Multimodal RAG Agents in n8n (Images, Tables & Text)

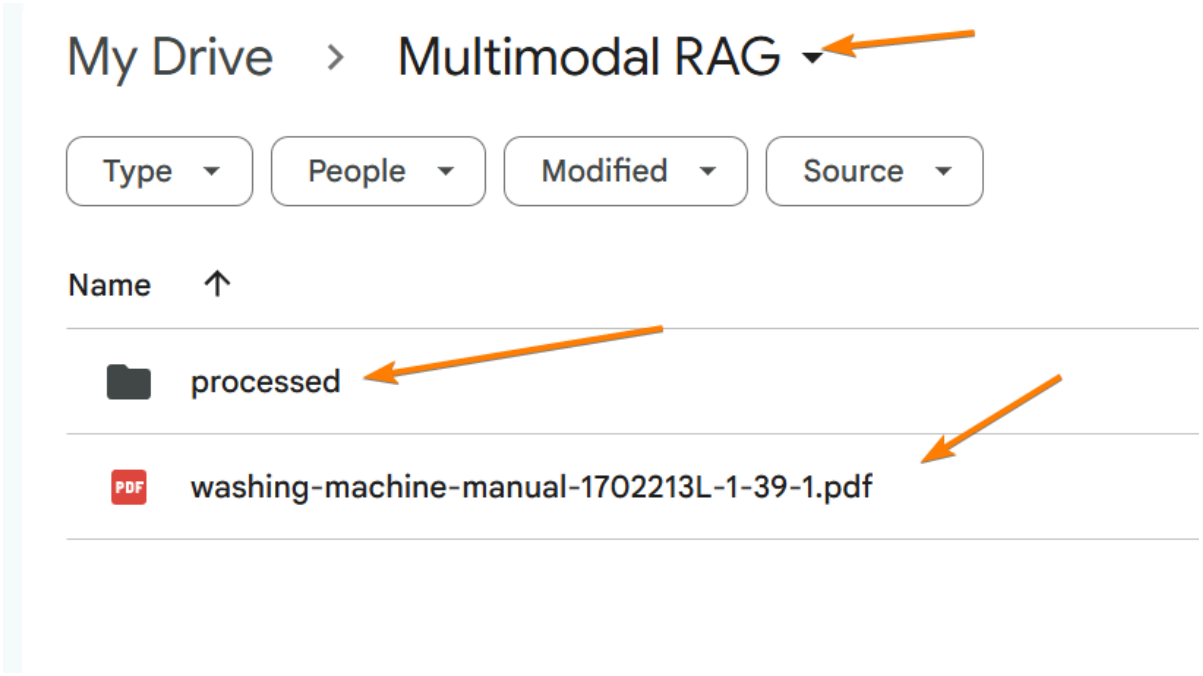
This is a multimodal RAG workflow capable of reading, analyzing, and querying complex PDF documents, including text, images, and tables, at scale. Images extracted from the PDFs are displayed directly within the chat window whenever relevant to the user.

https://www.youtube.com/watch?v=5aCi42dVOTA

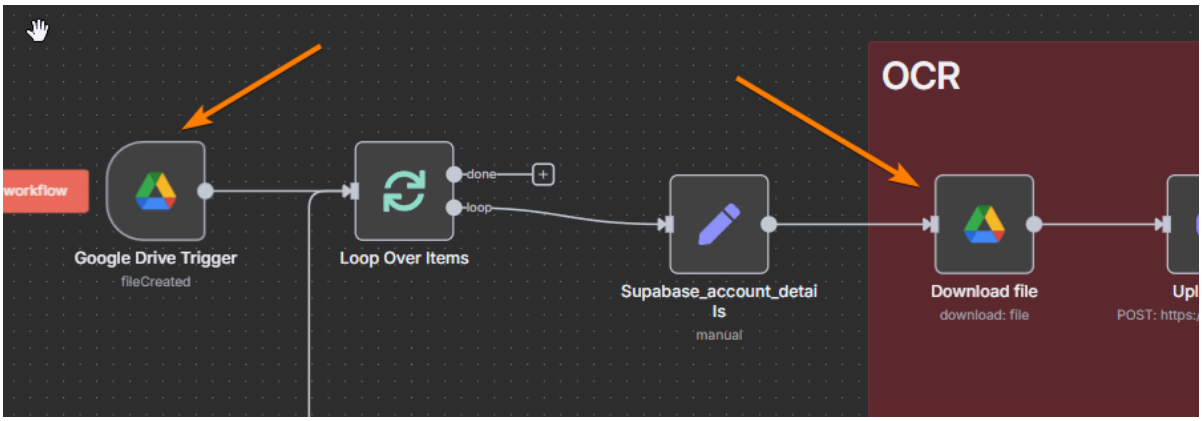
n8n blueprint:
<n8n Template link>

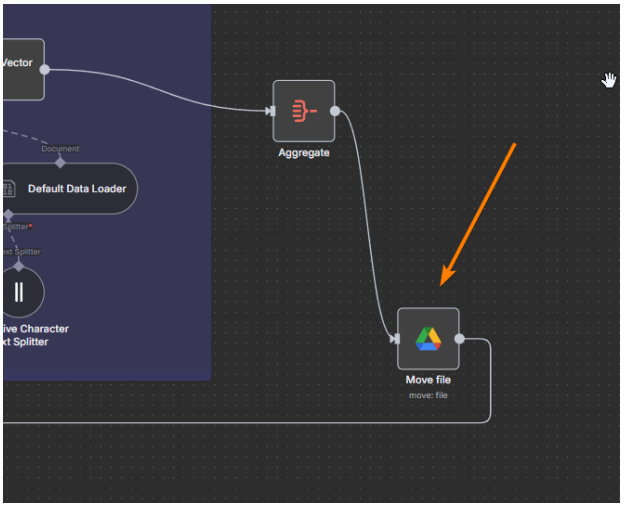
Instructions

Create a **new folder on Google Drive** (e.g. called “**Multimodal RAG**”), then create another folder called “**processed**” inside that folder. PDFs that are uploaded to the Multimodal RAG folder will be picked up by this workflow. Alternatively, you can adjust this workflow to retrieve the documents from another source.

