Table of Contents

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

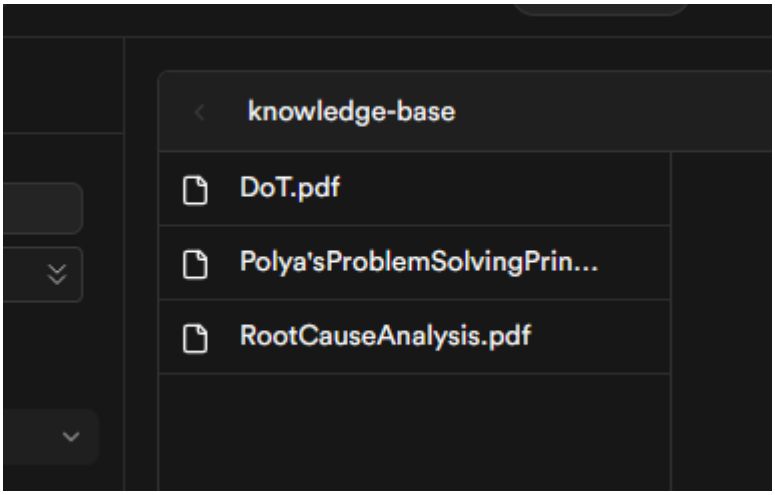
Supabase also offers file storage functionality, which I assume acts as object storage. I was able to download the PDF's I uploaded earlier. I don't know to what extend I can access the files, what I can do with them. I belive there is also a semantic search, but I don't know if it's only for the database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

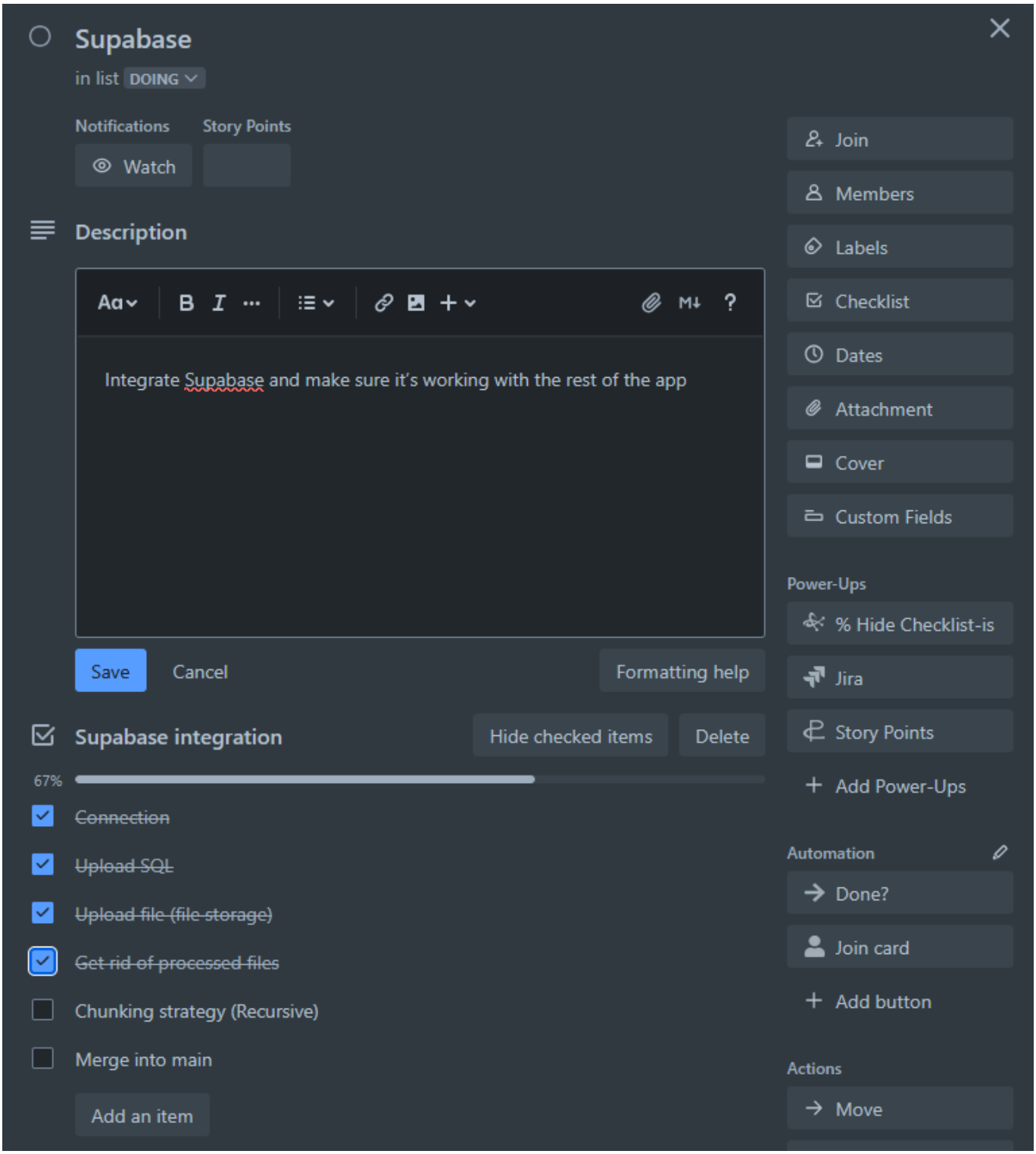
I had to make changes in this function (former move_to_processed()):

```
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'
```



Trello ticket:



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.