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Introduction

The question of how and where to store our data is still pending. Last week I proposed to use primarily SQL for everything (for now), and a lot of decisions were made since then. I will give you a quick update on it.

Zeb suggested to look into Redis, so I did. Initially I got very excited about it, but as I was learning more about it's limitations, I realized it may not be the right solution for us at this moment. I considered Redis-only and Redis+PostgreSQL solutions. The only reason we would implement it is to (considerably) increase the performance of VINO, but right now we have other priorities.

In addition, I made a decision to use cloud-based database hosting. The reason is that currectly I am running our database locally, which means that the server is only running when my laptop is on. If our team wants to collaborate, we need to find a different solution.

There are two options:

1. Cloud-hosted database service.
2. Hosting the server on Artur's computer (he suggested it).

I think the option 2 doesn't make so much sense for now, though it might for deployment.

For option 1 I did quick research with Gemini and Google.

https://g.co/gemini/share/4630f3540361

https://g.co/gemini/share/856da75ed0e1

After comparing the list of features of different databases, I read a little more about the one I liked the most: https://supabase.com/

And I was impressed by the amount of features and how well it applies to our case. We might consider it for deployment, but for now it definitely sufficient.

Foundation

I've built a foundation, using supabase guides and my code for psycopg2 module:

```
import os
from dotenv import load_dotenv
from supabase import create_client, Client

from config import NEW_DOCUMENTS_DIR, KB_DOCUMENTS_DIR
from document_processor import load_documents_from_directory,
extract_text_from_pdf, process_document_content

load_dotenv()

url: str = os.environ.get("SUPABASE_URL") or ""
key: str = os.environ.get("SUPABASE_KEY") or ""
supabase: Client = create_client(url, key)

metadata, content = load_documents_from_directory(NEW_DOCUMENTS_DIR)

def move_files_to_processed():
    """
    Move processed files from the new documents directory to the processed
documents directory.

    Returns:
        None
    """
    for file in os.listdir(NEW_DOCUMENTS_DIR):
        source = os.path.join(NEW_DOCUMENTS_DIR, file)
        destination = os.path.join(KB_DOCUMENTS_DIR, file)
        os.rename(source, destination)
    return 'Files moved successfully'

def upload_documents_to_supabase(metadata_list, content_list):
    """
    Upload multiple document metadata and content to Supabase.

    Args:
        metadata_list: List of metadata dictionaries for documents.
        content_list: List of document contents.

    Returns:
        str: Success message or error information
    """
    try:
        # Process all documents
        for i, meta in enumerate(metadata_list):
            # Get the corresponding content
            if isinstance(content_list, list) and i < len(content_list):
                doc_content = content_list[i]
            else:
                print(f"Warning: Content missing for document
{meta['file_name']}")
                continue

            # Insert metadata into the filemetadata table
            metadata_response = (
                supabase.table("filemetadata")
                .insert({
                    "file_name": meta['file_name'],
                    "file_size": meta['file_size'],
                    "file_type": meta['file_type'],
                    "page_count": meta['page_count'],
                    "word_count": meta['word_count'],
                    "char_count": meta['char_count'],
                    "keywords": meta['keywords'],
                    "source": meta['source'],
                    "abstract": meta['abstract']
                })
                .execute()
            )

            # Get the ID of the newly inserted metadata record
            metadata_id = metadata_response.data[0]['id']

            # Insert content into the largeobject table with reference to metadata
            content_response = (
                supabase.table("largeobject")
                .insert({
                    "oid": metadata_id,
                    "plain_text": doc_content
                })
                .execute()
            )

            print(f"Uploaded document: {meta['file_name']}")

        return "All documents uploaded successfully"
    except Exception as e:
        error_message = f"Error uploading documents to Supabase: {str(e)}"
        print(error_message)
        return error_message

try:
    upload_documents_to_supabase(metadata, content)
    move_files_to_processed()
except Exception as e:
    error_message = f"Error uploading documents to Supabase: {str(e)}"
    print(error_message)
```

This program loads the documents from a dedicated directory, extracts its metadata and text, uploads it to supabase (postgreSQL) and moves processed files to another folder.