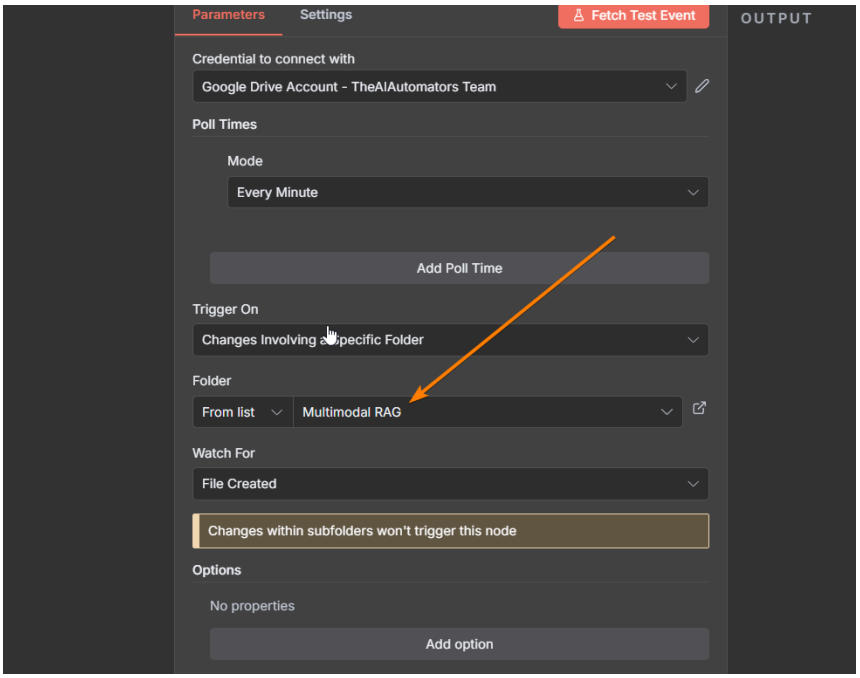


Select your **Google Drive credentials** for each of the Google Drive nodes

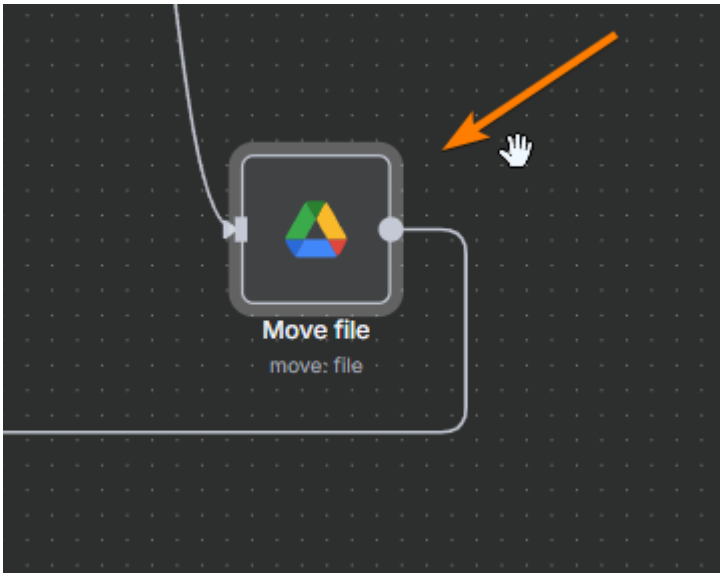


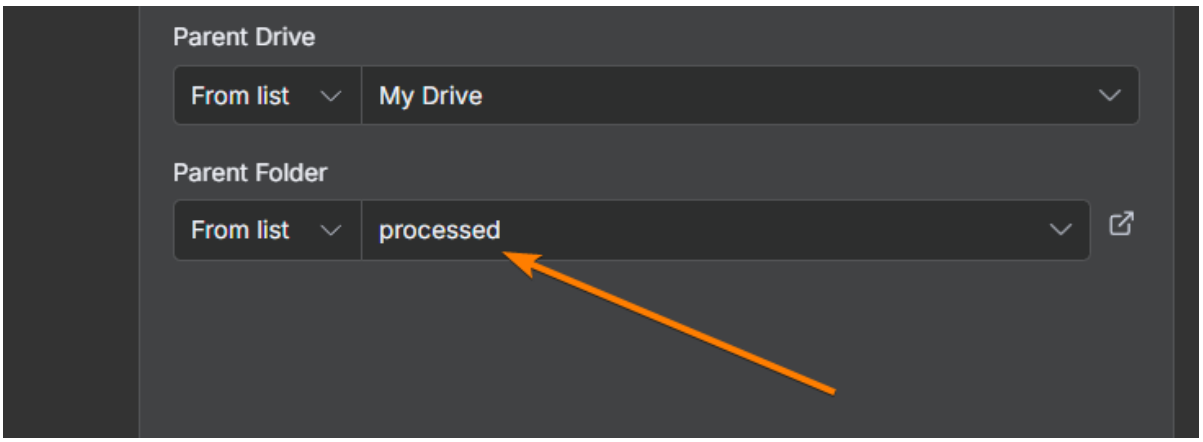


In the starting Google Drive Trigger, choose your **Multimodal RAG** Google Drive folder to listen out for new files:



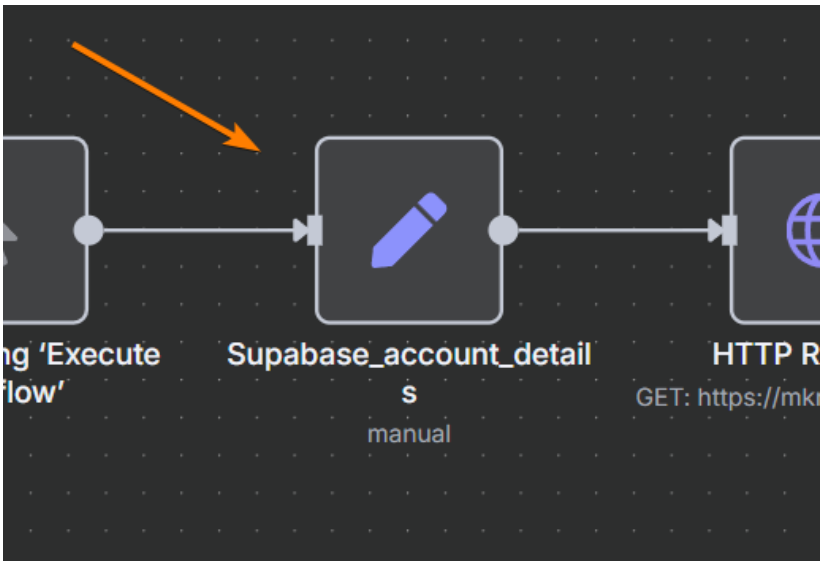
In the final Google Drive node, choose your **Processed folder** to move files to when they are finished processing:



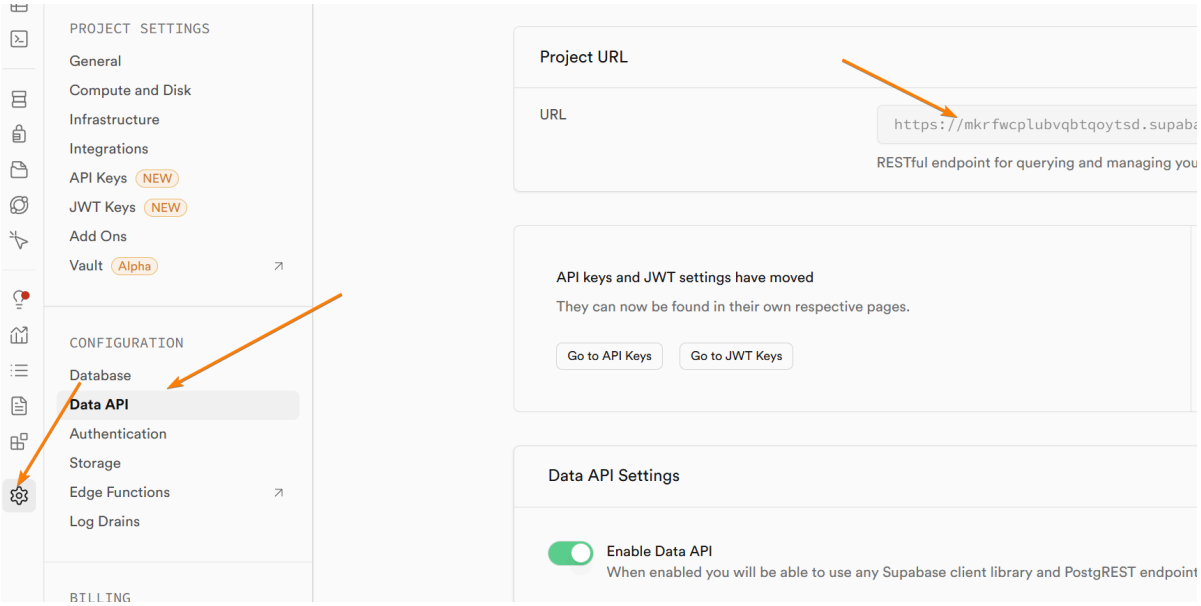


Set your **Supabase base URL** and **Supabase storage bucket name** here

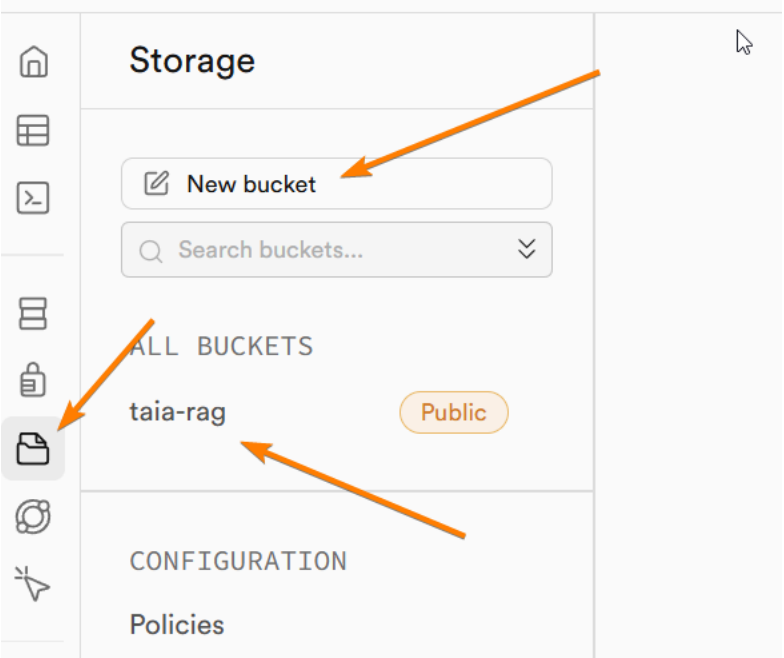
If you don't have an account, go to https://supabase.com/ and set up a free account.



