**lemlist \_\_ GPT-3\_ Supercharge your sales workflows**

**Workflow Components**

1. API Key Setup and Webhook Integration

* **Sticky Note4 – API Key Setup Guidance:**
  + **Function:** Provides instructions for obtaining and configuring a free Brave Web Search API key.
  + **Content:** Steps to sign up for a free plan at Brave's API site and configure the API key in the workflow nodes.
* **Sticky Note – Webhook/Trigger Input Adjustment:**
  + **Function:** Offers guidance on changing the input type (e.g., from a Webhook to another item) by updating Query 1 and Query 1 Ranker nodes.

2. Query Preparation and Aggregation

* **Date & Time Node:**
  + **Function:** Provides current date and time to be used in the query generation process, ensuring time-sensitive results.
* **Webhook Node:**
  + **Function:** Receives the initial query input from an external trigger, such as a Webhook call.
  + **Usage:** Ensures that the input query is passed into the workflow for further processing.
* **Auto-fixing Output Parser Nodes (Auto-fixing Output Parser & Structured Output Parser1):**
  + **Function:** Processes and corrects the AI’s raw output for query generation.
  + **Details:** Ensures that the output adheres to the expected JSON structure, providing a clear summary and a refined search query.
* **Query-1 Combined (Code Node):**
  + **Function:** Aggregates search results (titles, URLs, descriptions) into a single string.
  + **Operation:** Iterates over search result items and concatenates the data into an aggregated text.

3. AI Query Generation and Ranking

* **Semantic Search -Query Maker (Chain LLM Node):**
  + **Function:** Utilizes multi-step chain-of-thought reasoning to transform the user's original query into a refined search query.
  + **Process:**
    - **Chain 1:** Breaks down the query into key terms.
    - **Chain 2:** Explores context and identifies relevant sources.
    - **Chain 3:** Refines the query for specificity.
  + **Output:** Returns a JSON object with a reasoning summary and a final search query.
* **Semantic Search - Result Re-Ranker (Chain LLM Node):**
  + **Function:** Evaluates search results by ranking and extracting key details from each result.
  + **Operation:** Uses the aggregated text from earlier nodes to rank the top URLs and provide an organized JSON output containing titles, links, and descriptions.

4. Final Response Construction

* **Respond to Webhook (Response Node):**
  + **Function:** Returns the final structured JSON output containing the highest ranked search result details to the parent workflow.
  + **Output Format:**
    - Contains fields such as Highest\_RANKEDURL\_1, Highest\_RANKEDURL\_2, etc., with each entry containing a title, link, and description.
    - Additionally, an “Information\_extracted” field contains any relevant extracted information.

**Data Flow Overview**

1. **Initial Query Reception:**
   * The Webhook node captures the initial query input, which is then enriched with the current date via the Date & Time node.
2. **Query Refinement:**
   * The Auto-fixing Output Parser nodes process the raw AI output, ensuring the query is structured correctly.
   * The Query-1 Combined node aggregates search result data.
3. **Semantic Processing:**
   * The Semantic Search -Query Maker node analyzes the input query and generates a refined search query using a multi-chain reasoning process.
   * The Semantic Search - Result Re-Ranker node then uses the refined query and aggregated search results to rank and extract key information.
4. **Response Delivery:**
   * The Respond to Webhook node formats the final output into a JSON structure, which is sent back to the parent workflow or client.

**Configuration & Customization**

* **API Keys and Credentials:**  
  Ensure that your Brave Web Search API key and any other required API keys (e.g., OpenAI, Google Gemini, etc.) are correctly set up in their respective credential nodes.
* **Prompt Adjustments:**  
  Modify prompts in the Semantic Search nodes to suit your specific search requirements or to align with your organization's search strategies.
* **Data Formatting:**  
  The Auto-fixing and Structured Output Parser nodes are essential for ensuring that the data is correctly formatted for downstream processing. Adjust the JSON schema as needed.
* **Scalability:**  
  You can extend the number of search results processed or refine the ranking logic by adjusting the parameters in the chain-of-thought nodes.

**Troubleshooting Tips**

* **API Response Errors:**  
  If API nodes (e.g., for Brave Web Search or Confluence) return errors, verify your API keys, endpoint URLs, and rate limits.
* **Data Aggregation Issues:**  
  Ensure that the Code node aggregating the search results is correctly iterating over the results and that the expected fields (title, URL, description) exist.
* **Output Parsing:**  
  If the final output JSON does not match the expected schema, check the output parser nodes to ensure they are configured correctly to transform the AI output.
* **Testing and Validation:**  
  Use the “Test Workflow” feature in n8n to simulate incoming queries and verify that the complete data flow (from query input to final response) operates as expected.