**Implementing CRUD Operations with FAISS and FastAPI:**

FAISS (Facebook AI Similarity Search) is a library that allows developers to quickly search for embeddings of multimedia documents that are similar to each other.

**Install FAISS:**

import faiss

import numpy as np

# Initialize the FAISS index

dimension = 384 # Adjust based on the embedding dimension of the model used

index = faiss.IndexFlatL2(dimension) # Using L2 distance (Euclidean)

# Save the index to a file (optional)

faiss.write\_index(index, "faiss\_index.bin")

# Load the index from a file (optional)

index = faiss.read\_index("faiss\_index.bin")

**Important:**

Create a Python module faiss\_crud.py to manage the FAISS index and perform CRUD operations.

main.py for the Main Application.

pip install -r requirements.txt

**Running Uvicorn Directly Using Python:**

Ensure you are in the project directory:

cd (PATH)faiss\_fastapi\_project

python -m uvicorn main:app --reload

**Setup Postman for CRUD Operations:**

Postman is a software application that allows developers to test, document, and share APIs (Application Programming Interfaces).

**1. Create Operation**

Method: POST

URL: http://127.0.0.1:8000/create/

Headers:

accept: application/json

Content-Type: application/json

Body:

json

{

"text": "This is an example sentence."

}

**2. Read Operation**

Method: GET

URL: http://127.0.0.1:8000/read/{item\_id}

Replace {item\_id} with the actual ID returned from the create operation.

Headers:

accept: application/json

**3. Update Operation**

Method: PUT

URL: http://127.0.0.1:8000/update/{item\_id}

Replace {item\_id} with the actual ID you want to update.

Headers:

accept: application/json

Content-Type: application/json

Body:

json

{

"text": "This is an updated sentence."

}

**4. Delete Operation**

Method: DELETE

URL: http://127.0.0.1:8000/delete/{item\_id}

Replace {item\_id} with the actual ID you want to delete.

Headers:

accept: application/json