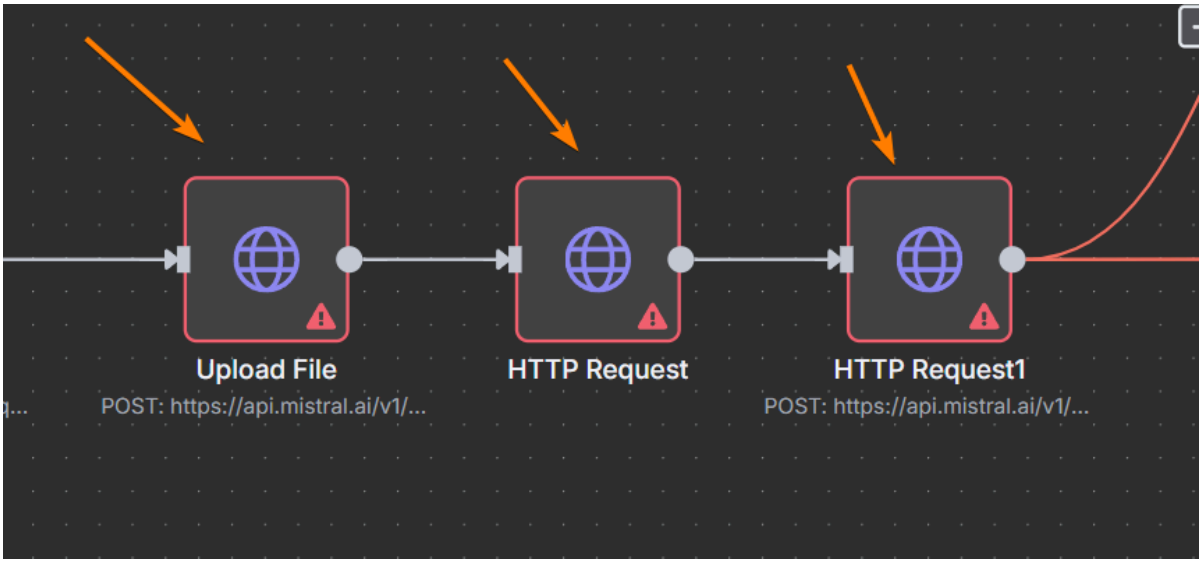
To get your Supabase base url:



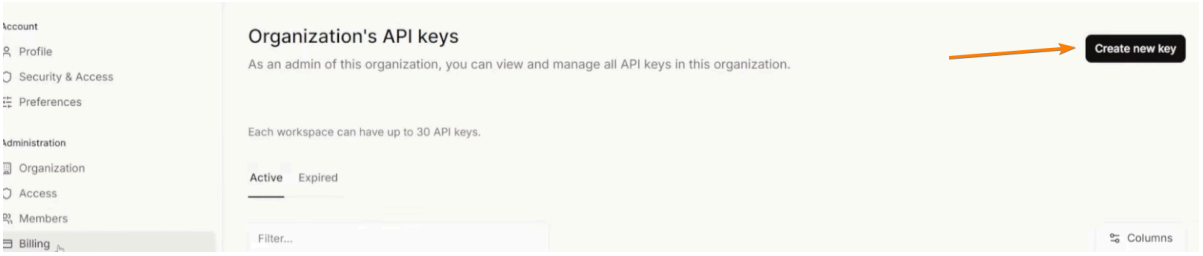
For the storage bucket name. Create a new bucket, make it public, and copy out the name (e.g. taia-rag is the name of the one below)

