**Narrating over a Video using Multimodal AI.txt**

**Workflow: Make OpenAI Citation for File Retrieval RAG**

**Purpose:**  
This workflow is designed to facilitate the retrieval and citation of relevant files (e.g., PDFs) using a vector store and OpenAI’s language model. It performs the following functions:

* Retrieves file data from a vector store.
* Uses an OpenAI assistant to search for citations and generate a final output that includes dynamic references to the files.
* Formats the output in Markdown (or optionally HTML) with citations, ensuring the assistant's output is clear and referenceable.

**Key Components**

1. Trigger and Chat Button

* **Node:** *Create a simple Trigger to have the Chat button within N8N*
  + **Type:** Chat Trigger
  + **Description:**  
    This node creates a web chat interface in n8n, allowing users to interact with the workflow. Users can input queries, and the system will retrieve and format citations from a vector store.

2. OpenAI Assistant with Vector Store

* **Node:** *OpenAI Assistant with Vector Store*
  + **Type:** OpenAI Assistant
  + **Description:**  
    This node uses an OpenAI assistant that is configured with access to a vector store. It performs file retrieval by querying the vector store for relevant file data and then generates a text output with citations.
  + **Configuration:**
    - **Assistant ID:** Configured to point to a pre-created assistant instance with a vector store.
    - **Resource:** The node is set to work as an assistant for file retrieval tasks.
    - **Options:** The configuration includes the option to not preserve original tools, ensuring that only the relevant citation formatting is applied.

3. Memory Management

* **Node:** *Window Buffer Memory*
  + **Type:** Memory Buffer
  + **Description:**  
    This node is responsible for retaining the context of the chat session by storing recent interactions. This memory can be referenced by the assistant to provide consistent and contextually aware responses.

4. File Retrieval and Citation Formatting

* **File Retrieval:**
  + The workflow uses an HTTP Request node (not explicitly shown in the snippet) to fetch file data (such as PDFs) from a vector store.
  + The file data is then processed, and key details (such as file name and content excerpts) are extracted.
* **Citation Formatting:**
  + The assistant uses the extracted file data to generate citations.
  + **Dynamic Citations:**  
    The workflow incorporates dynamic references into the final output (e.g., citation [1], [2], etc.), which link back to the original files.
  + **Markdown Formatting:**  
    A code block at the end of the workflow formats the citations into Markdown. Optionally, the output can be transformed into HTML if needed.

5. Output Processing

* **Output Aggregation:**
  + **Node:** *Aggregate*
    - **Type:** Aggregate
    - **Description:**  
      This node aggregates the outputs from previous steps into a single unified output. It collects all file citation information to produce a cohesive text response.
  + **Code Node for Final Formatting:**
    - A custom code node (using JavaScript) processes the aggregated data to substitute citation placeholders with file names, ensuring that the final output is clear and well-formatted.
  + **Optional Markdown to HTML Conversion:**
    - An optional node allows conversion from Markdown to HTML if the final output should be in HTML format.

6. External Storage

* **Node:** *Upload to GDrive*
  + **Type:** Google Drive Upload
  + **Description:**  
    Once the final voiceover clip (or final formatted text) is generated, it is uploaded to Google Drive for easy sharing and later use. This node uses the Google Drive credentials and uploads the result as an MP3 file (or another desired format).

**Data Flow Overview**

1. **User Interaction:**
   * The chat trigger node creates a web chat interface for the user. The user submits a query requesting file citations.
2. **Context Memory:**
   * The Window Buffer Memory node retains recent interactions to provide context for the assistant.
3. **File Retrieval:**
   * An HTTP Request node fetches file data from the vector store based on the user’s query.
4. **OpenAI Assistant:**
   * The OpenAI Assistant with Vector Store node processes the file data and generates a text output that includes citations.
   * The output includes dynamic references (citations) corresponding to the retrieved files.
5. **Output Aggregation and Formatting:**
   * The Aggregate node combines all the individual file citation outputs.
   * A code node further refines the output by replacing placeholders with actual file names.
   * Optionally, the output can be converted from Markdown to HTML.
6. **Result Delivery:**
   * The final output is presented to the user, and the voiceover clip (if generated) is uploaded to Google Drive.