File Storage Upload

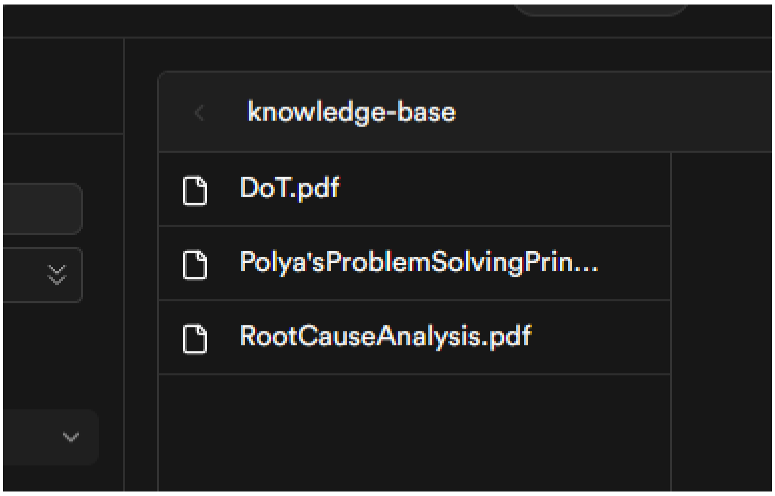
Supabase also offers file storage functionality, which I assume acts as object storage. I was able to download the PDF's I uploaded earlier. I don't know to what extend I can access the files, what I can do with them. I belive there is also a semantic search, but I don't know if it's only for the database or the files. Probably there will need to be a vector store instance.

For now, I want to focus on my python program uploading the processed files to the file storage. I found this page, which should help me with that: https://supabase.com/docs/guides/storage/uploads/standard-uploads?queryGroups=language&language=python

I had to make changes in this function (former move_to_processed()):

```
def upload_move_to_processed():
    """
    Upload to file storage and move processed files from the new documents
directory to the processed documents directory.

    Returns:
        str: Success message
    """
    for file in os.listdir(NEW_DOCUMENTS_DIR):
        source = os.path.join(NEW_DOCUMENTS_DIR, file)
        try:
            response = supabase.storage.from_('knowledge-base').upload(file,
source)
            print(f"Successfully uploaded: {file}")
            destination = os.path.join(KB_DOCUMENTS_DIR, file)
            os.rename(source, destination)
        except Exception as e:
            print(f"Error uploading {file}: {e}")
            continue
    return 'Files uploaded and moved successfully'
```