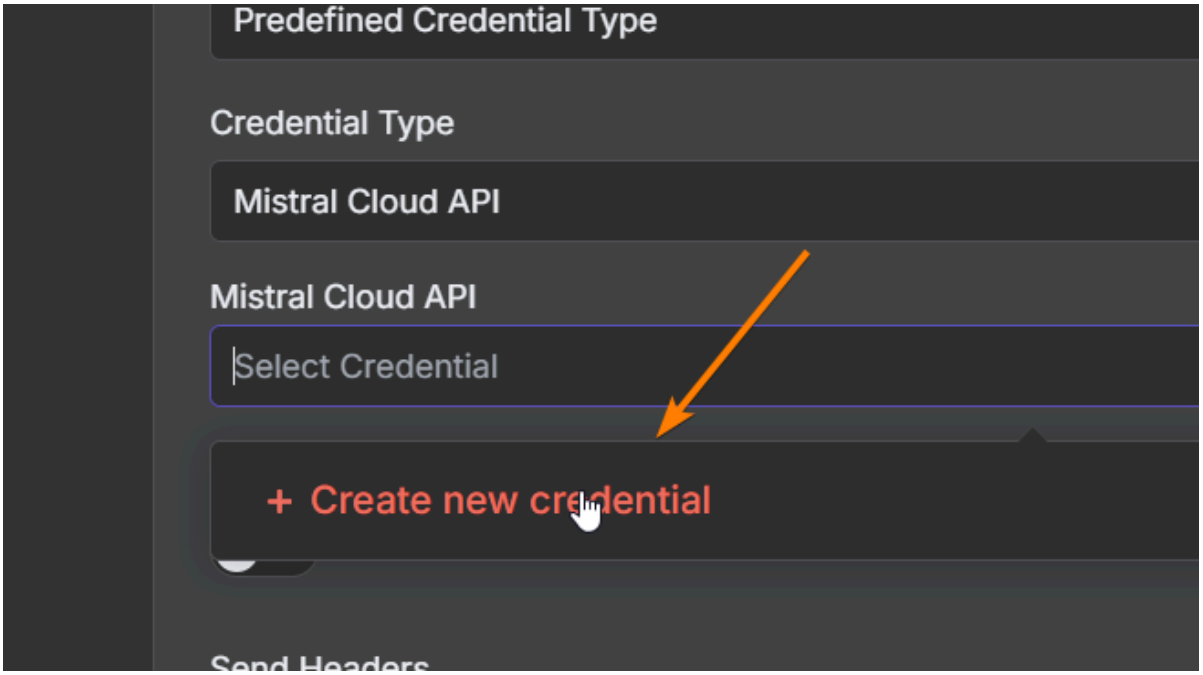


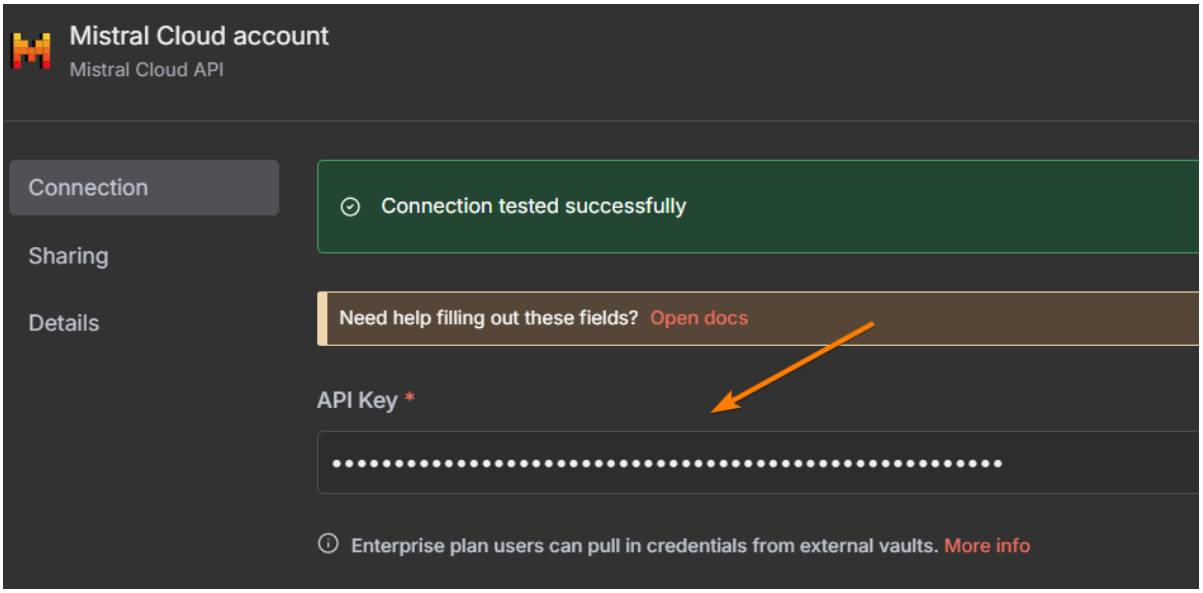
Set up a Mistral account and go to https://console.mistral.ai/api-keys



Then create an API key on your mistral account and add it here (**don't** add Bearer at the start of the Key)

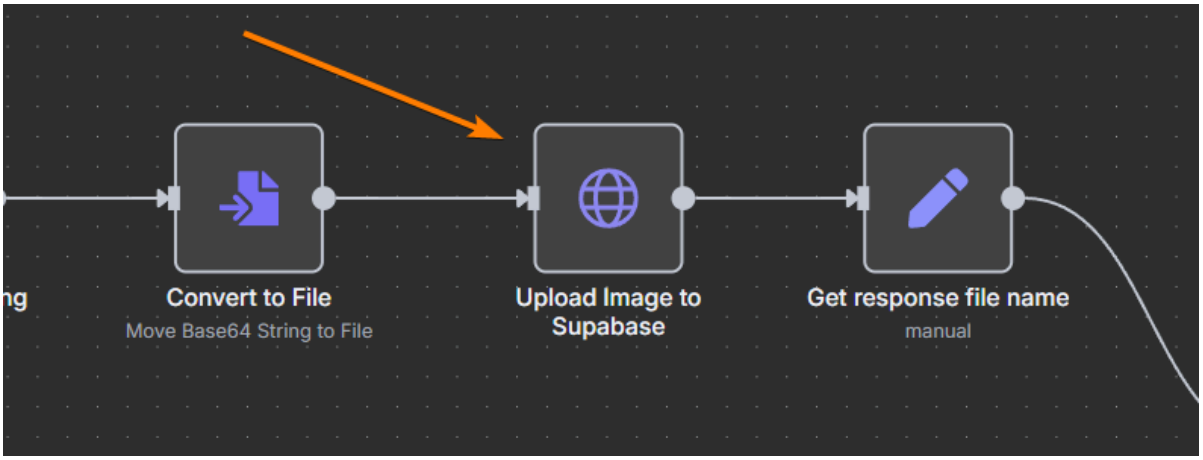


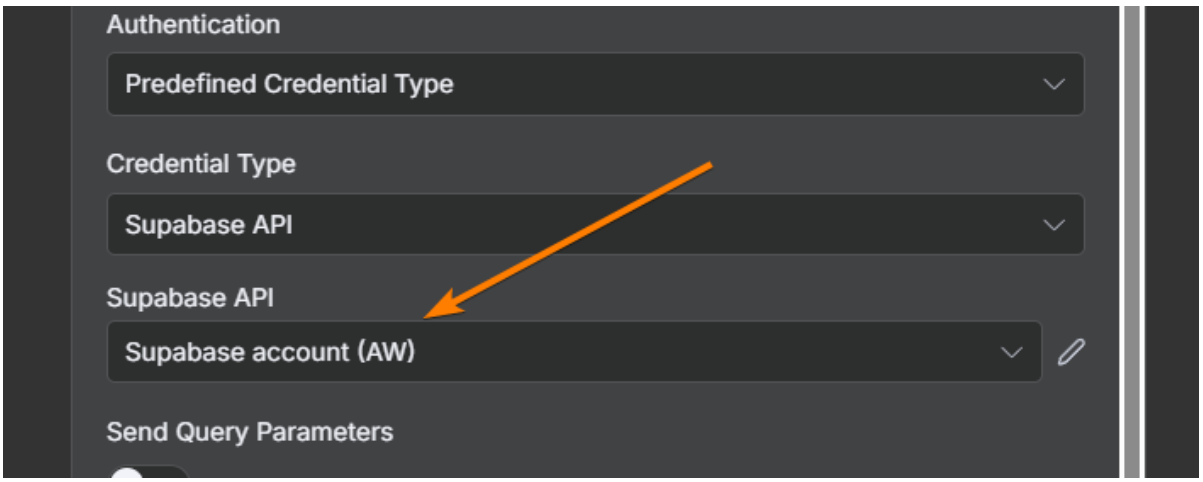




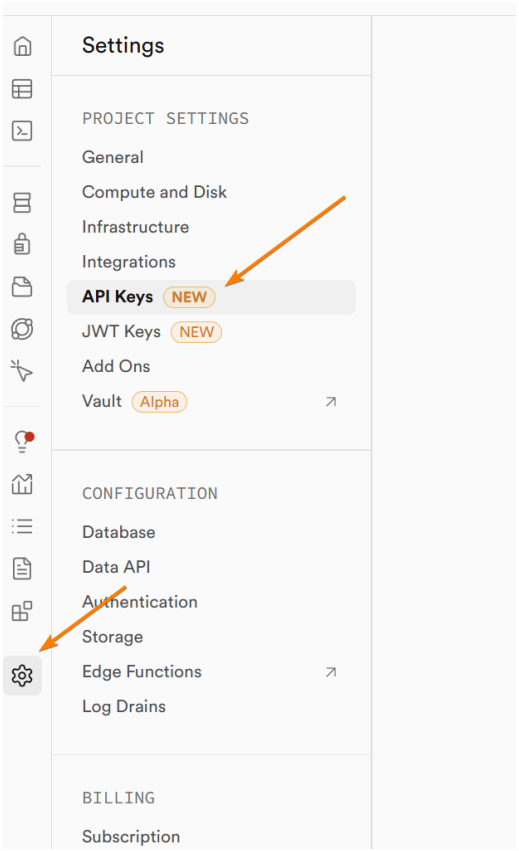
Select the same credential for the other requests to Mistral.

