So I will explain in brief how I implemented the openAI API integration along with file upload and file retrieval.

File upload:

So for file upload, I have built a simple interface where the user can upload files directly to your S3 bucket, and the program will generate a unique random 16 digit string that will enable the user to retrieve it later.

OpenAI API integration retrieval system:

for openAI api integration and file retrieval, I have built a simple chatbot for demo, in which you will give him the file name and then he will retrieve that file to the conversation.

Setup and Installation of the project:

1. first, go to openAI dashboard and create an assistant with the following values:
    - **name:** you can choose a name like "file retrieval assistant"
    - **instructions:** you can adjust this instruction as you'd like:
        - *"You have two main jobs: 1. the first job is to take the 16 random digit string file name from the user and call the function "retrieve_from_s3_and_send_to_openai" to retrieve the user's file. if that function returns "The file has been successfully retrieved", tell the user that the file has been retrieved and is ready 2. Once the file is retrieved, you will be provided with that file, so your next job is to assist the user and answer his question based only on the retrieved file. - IMPORTANT: only call the "retrieve_from_s3_and_send_to_openai" function if the user provide you with a file name that consist of 16 digit in his prompt"*

    - **model:** choose the modal that you want (make sure that the model support functions, code interpreter and retrieval
    - activate the code interpreter and retrieval
    - click on add a function, and paste this function there, then save:

```
{
  "name": "retrieve_from_s3_and_send_to_openai",
  "description": "Retrieve the user's file based on the provided file name that consist of 16 digit random string",
  "parameters": {
    "type": "object",
```

```
    "properties": {
      "fileName": {
        "type": "string",
        "description": "the file name that consist of 16 digit random string something like
that (htrMvWIF8Zd9jKcc.pdf)"
      }
    },
    "required": [
      "fileName"
    ]
  }
}
```

- then click same, and copy the assistant id

2. after downloading and extracting the zip file, run this command on the working directory:

pip install -r requirements.txt

3. go to ".env" file, and replace the "OPENAI_API_KEY" with your Openai api key.
and replace the "MAIN_ASSISTANT_ID", with the id of the created assistant that will be responsible for retrieving files from DB

4. I have already replaced your AWS credentials in .env

5. to preview and test the upload functionality and interface run this command:

streamlit run upload.py

-> once done, click "ctrl + c" to exit

3. to preview and test the file retrieval and openai integration run the command:

streamlit run chat.py

-> to give you an overview of how this assistant will work, we first have the main assistant which we have created on openAi, this is assistant that will take the 16 digit from the user and retrieve that file, once it retrieve the file, it does create a new assistant especially for that user and that file, so that it give accurate answers

-> you can edit and adjust the child assistant on the "assistant-params.json", you edit the name, instructions, modal