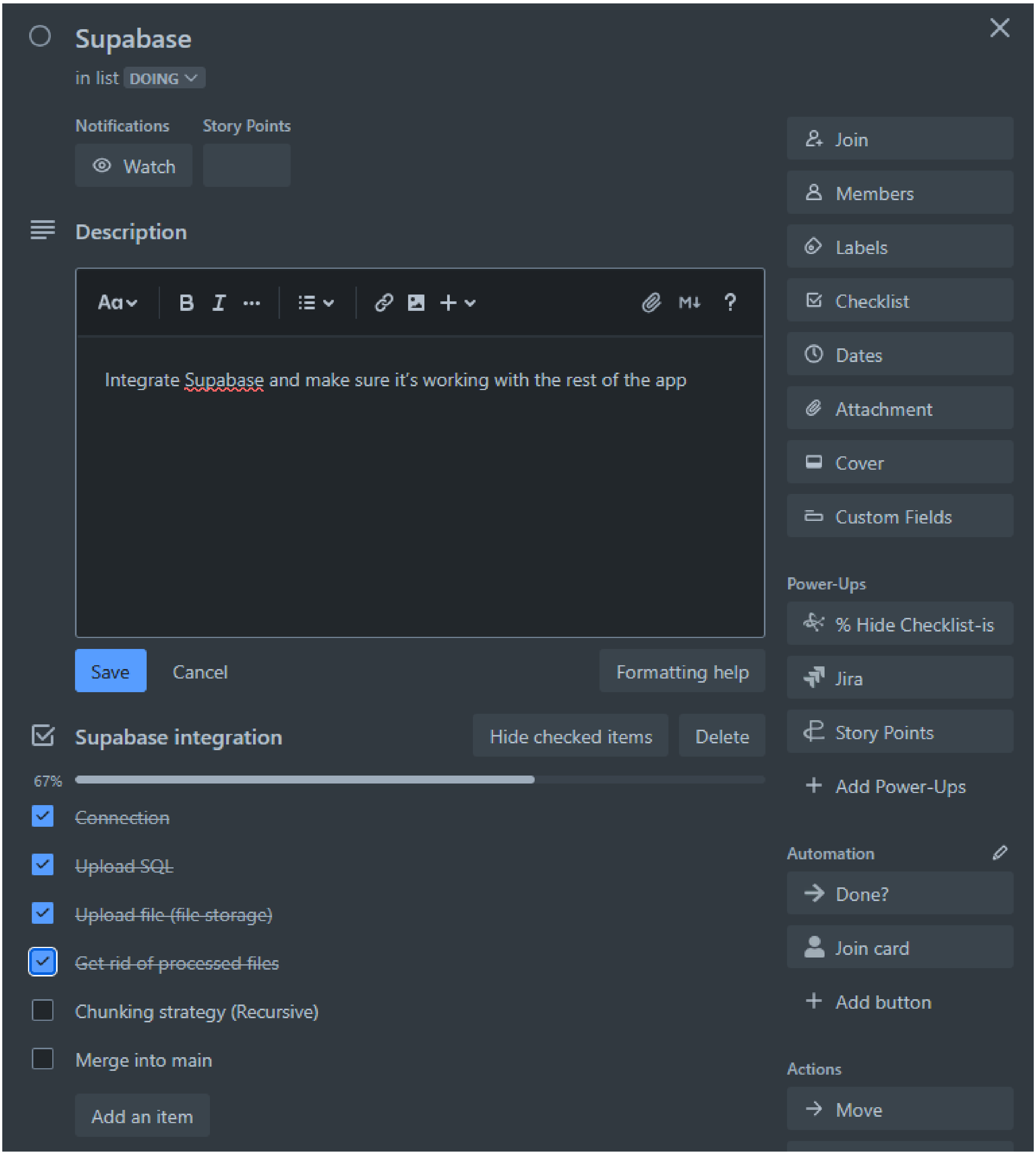
knowledge-base

DoT.pdf

Polya'sProblemSolvingPrin...

RootCauseAnalysis.pdf

Trello ticket:



○ Supabase

in list DOING

Description

Integrate Supabase and make sure it's working with the rest of the app

☑ Supabase integration

67%

- ☑ ~~Connection~~
- ☑ ~~Upload SQL~~
- ☑ ~~Upload file (file storage)~~
- ☑ ~~Get rid of processed files~~
- □ Chunking strategy (Recursive)
- □ Merge into main

I merged the changes into main and surprisingly I didn't encounter any merge conflicts, even though I was working on this branch for 2 weeks. I think it's because I separated separate functionality into different files.

Although all the new functionality is kind of on it's own, and not integrated with the rest of the app. I will create a separate program to run that will upload the files to supabase.

I had to refactor it a little bit, but now we have a small program(upload_supa.py) that can handle file upload to supabase. If there are any other operations with the db, they can be also added to supa.py.

```
#upload_supa.py
""" Program to upload a files to Supabase storage."""
```

```
from supa import upload_move_to_processed, upload_documents_to_sql
from document_processor import load_documents_from_directory

from config import NEW_DOCUMENTS_DIR

if __name__ == "__main__":
    metadata, content = load_documents_from_directory(NEW_DOCUMENTS_DIR)
    try:
        upload_documents_to_sql(metadata, content)
        upload_move_to_processed()
    except Exception as e:
        error_message = f"Error uploading documents to Supabase: {str(e)}"
        print(error_message)
```