Then select your Supabase credential in this node (or create a new one with the instructions below)

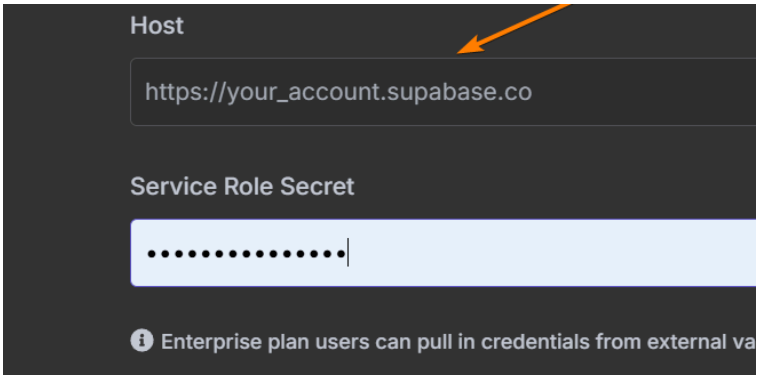




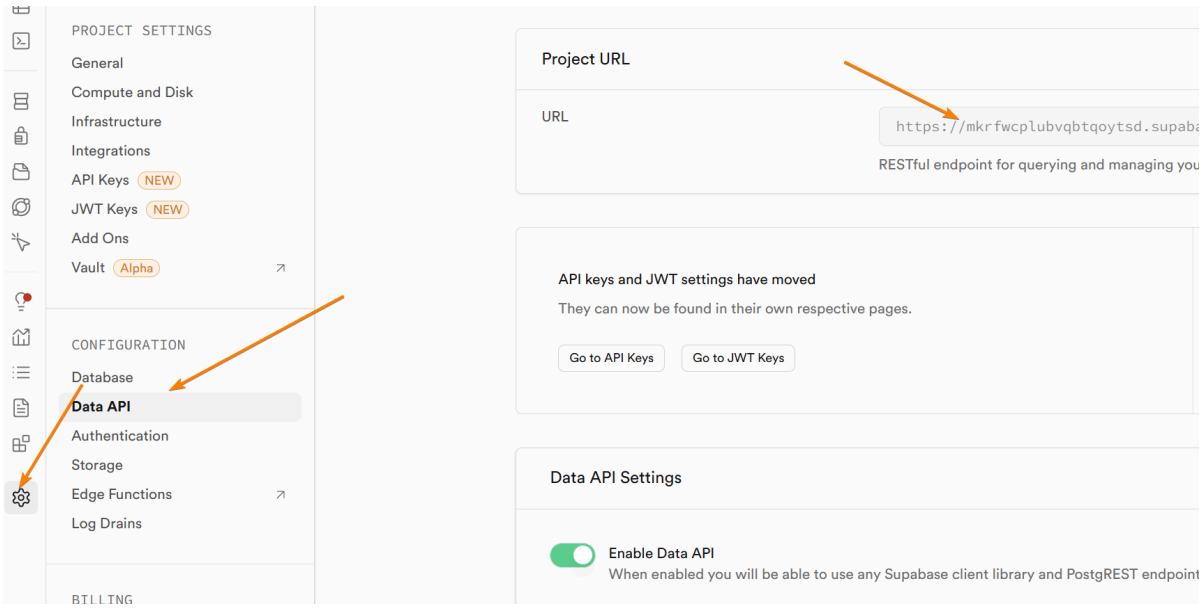
To create a new Supabase credential, go to your supabase account and copy out your API key:



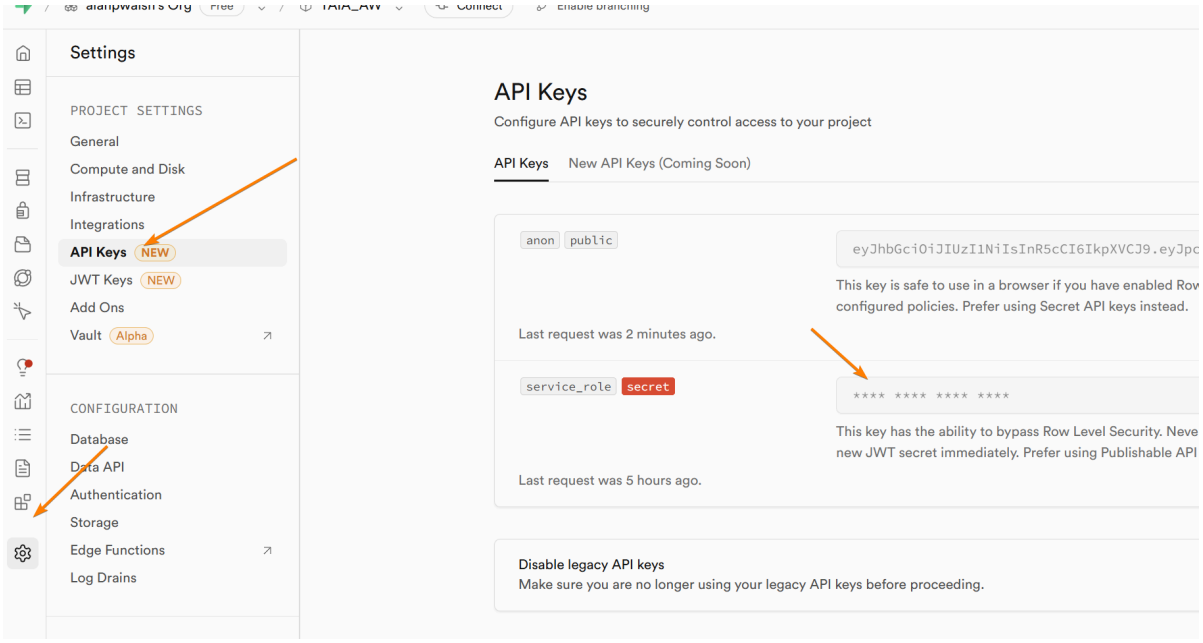
Within the credentials, you need a base URL and your service role secret:



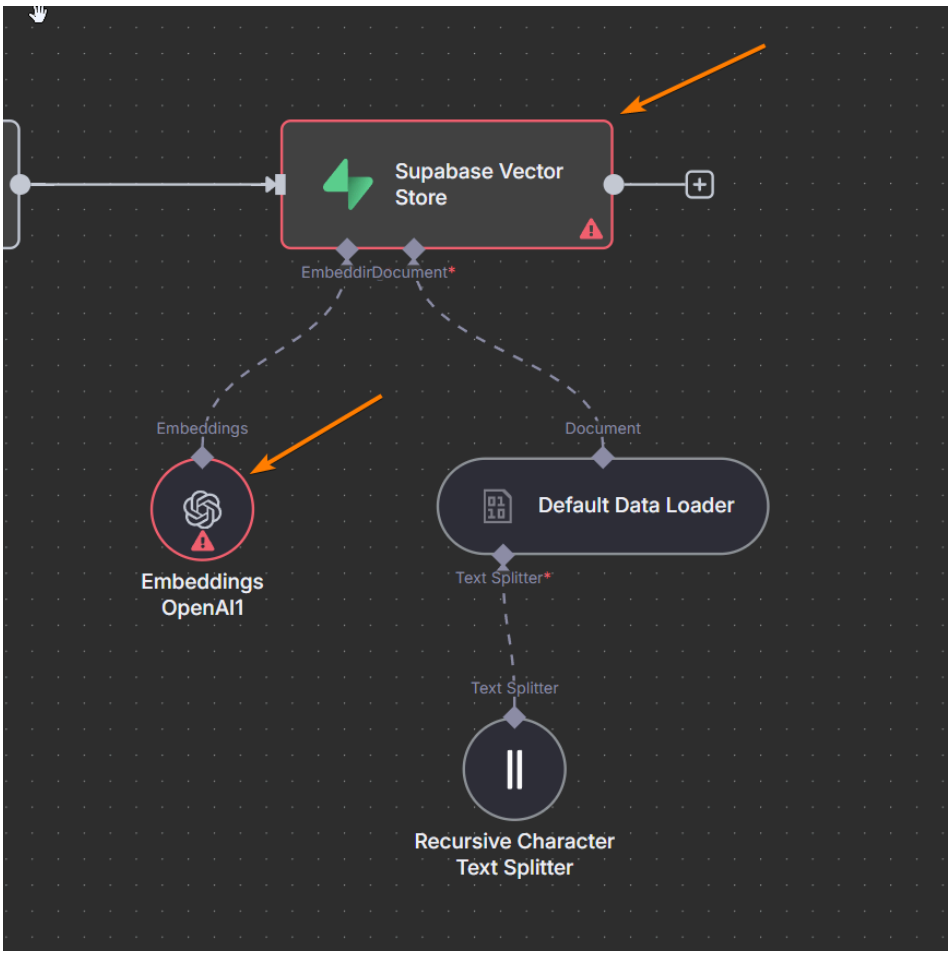
For base URL:

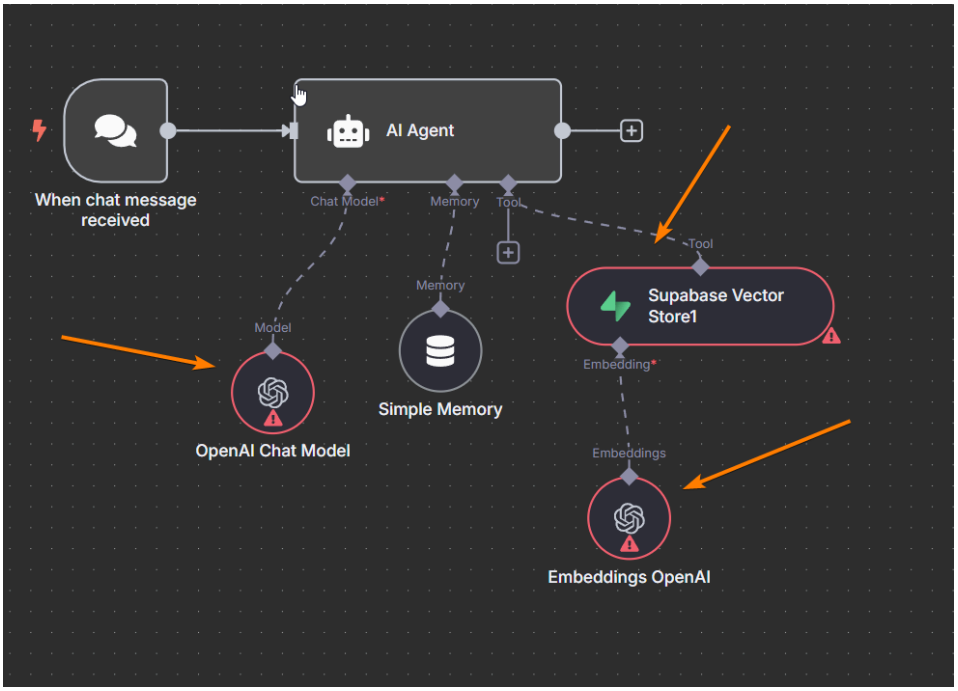


For service role secret:



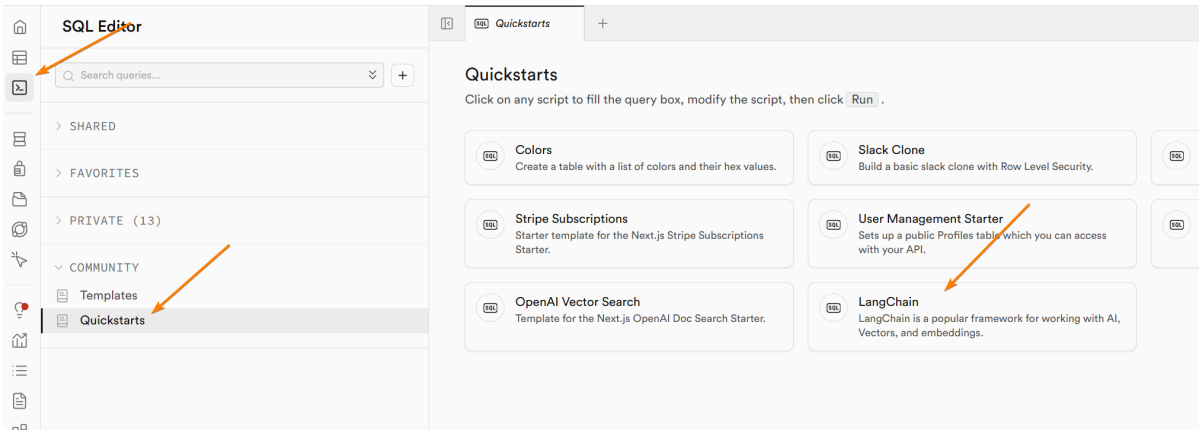
Select your Supabase credential and OpenAI credentials (https://openai.com/api/) for the Supabase vector store and within the **agent**.



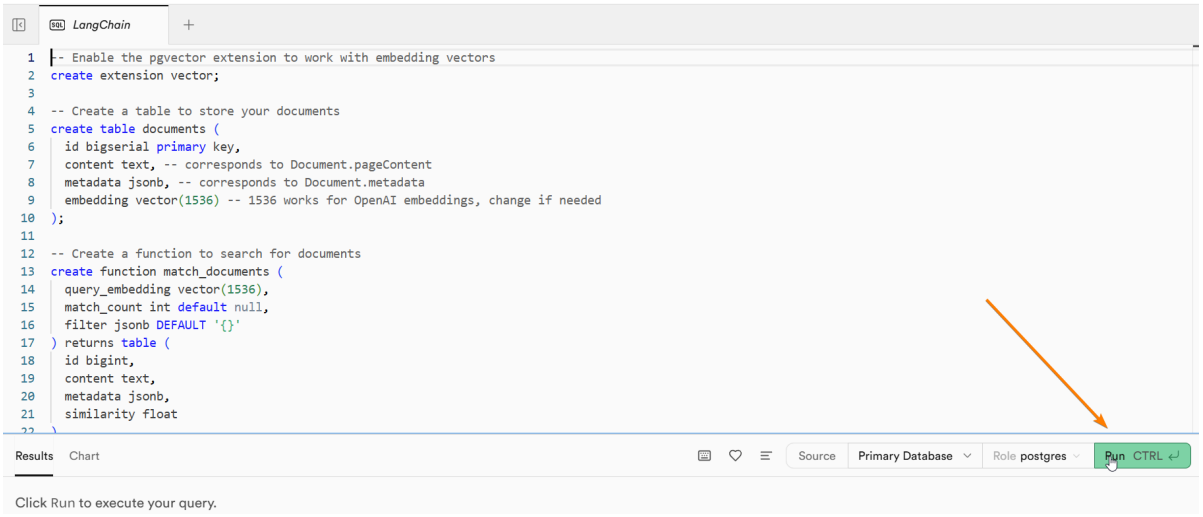


Setting up your Supabase documents table.

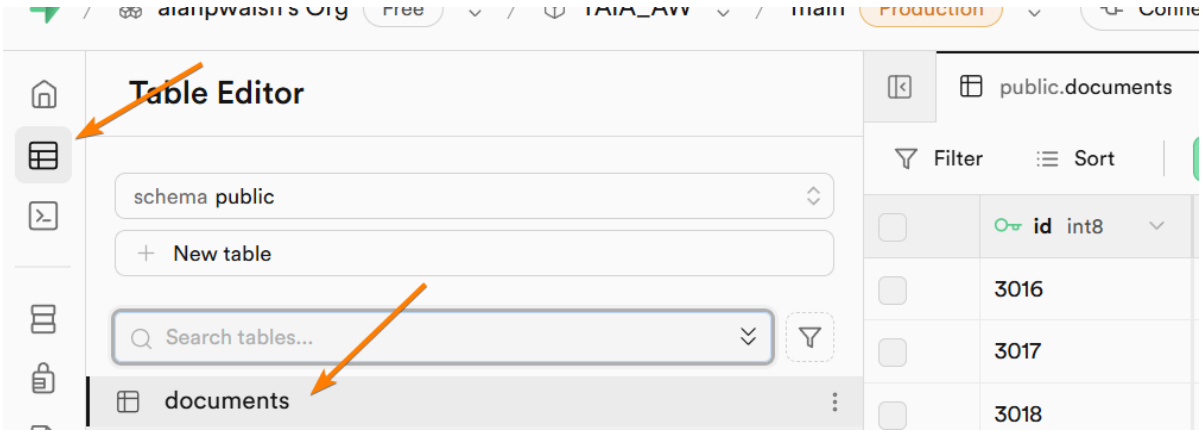
If you haven't set up your Supabase documents table, go to the LangChain option in the Quickstarts section in Supabase:



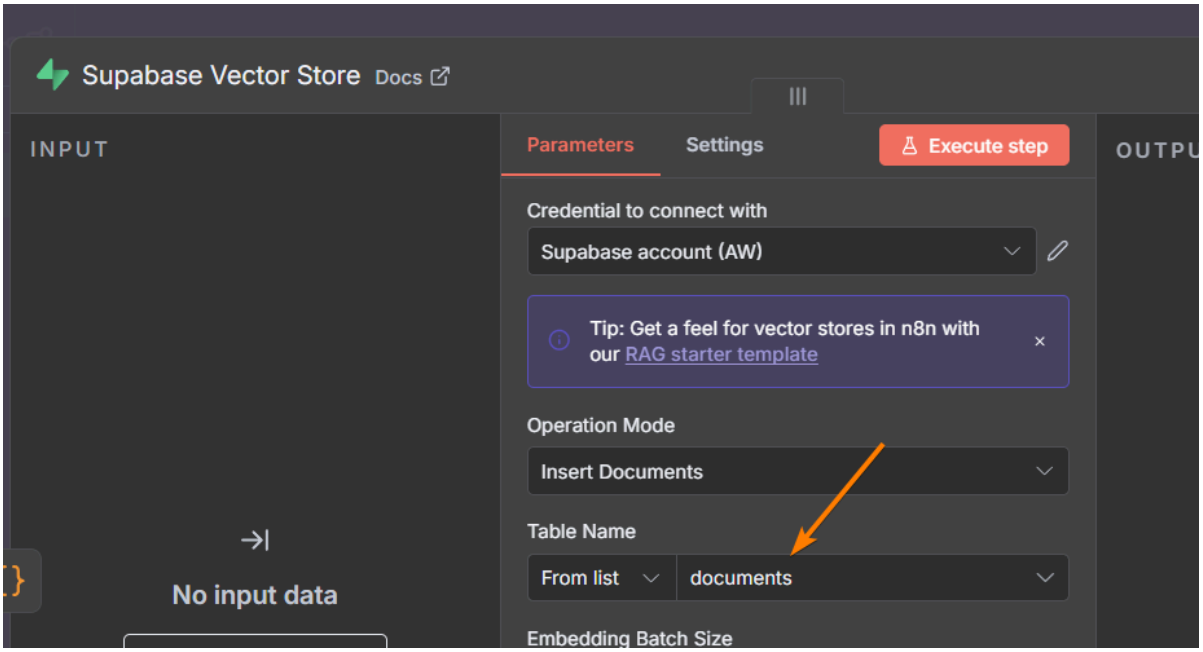
Then press "Run" to execute the query:



You should then see your documents table in Supabase:



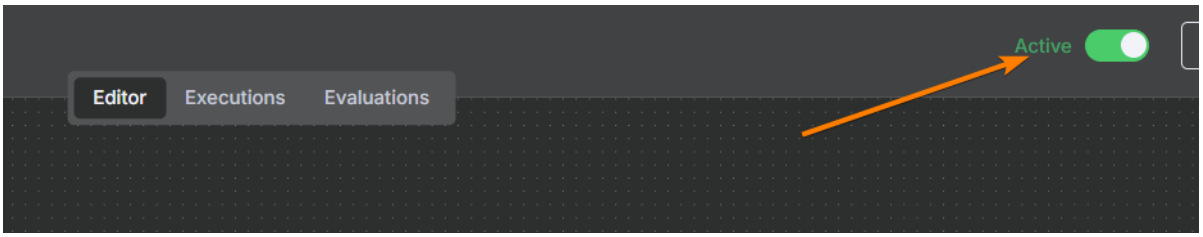
Select this table within your Supabase vector store node:



Test out the workflow!

Ingest some documents

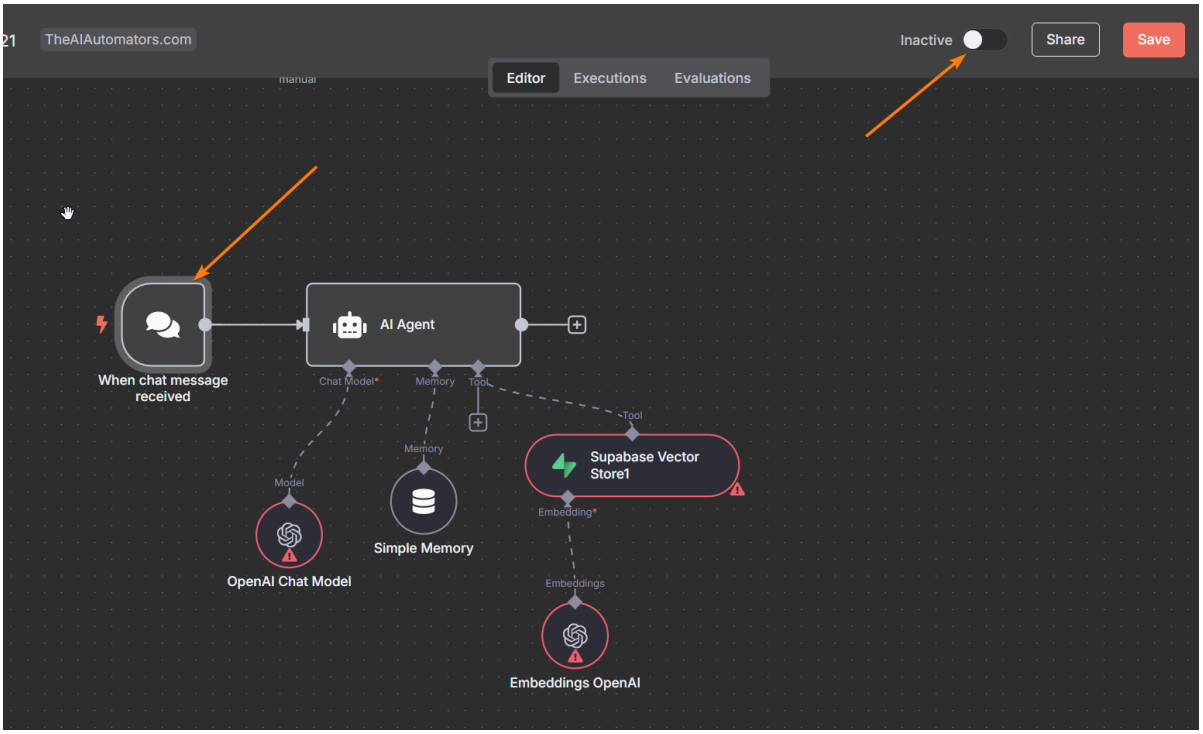
Activate the workflow



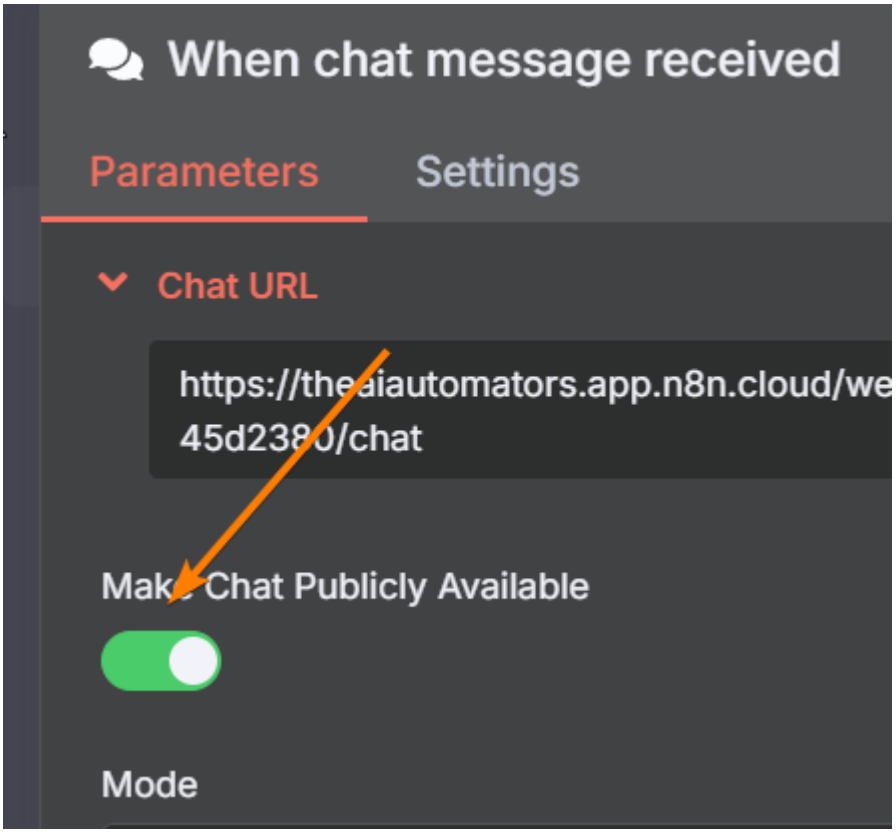
Upload a PDF to your **Multimodal RAG Google Drive folder**, this should then be picked up by the workflow.

