Telegram Research Bot

Overview:

This proposal outlines the design and functionality of a Telegram bot that uses LLAMA3 for various tasks such as summarizing scientific papers, brainstorming topics, and answering general queries. The bot will maintain conversational states and offer users the option to receive results via email or directly in the chat. Users will interact with the bot using a simple command structure to execute different functionalities.

Telegram Bot Commands:

1. **/start**
    - **Description:** Initializes the bot and welcomes the user.
    - **Action:** Sends a welcome message explaining the bot's purpose and listing the available commands. This command serves as the entry point to activate the bot and interact with its features.
2. **/help**
    - **Description:** Provides guidance on how to use the bot.
    - **Action:** Displays instructions for each available command, explaining how to submit tasks such as summarization, brainstorming, and more. It also informs users how to receive results via email or directly within the chat.
3. **end**
    - **Description:** Resets the conversation and returns to the main menu.
    - **Action:** Ends the current session and clears the conversational context, allowing the user to start a new interaction from the main menu.
4. **summarize:**
    - **Description:** Allows users to submit scientific papers for summarization and receive an audio summary.
    - **Action:** Prompts the user to upload a scientific paper or other lengthy document. After submission, the bot will summarize the document and provide the summary in text format. Additionally, an audio version of the summary will be generated and sent to the user.
    - **Backend Process:** The bot uses LLAMA3 to analyze and summarize the document. Once the text summary is generated, the bot converts it into audio format for the user's convenience.
5. **brainstorm:**
    - **Description:** Helps users find relevant scientific papers or brainstorm ideas on a chosen topic.
    - **Action:** The user provides a topic of interest in the format `brainstorm: topic`. If the user wishes to receive the result via email, they will need to include their email in the format `email:user@example.com`. Users can

submit a request with the format `mail:query` to receive the output by email, or `nml:query` to receive the result directly in the chat.
    - **Backend Process:** The bot searches for relevant scientific papers or content based on the user's input. LLAMA3 will assist in filtering and generating useful ideas or sources on the given topic.
6. **assistant:**
    - **Description:** Provides an interactive question-and-answer assistant for general queries.
    - **Action:** Users can type `assistant:` followed by any question, and the bot will respond using its general knowledge base powered by LLAMA3. The bot can handle questions on a wide range of topics.
    - **Backend Process:** The bot accesses LLAMA3 to generate responses based on the user's queries, providing accurate and contextually relevant information.
7. **end**
    - **Description:** Resets the state of the conversation and starts a new mode.
    - **Action:** The user can enter `end` at any time to conclude the current interaction and reset the bot's state. This prepares the bot to start a new task without carrying over context from previous conversations.

Bot Workflow:

1. **Conversation Initialization:**
    - Users start interacting with the bot by pressing `/start` or `/help` to understand the commands.
2. **Task Execution:**
    - Users can perform specific tasks like summarizing scientific papers (`summarize:`), brainstorming on a topic (`brainstorm:`), or asking general questions (`assistant:`).
3. **Result Delivery:**
    - Depending on the command, results are either delivered within the chat or via email based on the user's request. Summaries will also be available in audio format.

Use of LLAMA3:

- **Summarization:** LLAMA3 is used to analyze long scientific papers and extract concise summaries.
- **Brainstorming:** LLAMA3 generates ideas or retrieves scientific papers relevant to the user's query.
- **General Assistance:** LLAMA3 provides responses to a wide range of questions, leveraging its vast knowledge base.