Fixing user uploads

While working on a different file upload strategy, I didn't pay attention to user uploads, and today I decided to fix it. I got the user uploads to work again, but there are a few bugs. The following files were updated: database.py document_processor.py APIendpoint.py

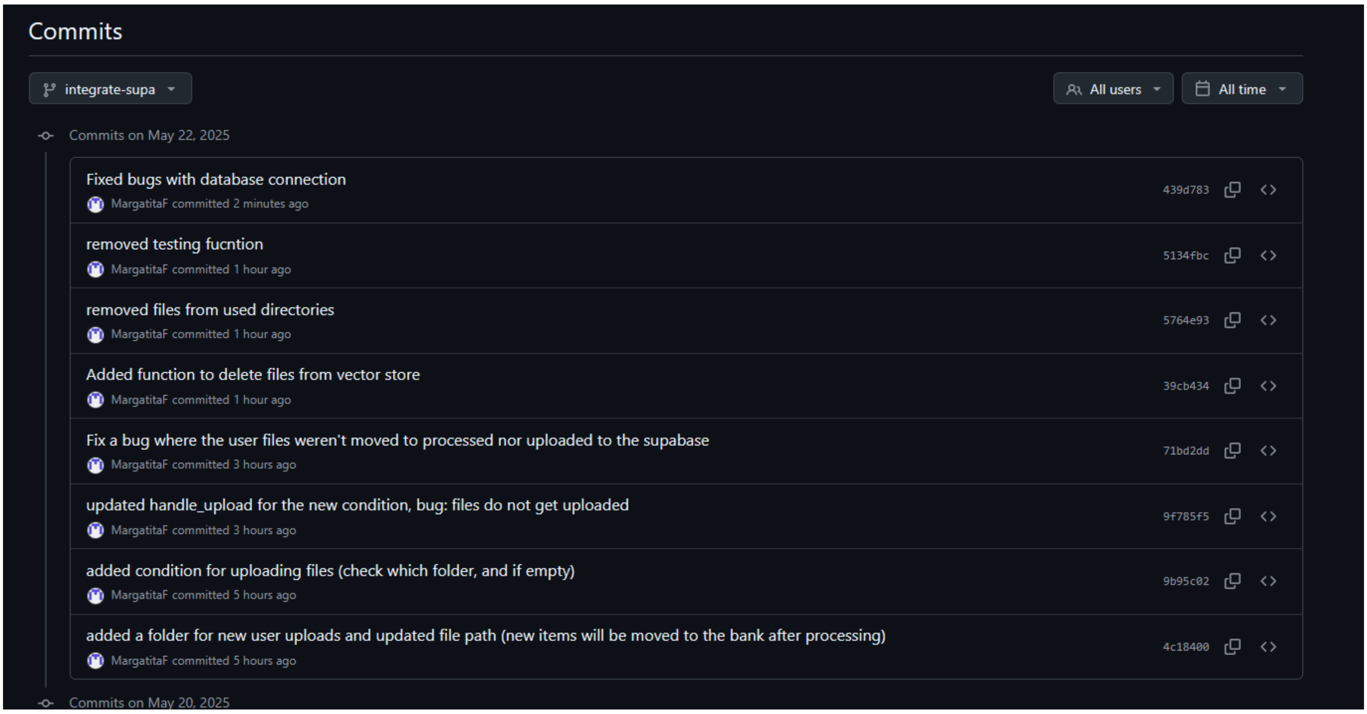
I was mainly adjusting the parameters I was passing through metadata. Bugs that need to be fixed:

1. When I view the contents of the vector store, the source of the files are displayed correctly. But if I do it via CLI it shows "system_upload" for user documents. I don't know why that is.
2. VINO AI isn't displaying all the uploaded documents correctly. I don't remember if it every did (in the web-version).

! It's not a bug, but user uploads need to be connected to Supabase.

