

```
from google.colab import drive
drive.mount('/content/drive/')

```

Mounted at /content/drive/

```
!pip install langchain
!pip install openai
!pip install tiktoken
!pip install faiss-gpu
!pip install langchain_experimental
!pip install "langchain[docarray]"

```

Collecting langchain

Downloading langchain-0.0.333-py3-none-any.whl (2.0 MB)

2.0/2.0 MB 12.6 MB/s eta 0:00:00

Requirement already satisfied: PyYAML<=5.3 in /usr/local/lib/python3.10/dist-packages (from langchain) (6.0.1)  
 Requirement already satisfied: SQLAlchemy<3,>=1.4 in /usr/local/lib/python3.10/dist-packages (from langchain) (2.0.23)  
 Requirement already satisfied: aiohttp<4.0.0,>=3.8.3 in /usr/local/lib/python3.10/dist-packages (from langchain) (3.8.6)  
 Requirement already satisfied: anyio<4.0 in /usr/local/lib/python3.10/dist-packages (from langchain) (3.7.1)  
 Requirement already satisfied: async-timeout<5.0.0,>=4.0.0 in /usr/local/lib/python3.10/dist-packages (from langchain) (4.0.3)  
 Collecting dataclasses-json<0.7,>=0.5.7 (from langchain)  
 Downloading dataclasses\_json-0.6.1-py3-none-any.whl (27 kB)  
 Collecting jsonpatch<2.0,>=1.33 (from langchain)  
 Downloading jsonpatch-1.33-py2.py3-none-any.whl (12 kB)  
 Collecting langsmith<0.1.0,>=0.0.62 (from langchain)  
 Downloading langsmith-0.0.62-py3-none-any.whl (45 kB)

45.2/45.2 kB 5.9 MB/s eta 0:00:00

Requirement already satisfied: numpy<2,>=1 in /usr/local/lib/python3.10/dist-packages (from langchain) (1.23.5)  
 Requirement already satisfied: pydantic<3,>=1 in /usr/local/lib/python3.10/dist-packages (from langchain) (1.10.13)  
 Requirement already satisfied: requests<3,>=2 in /usr/local/lib/python3.10/dist-packages (from langchain) (2.31.0)  
 Requirement already satisfied: tenacity<9.0.0,>=8.1.0 in /usr/local/lib/python3.10/dist-packages (from langchain) (8.2.3)  
 Requirement already satisfied: attrs>=17.3.0 in /usr/local/lib/python3.10/dist-packages (from aiohttp<4.0.0,>=3.8.3->langchain) (23.2.0)  
 Requirement already satisfied: charset-normalizer<4.0,>=2.0 in /usr/local/lib/python3.10/dist-packages (from aiohttp<4.0.0,>=3.8.3->langchain) (3.3.0)  
 Requirement already satisfied: multidict<7.0,>=4.5 in /usr/local/lib/python3.10/dist-packages (from aiohttp<4.0.0,>=3.8.3->langchain) (6.0.5)  
 Requirement already satisfied: yarl<2.0,>=1.0 in /usr/local/lib/python3.10/dist-packages (from aiohttp<4.0.0,>=3.8.3->langchain) (1.9.7)  
 Requirement already satisfied: frozenlist>=1.1.1 in /usr/local/lib/python3.10/dist-packages (from aiohttp<4.0.0,>=3.8.3->langchain) (1.4.1)  
 Requirement already satisfied: aiosignal>=1.1.2 in /usr/local/lib/python3.10/dist-packages (from aiohttp<4.0.0,>=3.8.3->langchain) (1.3.1)  
 Requirement already satisfied: idna>=2.8 in /usr/local/lib/python3.10/dist-packages (from anyio<4.0->langchain) (3.4)  
 Requirement already satisfied: sniffio>=1.1 in /usr/local/lib/python3.10/dist-packages (from anyio<4.0->langchain) (1.3.0)  
 Requirement already satisfied: exceptiongroup in /usr/local/lib/python3.10/dist-packages (from anyio<4.0->langchain) (1.1.3)  
 Collecting marshmallow<4.0.0,>=3.18.0 (from dataclasses-json<0.7,>=0.5.7->langchain)  
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49.4/49.4 kB 6.7 MB/s eta 0:00:00