Chat to your agent

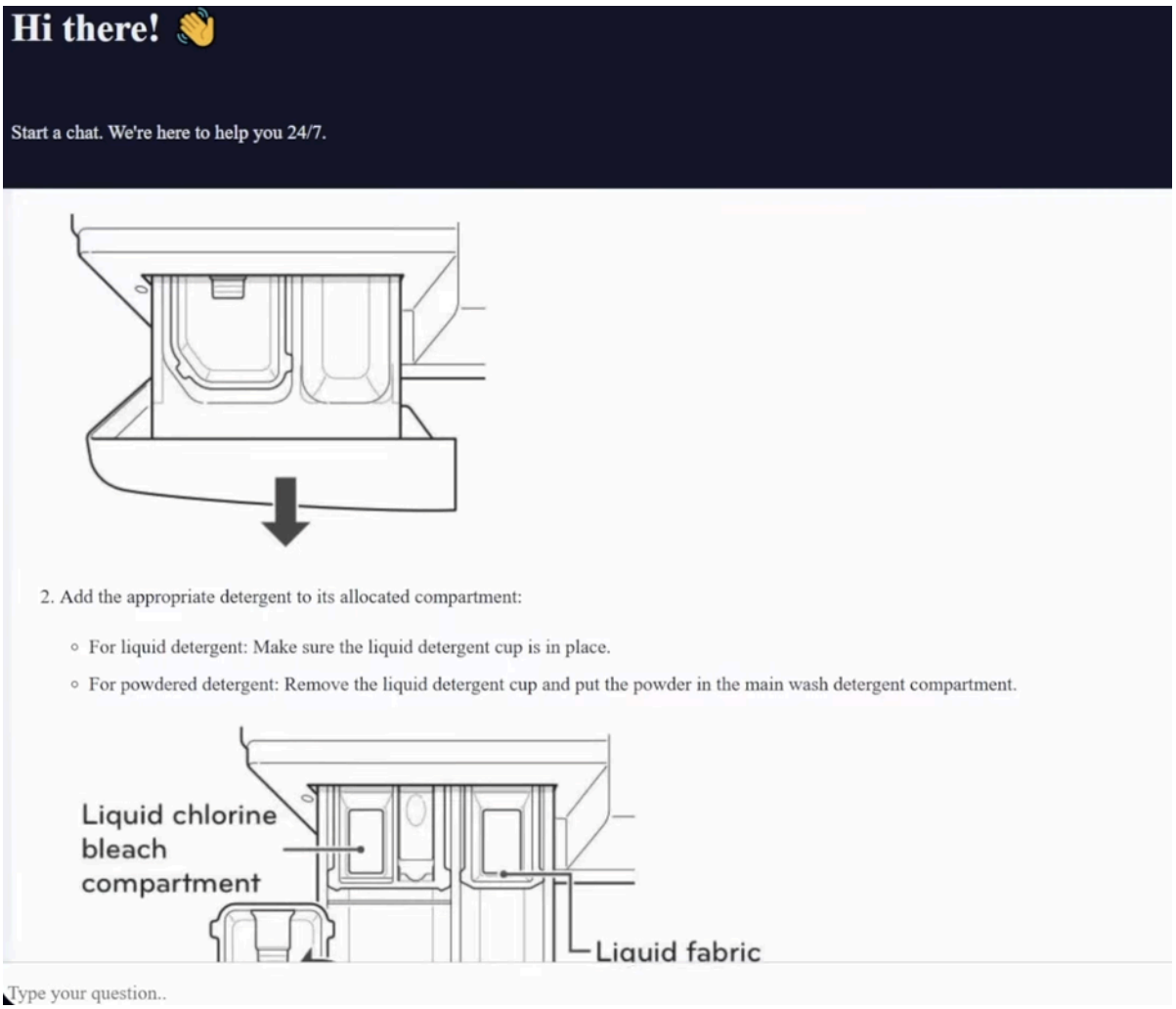
Select the **public chat url** in the “when chat message received” node:



Then open up the chat URL in your browser.



Then start chatting with your data!



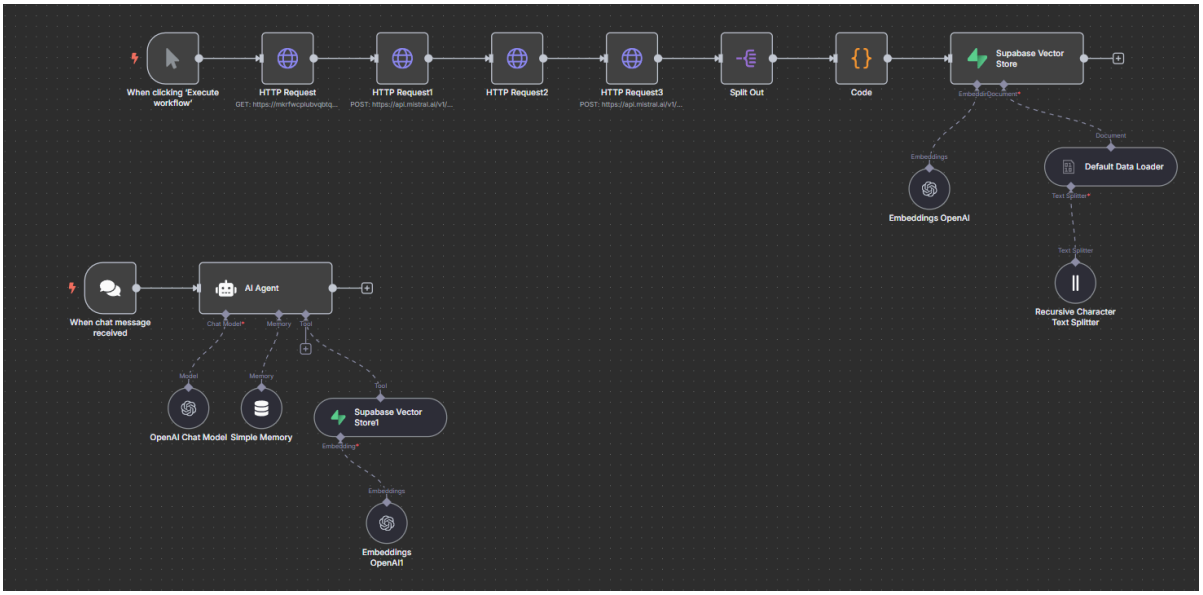
Note: Memory Limits on n8n Cloud

n8n Cloud comes with limited memory (starting with only 320Mb RAM!). If you're hitting memory limits in any n8n workflow, then you can break any memory-intensive parts of your flow into their own subworkflows, because when a subworkflow is finished processing, it frees up that memory. Alternatively, you can choose to self-host n8n, which will likely give you far more memory to work with.

Alternative Workflow: Simpler OCR Ingestion workflow

If you're just looking for OCR functionality without uploading images, then you can use this workflow.

Connections to Mistral, Supabase, and OpenAI are the same as in the blueprint above.



Have fun!

Alan Walsh
The AI Automators