

Knowledge Base Retrieval Chatbot

WEEK 4

```
[29]: pip install langchain faiss-cpu openai tiktoken
```

Requirement already satisfied: langchain in c:\users\paval\anaconda3\lib\site-packages (0.1.12)Note: you may need to restart the kernel to use updated packages.

Collecting faiss-cpu

Downloading faiss_cpu-1.11.0-cp312-cp312-win_amd64.whl.metadata (5.0 kB)
Requirement already satisfied: openai in c:\users\paval\anaconda3\lib\site-packages (1.82.0)
Requirement already satisfied: tiktoken in c:\users\paval\anaconda3\lib\site-packages (0.9.0)
Requirement already satisfied: PyYAML>=5.3 in c:\users\paval\anaconda3\lib\site-packages (from langchain) (6.0.1)
Requirement already satisfied: SQLAlchemychemy<3,>=1.4 in c:\users\paval\anaconda3\lib\site-packages (from langchain) (2.0.34)
Requirement already satisfied: aiohttp<4.0.0,>=3.8.3 in c:\users\paval\anaconda3\lib\site-packages (from langchain) (3.10.5)
Requirement already satisfied: dataclasses-json<0.7,>=0.5.7 in c:\users\paval\anaconda3\lib\site-packages (from langchain) (0.6.7)
Requirement already satisfied: jsonpatch<2.0,>=1.33 in c:\users\paval\anaconda3\lib\site-packages (from langchain) (1.33)
Requirement already satisfied: langchain-community<0.1,>=0.0.28 in c:\users\paval\anaconda3\lib\site-packages (from langchain) (0.0.38)
Requirement already satisfied: langchain-core<0.2.0,>=0.1.31 in c:\users\paval\anaconda3\lib\site-packages (from langchain) (0.1.53)
Requirement already satisfied: langchain-text-splitters<0.1,>=0.0.1 in c:\users\paval\anaconda3\lib\site-packages (from langchain) (0.0.2)
Requirement already satisfied: langsmith<0.2.0,>=0.1.17 in c:\users\paval\anaconda3\lib\site-packages (from langchain) (0.1.147)
Requirement already satisfied: numpy<2,>=1 in c:\users\paval\anaconda3\lib\site-packages (from langchain) (1.26.4)
Requirement already satisfied: pydantic<3,>=1 in c:\users\paval\anaconda3\lib\site-packages (from langchain) (2.8.2)
Requirement already satisfied: requests<3,>=2 in c:\users\paval\anaconda3\lib\site-packages (from langchain) (2.32.3)
Requirement already satisfied: tenacity<9.0.0,>=8.1.0 in c:\users\paval\anaconda3\lib\site-packages (from langchain) (8.2.3)
Requirement already satisfied: packaging in c:\users\paval\anaconda3\lib\site-packages (from faiss-cpu) (23.2)
Requirement already satisfied: anyio<5,>=3.5.0 in c:\users\paval\anaconda3\lib\site-packages (from openai) (4.2.0)
Requirement already satisfied: distro<2,>=1.7.0 in c:\users\paval\anaconda3\lib\site-packages (from openai) (1.9.0)
Requirement already satisfied: httpx<1,>=0.23.0 in c:\users\paval\anaconda3\lib\site-packages (from openai) (0.27.0)
Requirement already satisfied: jitter<1,>=0.4.0 in c:\users\paval\anaconda3\lib\site-packages (from openai) (0.10.0)
Requirement already satisfied: sniffio in c:\users\paval\anaconda3\lib\site-packages (from openai) (1.3.0)

Installing collected packages: faiss-cpu
Successfully installed faiss-cpu-1.11.0

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[35]: from langchain.document_loaders import TextLoader
from langchain.text_splitter import CharacterTextSplitter
from langchain.vectorstores import FAISS
from langchain.embeddings import OpenAIEmbeddings
from langchain.chains import RetrievalQA
from langchain.chat_models import ChatOpenAI

loader = TextLoader("ASSIGNMENT QUESTIONS.txt")
documents = loader.load()
text_splitter = CharacterTextSplitter(chunk_size=500, chunk_overlap=50)
docs = text_splitter.split_documents(documents)
embeddings = OpenAIEmbeddings()
db = FAISS.from_documents(docs, embeddings)
retriever = db.as_retriever()
llm = ChatOpenAI(model="gpt-4", temperature=0)
qa_chain = RetrievalQA.from_chain_type(llm=llm, retriever=retriever)

# queries
query = "Where is your office located?"
response = qa_chain.run(query)
print("Bot:", response)

query1 = "What's the admission deadline?"
response = qa_chain.run(query1)
print("Bot:", response)
```

Bot: Our office is located in Building A, Room 101.
Bot: The admission deadline is July 31st for the fall semester.