Collecting typing-inspect<1,>=0.4.0 (from dataclasses-json<0.7,>=0.5.7->langchain)  
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 Collecting jsonpointer>=1.9 (from jsonpatch<2.0,>=1.33->langchain)  
 Downloading jsonpointer-2.4-py2.py3-none-any.whl (7.8 kB)  
 Collecting pytest-subtests<0.12.0,>=0.11.0 (from langsmith<0.1.0,>=0.0.62->langchain)  
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 Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.10/dist-packages (from requests<3,>=2->langchain) (2024.7.4)  
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 Requirement already satisfied: packaging>=17.0 in /usr/local/lib/python3.10/dist-packages (from marshmallow<4.0.0,>=3.18.0) (24.0)  
 Requirement already satisfied: pytest>=7.0 in /usr/local/lib/python3.10/dist-packages (from pytest-subtests<0.12.0,>=0.11.0) (7.4.0)  
 Collecting mpy-extensions>=0.3.0 (from typing-inspect<1,>=0.4.0->dataclasses-json<0.7,>=0.5.7->langchain)  
 Downloading mpy\_extensions-1.0.0-py3-none-any.whl (4.7 kB)

Requirement already satisfied: iniconfig in /usr/local/lib/python3.10/dist-packages (from pytest>=7.0->pytest-subtests<0.12.0,>=0.11.0) (2.0.0)  
 Requirement already satisfied: pluggy<2.0,>=0.12 in /usr/local/lib/python3.10/dist-packages (from pytest>=7.0->pytest-subtests<0.12.0,>=0.11.0) (1.5.0)  
 Requirement already satisfied: tomli>=1.0.0 in /usr/local/lib/python3.10/dist-packages (from pytest>=7.0->pytest-subtests<0.12.0,>=0.11.0) (2.0.1)  
 Installing collected packages: mpy-extensions, marshmallow, jsonpointer, typing-inspect, pytest-subtests, jsonpatch, langchain, langsmith, dataclasses-json  
 Successfully installed dataclasses-json-0.6.1 jsonpatch-1.33 jsonpointer-2.4 langchain-0.0.333 langsmith-0.0.62 marshmallow-3.20.1 typing-inspect-0.9.0  
 Collecting openai

Downloading openai-1.2.0-py3-none-any.whl (219 kB)

219.9/219.9 kB 5.8 MB/s eta 0:00:00

Requirement already satisfied: anyio<4,>=3.5.0 in /usr/local/lib/python3.10/dist-packages (from openai) (3.7.1)  
 Requirement already satisfied: distro<2,>=1.7.0 in /usr/lib/python3/dist-packages (from openai) (1.7.0)  
 Collecting httpx<1,>=0.23.0 (from openai)  
 Downloading httpx-0.25.1-py3-none-any.whl (75 kB)

75.0/75.0 kB 6.5 MB/s eta 0:00:00

```
from langchain.chains import RetrievalQA
from langchain.chat_models import ChatOpenAI
from langchain.document_loaders import TextLoader
from langchain.vectorstores import DocArrayInMemorySearch
from IPython.display import display, Markdown
from langchain.text_splitter import CharacterTextSplitter
from langchain.embeddings import OpenAIEmbeddings, HuggingFaceInstructEmbeddings
from langchain.vectorstores import FAISS
from langchain.memory import ConversationBufferMemory

