



# AI-Powered Multi-Tool Agent

In this project, let's build a **AI-Powered Multi-Tool Agent** for Telegram using n8n. This workflow creates an intelligent AI assistant that can handle various tasks by choosing the correct tool for the job, such as answering questions, performing calculations, searching the web, and managing calendar events.

## Set Up Instructions

- Have API keys and credentials ready for:
  - Telegram (Bot Token)
  - Google Gemini (API Key)
  - **MCP Client Tool**(for SerpAPI and Google Calendar)

## Completion Instructions

Functionality to be implemented

Your workflow should implement the following functionality:

- The workflow must be triggered by an incoming message on Telegram.
- The AI Agent should understand the user's intent and select the appropriate tool.
- The assistant should be able to:
  - Engage in natural conversation (using Google Gemini).
  - Fetch real-time information from the web (using SerpAPI via MCP).
  - Perform arithmetic calculations (using the Calculator tool).
  - Look up information on Wikipedia.
  - Create, delete, or modify calendar events (using Google Calendar via MCP).
- The final response should be sent back to the user on Telegram.

Workflow Structure

Your workflow should consist of these core node groups:

### 1. Trigger & Input Nodes

- **Telegram Trigger:** To start the workflow on a new message.

### 2. AI Core Nodes

- **AI Agent:** To process the user's request and decide which tool to use.
- **Google Gemini Chat Model:** The language model powering the agent.
- **Simple Memory:** To retain conversation history.

### 3. Tool Nodes

- **MCP Client Tool (SerpAPI):** To search for real-time web data.
- **Calculator:** To perform mathematical calculations.
- **Wikipedia:** To search for information about people or companies.
- **MCP Client Tool (Google Calendar):** To manage calendar events.

### 4. Output Node

- **Telegram (Send a text message):** To send the final response to the user.

## Important Note:

The following instructions are required for the workflow to function correctly:

- The workflow must be triggered by a Telegram node when a new message is received.
- It must use the AI Agent to analyze user messages and select the appropriate tool.
- The workflow must integrate SerpAPI, Calculator, Wikipedia, and Google Calendar (via MCP Client Tool) for handling specific requests.
- The AI Agent should retain conversation context using Simple Memory to provide coherent responses.

- The final response must be sent back to the user through the Telegram node.
- The workflow should be exportable as a valid n8n workflow JSON file.

**Resources:**

Documentation

- [n8n Telegram Node](#)
- [n8n AI Agent](#)
- [n8n MCP Client Tool](#)
- [n8n Calculator Tool](#)
- [n8n Wikipedia Tool](#)

**Prompts To be used:**

Here is the core prompt used for the AI Agent in this workflow.

**AI Agent System Message:**

```
# Role

You are an intelligent AI assistant that helps users via Telegram.
You are talking to {{ $json.message.from.first_name }}
{{ $json.message.from.last_name }}

# Behavior
You should:
- Understand the user's intent clearly.
- Choose the correct tool from the available ones ONLY when needed.
- Otherwise, answer directly.

# Available Tools & When to Use Them:

## 1. Google Gemini Chat Model
Use for:
- Natural conversations
- Creative writing
- Open-ended questions
- Explaining concepts
- General text generation

## 2. SerpAPI
Use for:
- Real-time or factual information from the web
- News, current events, live sports, current prices
- Anything requiring recent or external data

When using the SerpAPI tool, always structure the call like:
Use tool SerpAPI with input:
{
  "q": "search your query here"
}

## 3. Calculator
Use for:
- Arithmetic
- Percentages
- Unit conversions
- Date or time differences

Only use if the question involves numbers or calculations. Examples:
- "What is 40% of 500?"
- "Convert 20 km to miles"
```

*# 4. Wikipedia*

*Use for:*

- When searching for a person or company*

*# 5. Google Calender*

*Use for:*

- When creating a calender event*
- Deleting or modifying calender events*

# AI-Powered Multi-Tool Agent Workflow