Fixing bugs and Automatic user uploads

Earlier I described 2 bugs and 1 task that I need to do the next day. This is the next day, and I am very happy that I managed to fix those bugs and one extra! An extra bug was that after automating user uploads, the database connection was failing. I wasn't documenting the process, but my git commits speak for themselves:



Commits

Commits on May 22, 2025

Fixed bugs with database connection
MargatitaF committed 2 minutes ago 439d783

removed testing fucntion
MargatitaF committed 1 hour ago 5134fbc

removed files from used directories
MargatitaF committed 1 hour ago 5764e93

Added function to delete files from vector store
MargatitaF committed 1 hour ago 39cb434

Fix a bug where the user files weren't moved to processed nor uploaded to the supabase
MargatitaF committed 3 hours ago 71bd2dd

updated handle_upload for the new condition, bug: files do not get uploaded
MargatitaF committed 3 hours ago 9f785f5

added condition for uploading files (check which folder, and if empty)
MargatitaF committed 5 hours ago 9b95c02

added a folder for new user uploads and updated file path (new items will be moved to the bank after processing)
MargatitaF committed 5 hours ago 4c18400

Commits on May 20, 2025

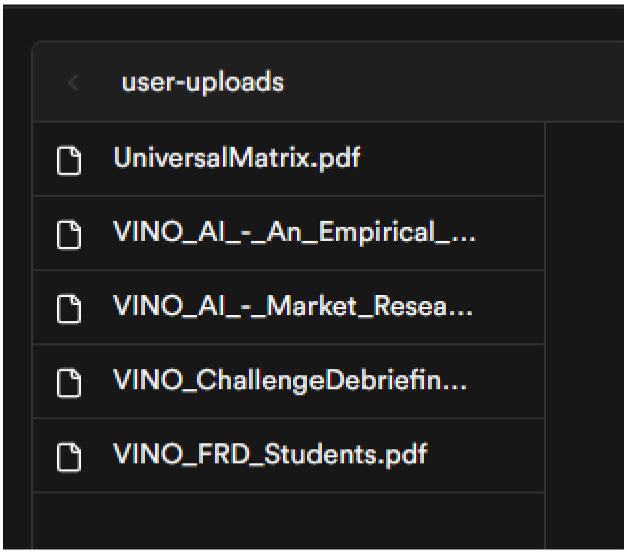
What I've done today:

Fixed:

- Incorrect listing of uploaded files
- Incorrect "source" field
- Failing database connection

- Automated user uploads to vector store and supabase

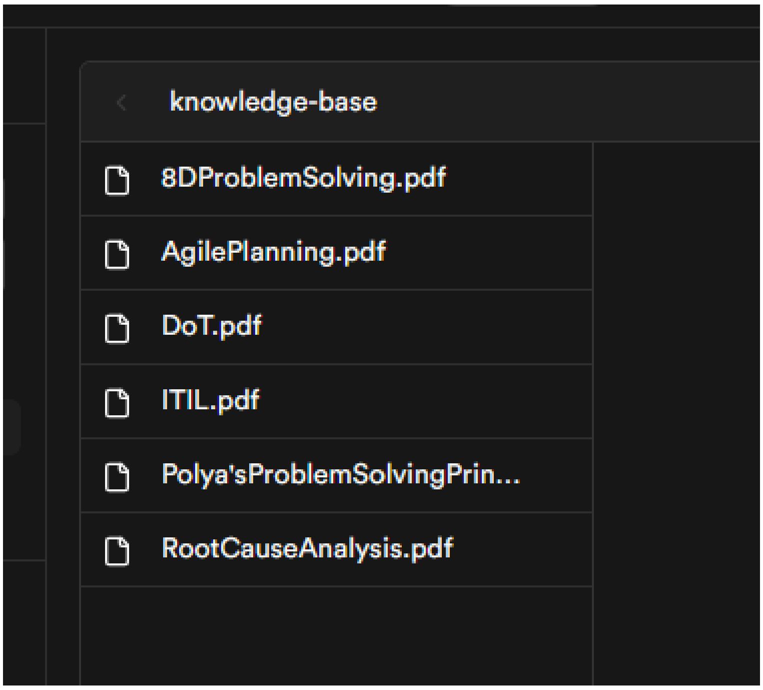
Supabase user-uploaded PDFs:



user-uploads

UniversalMatrix.pdf
VINO_AI_-_An_Empirical_...
VINO_AI_-_Market_Resea...
VINO_ChallengeDebriefin...
VINO_FRD_Students.pdf