```

```
from langchain.chains import ConversationalRetrievalChain
from langchain.indexes import VectorstoreIndexCreator
from langchain_experimental.agents.agent_toolkits.csv.base import create_csv_agent
from langchain.agents.agent_types import AgentType
from langchain.memory import ConversationBufferMemory
import tiktoken
```

```
import os
```

```
# Prompt the user for their OpenAI API key
api_key = input("Please enter your OpenAI API key: ")
```

```
# Set the API key as an environment variable
os.environ["OPENAI_API_KEY"] = api_key
```

```
# Optionally, check that the environment variable was set correctly
print("OPENAI_API_KEY has been set!")
```

```
➦ Please enter your OpenAI API key: sss
OPENAI_API_KEY has been set!
```

```
llm_model = "gpt-3.5-turbo"
```

```
from langchain.text_splitter import CharacterTextSplitter
```

```
txt_file_path = '/content/drive/MyDrive/ScaleX Innovation/Tutorials and Notebooks/scalexi.txt'
loader = TextLoader(file_path=txt_file_path, encoding="utf-8")
data = loader.load()
text_splitter = CharacterTextSplitter(chunk_size=1000, chunk_overlap=200)
data = text_splitter.split_documents(data)
```

```
#data
```

```
Start coding or generate with AI.
```

```
data
```

```
➦ [Document(page_content="ScaleX Innovation Bio\n\nScaleX Innovation is a pioneering leader in the realm of Generative AI and Large Language Models. With a keen focus on integrating these transformative technologies into business strategies, the company has carved a niche for itself by offering tailored solutions that enhance innovation and operational efficiency. ScaleX's proficiency extends across multiple industry verticals, ensuring that businesses can harness the power of AI-driven digital transformation. Whether it's automating workflows, content analysis, or custom model implementations, ScaleX Innovation stands at the cutting-edge, committed to bridging the gap between technology and business. Their dedication to ethical compliance and versatility makes them a trusted partner for businesses worldwide.", metadata={'source': '/content/drive/MyDrive/ScaleX Innovation/Tutorials and Notebooks/scalexi.txt'}),
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Document(page_content="Name *Email*Number*Subject*Your Message*\n\nSubmit Inquiry\n\nExploring Generative AI with ScaleX Innovation\n\nDiscovering the Magic of Generative AI and LLMs on our Medium Blogs\n\nAt ScaleX Innovation, we make the
```

```
complex world of AI easy to understand. We connect the latest tech with real-world business uses. Explore our articles and
keep up with the fast-changing world of AI. Check out our Medium page\n\nImage\nBy ScaleXI Fri, 13 Oct 2023 18:39:19
GMT\nIntroduction to Diffusion Models (Part III. Diffusion Process)\nImage\nBy ScaleXI Fri, 13 Oct 2023 17:10:19
GMT\nIntroduction to Diffusion Models (Part II: Math Intuitions)\nImage\nBy ScaleXI Fri, 13 Oct 2023 15:15:00
GMT\nIntroduction to Diffusion Models (Part I: Basic Concepts)\n\nScaleX Innovation Logo\nScaleX Innovation is at the
forefront of integrating AI and emerging technologies into business solutions, driving growth and
transformation.\n\nConnect With Us    \nContact Information\nReach Out on WhatsApp\n\n+216-55-770-606\nEmail Us At',
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At\n\ninfo@scalexi.ai\nOur Headquarter\n\nRoute Mahdia km 0.5, Pavillon d'Or Building, 3000 Sfax, Tunisia.\nQuick
Links\nAbout ScaleX\nOur Services\nAbout ScaleX Innovation\nAt ScaleX Innovation, we bridge the gap between technology and
business, propelling enterprises into the future with tailored digital solutions.', metadata={'source':
'/content/drive/MyDrive/ScaleX Innovation/Tutorials and Notebooks/scalexi.txt'})])
```

```
# Create vector store
embeddings = OpenAIEmbeddings()
vectorstore = FAISS.from_documents(data, embedding=embeddings)
```

```
# Create conversation chain
llm = ChatOpenAI(temperature=0.7, model_name="gpt-4")
memory = ConversationBufferMemory(
memory_key='chat_history', return_messages=True)
conversation_chain = ConversationalRetrievalChain.from_llm(
    llm=llm,
    chain_type="stuff",
    retriever=vectorstore.as_retriever(),
    memory=memory
)
```

```
query = "What is ScaleX Innovation?"
result = conversation_chain({"question": query})
answer = result["answer"]
answer
```

↩ 'ScaleX Innovation is a leading company in the field of Generative AI and Large Language Models. They specialize in integra-  
ting these technologies into business strategies, offering tailored solutions that boost innovation and operational efficie-  
ncy. Their services include automating workflows, content analysis, and implementing custom models. They operate across mul-

```
query = "What is the contact information?"
result = conversation_chain({"question": query})
answer = result["answer"]
answer
```

↩ 'The contact information for ScaleX Innovation is as follows:\n\nAddress: Route Mahdia km 0.5, Pavillon d'Or Building, 3000  
Sfax, Tunisia.\nEmail: info@scalexi.ai\n\nPhone Number: +216-55-770-606\n\nThey can also be reached out on WhatsApp at th-

```
query = "What are the main activities of ScaleX Innovation. Write is as three bullet points."
result = conversation_chain({"question": query})
answer = result["answer"]
answer
```

↩ '- Specializing in Generative AI and Large Language Models, offering bespoke solutions that drive innovation and automate w-  
orkflows.\n- Providing cross-domain consultation and business automation with a client-centric approach.\n- Implementing cu-

Start coding or [generate](#) with AI.

