Mega Telegram AI Agent with n8n + OpenAI + Gmail + Calendar + Search

Overview

This project showcases a **multi-agent system** built in **n8n**, where a **Telegram-based AI assistant** acts as a centralized command interface. The agent integrates multiple specialized sub-agents — **Mail**, **Calendar**, and **Search** — each powered by **OpenAI** for intelligent reasoning and automation.

Through Telegram, the user can interact with one unified assistant capable of reading, writing, scheduling, searching, and even generating voice replies using AI.

Workflow Architecture

1. Main Telegram Agent

- **Trigger:** Activated by messages received on Telegram.
- **Switch Node:** Detects message type (text or audio).
- **Transcription:** Converts voice messages to text via OpenAI Whisper API.
- **AI Agent Core:** Uses **GPT-4o** to analyze input and decide which sub-agent (Mail, Calendar, or Search) to invoke.
- **Memory Module:** Maintains recent context for natural back-and-forth conversation.
- **Response Output:** Sends text and voice replies directly on Telegram.

Integrated Tools:

- **Gmail_Tool** – Manages sending, replying, and labeling emails.
- **Calendar_Tool** – Creates, deletes, and retrieves calendar events.
- **Search_Agent** – Performs web, HackerNews, and Wikipedia searches.
  (File: `Mega Telegram Agent.json`)

  Mega Telegram Agent

---

2. Sub Mail Agent (Email Management)

- **Trigger:** Executed by the main Telegram Agent when a mail-related task is detected.
- **Capabilities:**
  - Retrieve unread emails from Gmail.

- o   Send, reply, and draft emails.
- o   Mark messages as read/unread.
- o   Label or categorize messages automatically.
- **LLM Role:** OpenAI model ensures professional formatting and proper sign-offs.
  (File: `Sub Workflow Mails.json`)

  Sub Workflow Mails

---

3. Sub Calendar Agent (Google Calendar)

- **Trigger:** Called when a scheduling or event-related query is detected.
- **Capabilities:**
  - o   Create, update, or delete events.
  - o   Retrieve events within time windows.
  - o   Handle solo or attendee-based event creation.
- **LLM Logic:** Uses contextual reasoning to interpret natural language scheduling commands.
  (File: `Sub Calender Agent.json`)

  Sub Calender Agent

---

4. Sub Search Agent (Web & News)

- **Trigger:** Executes when user requests web research or news.
- **Capabilities:**
  - o   Searches across Wikipedia, HackerNews, and Google via SerpAPI.
  - o   Retrieves summarized and relevant results for quick consumption.
- **LLM Role:** Combines multi-source data into clean, contextual summaries.
  (File: `Sub Search Agent.json`)

  Sub Search Agent

Tech Stack

- **n8n** – Core workflow automation and agent orchestration.
- **OpenAI GPT-4o** – Language understanding, reasoning, and response generation.
- **Telegram API** – User interaction interface for text and voice communication.
- **Gmail API** – Email retrieval and automation.
- **Google Calendar API** – Scheduling and event management.

- **SerpAPI & Wikipedia Tools** – External search capabilities.

Key Features

- Multi-agent system with modular sub-workflows.
- Telegram interface supporting both text and voice commands.
- Automated email and calendar management through LLM reasoning.
- Context retention for multi-turn interactions.
- Real-time web search integration.
- Optional humorous commentary module ("Dinesh" LLM chain) for personality-driven responses.

Use Cases

- Personal digital assistant for task management and communication.
- Unified productivity automation across mail, calendar, and search.
- Voice-to-text conversational control for business workflows.
- Scalable framework for enterprise multi-tool LLM orchestration.

Outcome

The result is an intelligent **Telegram AI assistant** capable of handling everyday digital operations — from sending an email to checking your calendar or searching the web — using natural language or voice.
This system highlights how **modular AI orchestration with n8n** can replicate an **agentic architecture** without custom coding.