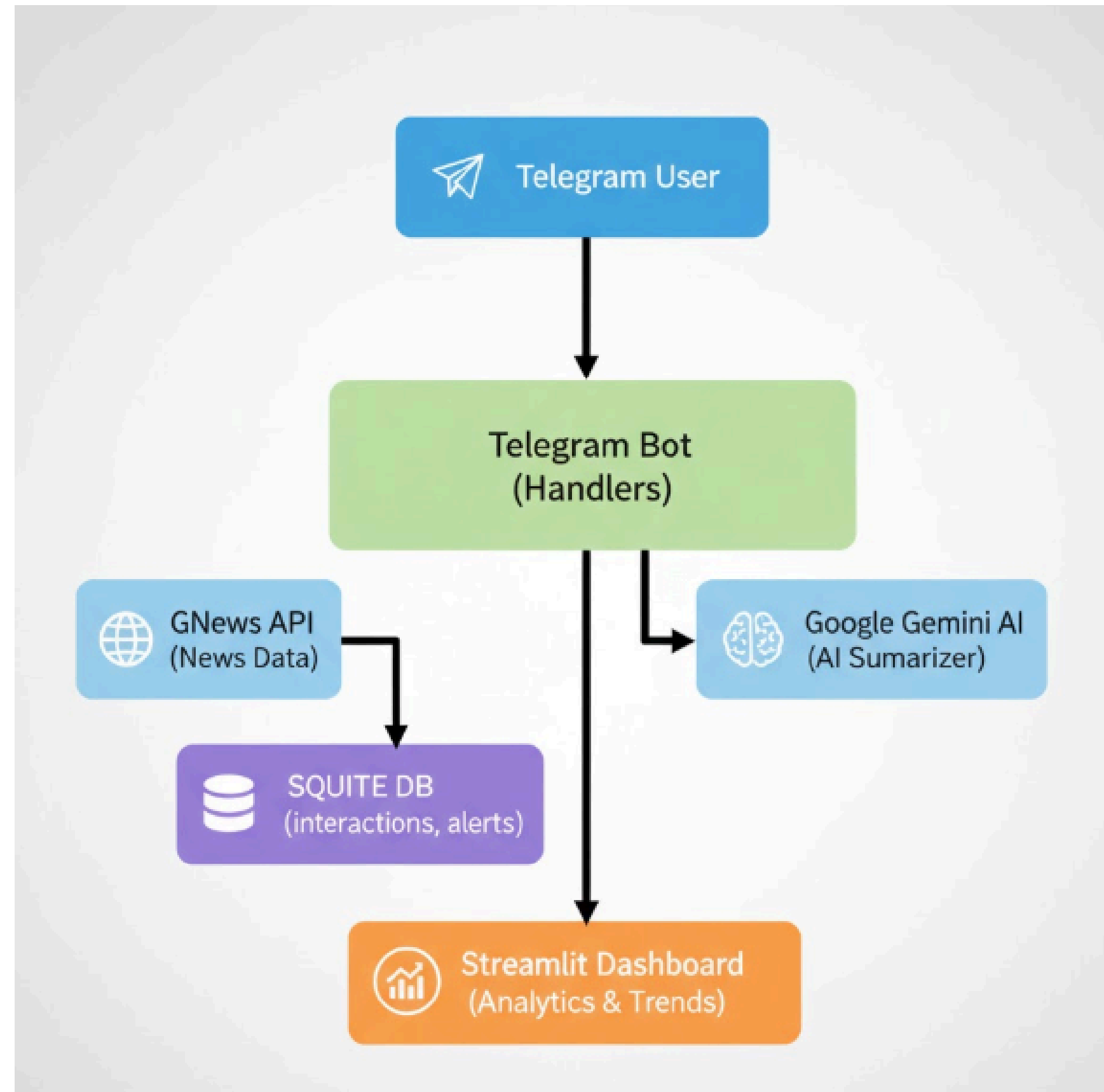- Need for a single platform that delivers concise, topic-based summaries instantly.

Key Idea : Automate news discovery, summarization, and alerting using AI and Telegram.

SYSTEM OVERVIEW

- User interacts via Telegram Bot (commands like /news, /alert).
- Bot fetches articles from GNews and summarizes with Google Gemini.
- Summaries and interactions are stored in SQLite.
- Streamlit Dashboard reads SQLite to show analytics (user activity, top topics, alerts).
- Applies agentic patterns like prompt chaining, routing, and orchestrator–worker to efficiently decompose, route, and coordinate AI tasks.

User → Telegram Bot → GNews → Gemini → SQLite → Telegram + Streamlit

ARCHITECTURE DIAGRAM

KEY FUNCTIONALITIES & COMMANDS

- **/news <topic>** — Fetch & summarize top 5 news (Gemini).
- **/history** — Show recent user summaries (from SQLite).
- **/alert <keyword>** — Subscribe to keyword; alerts delivered when matched.
- **/alerts & /removealert** — Manage subscriptions.
- **/mytopics, /discover, /trending** — Personal and global topic insights.
- **Streamlit tie-in**: Dashboard visualizes how often each command/topic is used and who set alerts.

TECH STACK

- **Language/Frameworks:** Python 3.10+, python-telegram-bot, google-generativeai.
- **APIs:** GNews (news source), Google Gemini (model: gemini-2.0-flash).
- **Storage:** SQLite (interactions, alerts).
- **Dashboard:** Streamlit + Pandas + Matplotlib — reads DB and renders metrics & charts.
- **Env:** .env vars: TELEGRAM_BOT_TOKEN, GNEWS_API_KEY, GOOGLE_API_KEY, TELEGRAM_CHAT_ID

FUTURE SCOPE

- Multi-language summarization
- Voice-based summaries (TTS)
- Automated newsletter digest
- AI-based keyword suggestions
- Cloud-hosted analytics

THANK YOU