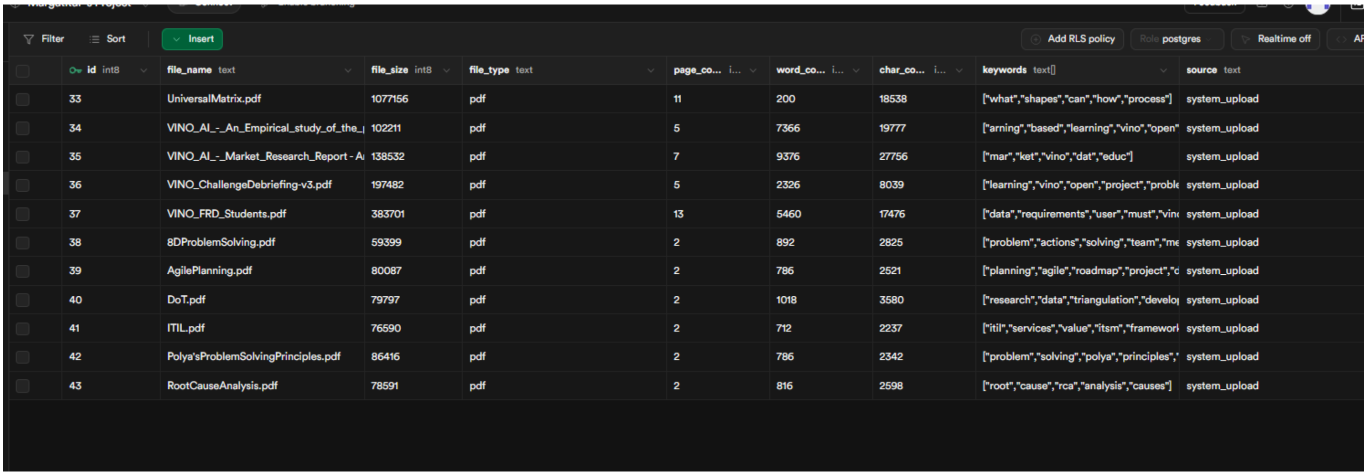
Knowledge base items (manual upload by running upload_supa.py):



knowledge-base

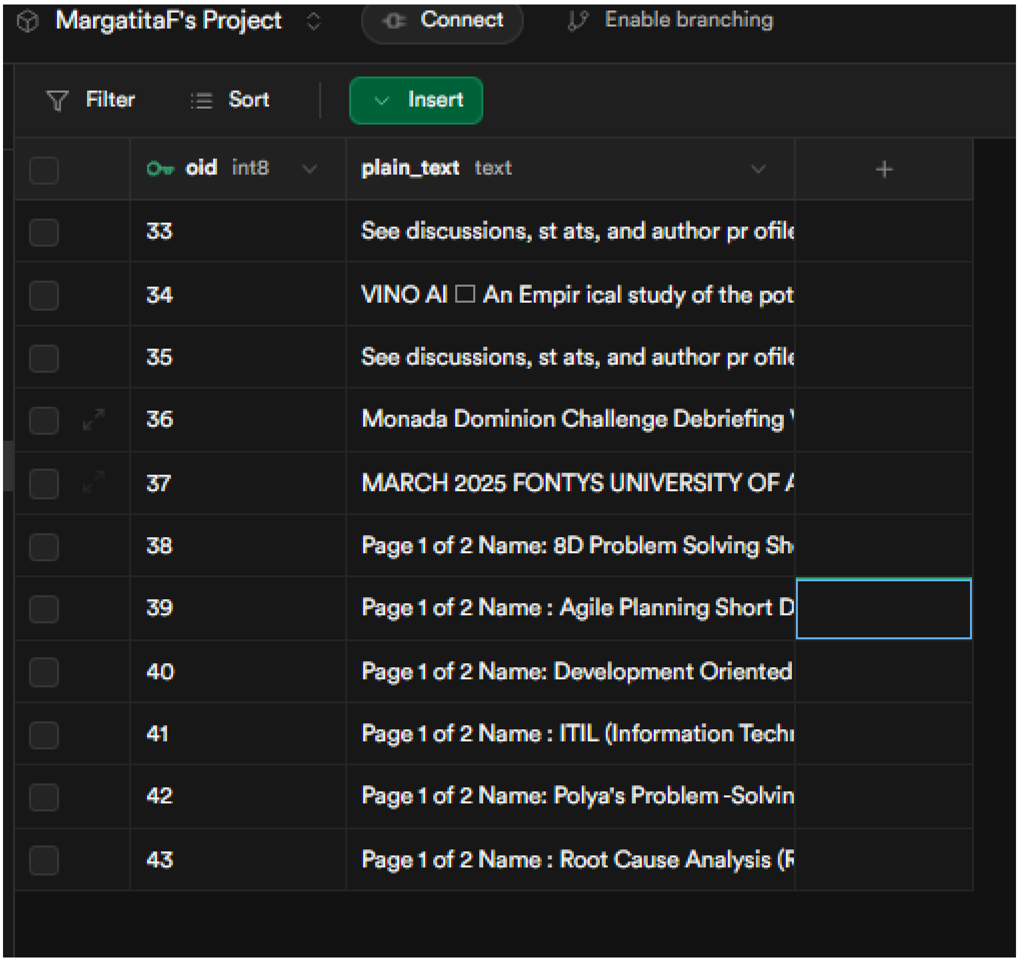
- 8DProblemSolving.pdf
- AgilePlanning.pdf
- DoT.pdf
- ITIL.pdf
- Polya'sProblemSolvingPrin...
- RootCauseAnalysis.pdf

Added to SQL files (must change it so duplicates are not allowed) (I just noticed the source is wrong again, even though it's correct in the vector store):



id int8	file_name text	file_size int8	file_type text	page_co... i...	word_co... i...	char_co... i...	keywords text[]	source text
33	UniversalMatrix.pdf	1077156	pdf	11	200	18538	["what","shapes","can","how","process"]	system_upload
34	VINO_AI_-_An_Empirical_study_of_the_	102211	pdf	5	7366	19777	["arning","based","learning","vino","open"	system_upload
35	VINO_AI_-_Market_Research_Report - A	138532	pdf	7	9376	27756	["mar","ket","vino","dat","educ"]	system_upload
36	VINO_ChallengeDebriefing-v3.pdf	197482	pdf	5	2326	8039	["learning","vino","open","project","proble	system_upload
37	VINO_FRD_Students.pdf	383701	pdf	13	5460	17476	["data","requirements","user","must","vin	system_upload
38	8DProblemSolving.pdf	59399	pdf	2	892	2825	["problem","actions","solving","team","me	system_upload
39	AgilePlanning.pdf	80087	pdf	2	786	2521	["planning","agile","roadmap","project","d	system_upload
40	DoT.pdf	79797	pdf	2	1018	3580	["research","data","triangulation","develo	system_upload
41	ITIL.pdf	76590	pdf	2	712	2237	["itil","services","value","itsm","framewor	system_upload
42	Polya'sProblemSolvingPrinciples.pdf	86416	pdf	2	786	2342	["problem","solving","polya","principles","	system_upload
43	RootCauseAnalysis.pdf	78591	pdf	2	816	2598	["root","cause","rca","analysis","causes"]	system_upload

Full text from the added files:



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□	42	Page 1 of 2 Name: Polya's Problem -Solvin
□	43	Page 1 of 2 Name : Root Cause Analysis (R

And I plan to clean up the code a little bit, because it's became a bit of a mess during the process.