

!pip install langchain

```

Requirement already satisfied: requests<3,>=2 in /usr/local/lib/python3.10/dist-packages (from langchain) (2.32.3)
Collecting tenacity!=8.4.0,<9.0.0,>=8.1.0 (from langchain)
  Downloading tenacity-8.5.0-py3-none-any.whl.metadata (1.2 kB)
Requirement already satisfied: aiohappyeyeballs>=2.3.0 in /usr/local/lib/python3.10/dist-packages (from aiohttp<4.0.0,>=3.8.3->langchain) (1.2.2)
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: attrs>=17.3.0 in /usr/local/lib/python3.10/dist-packages (from aiohttp<4.0.0,>=3.8.3->langchain) (24.2.0)
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: 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)
Collecting jsonpatch<2.0,>=1.33 (from langchain-core<0.3.0,>=0.2.38->langchain)
  Downloading jsonpatch-1.33-py2.py3-none-any.whl.metadata (3.0 kB)
Requirement already satisfied: packaging<25,>=23.2 in /usr/local/lib/python3.10/dist-packages (from langchain-core<0.3.0,>=0.2.38->langchain) (24.1)
Requirement already satisfied: typing-extensions>=4.7 in /usr/local/lib/python3.10/dist-packages (from langchain-core<0.3.0,>=0.2.38->langchain) (4.11.0)
Collecting httpx<1,>=0.23.0 (from langsmith<0.2.0,>=0.1.17->langchain)
  Downloading httpx-0.27.2-py3-none-any.whl.metadata (7.1 kB)
Collecting orjson<4.0.0,>=3.9.14 (from langsmith<0.2.0,>=0.1.17->langchain)
  Downloading orjson-3.10.7-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl.metadata (50 kB)
    50.4/50.4 kB 1.3 MB/s eta 0:00:00
Requirement already satisfied: annotated-types>=0.4.0 in /usr/local/lib/python3.10/dist-packages (from pydantic<3,>=1->langchain) (0.6.0)
Requirement already satisfied: pydantic-core==2.20.1 in /usr/local/lib/python3.10/dist-packages (from pydantic<3,>=1->langchain) (2.20.1)
Requirement already satisfied: charset-normalizer<4,>=2 in /usr/local/lib/python3.10/dist-packages (from requests<3,>=2->langchain) (3.3.2)
Requirement already satisfied: idna<4,>=2.5 in /usr/local/lib/python3.10/dist-packages (from requests<3,>=2->langchain) (3.10)
Requirement already satisfied: urllib3<3,>=1.21.1 in /usr/local/lib/python3.10/dist-packages (from requests<3,>=2->langchain) (2.2.3)
Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.10/dist-packages (from requests<3,>=2->langchain) (2024.8.30)
Requirement already satisfied: greenlet!=0.4.17 in /usr/local/lib/python3.10/dist-packages (from SQLAlchemy<3,>=1.4->langchain) (3.0.3)
Requirement already satisfied: anyio in /usr/local/lib/python3.10/dist-packages (from httpx<1,>=0.23.0->langsmith<0.2.0,>=0.1.17->langchain) (4.3.0)
Collecting httpcore==1.* (from httpx<1,>=0.23.0->langsmith<0.2.0,>=0.1.17->langchain)
  Downloading httpcore-1.0.5-py3-none-any.whl.metadata (20 kB)
Requirement already satisfied: sniffio in /usr/local/lib/python3.10/dist-packages (from httpx<1,>=0.23.0->langsmith<0.2.0,>=0.1.17->langchain) (1.3.1)

```

```

Downloading httpcore-1.0.5-py3-none-any.whl (77 kB)
77.9/77.9 kB 5.3 MB/s eta 0:00:00
Downloading jsonpatch-1.33-py2.py3-none-any.whl (12 kB)
Downloading orjson-3.10.7-cp310-cp310-manylinux_2_17_x86_64.manylinux2014_x86_64.whl (141 kB)
141.9/141.9 kB 11.8 MB/s eta 0:00:00
Downloading jsonpointer-3.0.0-py2.py3-none-any.whl (7.6 kB)
Downloading h11-0.14.0-py3-none-any.whl (58 kB)
58.3/58.3 kB 4.8 MB/s eta 0:00:00

```

```

Installing collected packages: tenacity, orjson, jsonpointer, h11, jsonpatch, httpcore, httpx, langsmith, langchain-core, langchain-t
Attempting uninstall: tenacity
  Found existing installation: tenacity 9.0.0
  Uninstalling tenacity-9.0.0:
    Successfully uninstalled tenacity-9.0.0
Successfully installed h11-0.14.0 httpcore-1.0.5 httpx-0.27.2 jsonpatch-1.33 jsonpointer-3.0.0 langchain-0.2.16 langchain-core-0.2.38

```

```
!pip install pinecone-client==2.2.4
```

```
!pip install pypdf
```



```

Collecting pinecone-client==2.2.4
  Downloading pinecone_client-2.2.4-py3-none-any.whl.metadata (7.8 kB)
Requirement already satisfied: requests>=2.19.0 in /usr/local/lib/python3.10/dist-packages (from pinecone-client==2.2.4) (2.32.3)
Requirement already satisfied: pyyaml>=5.4 in /usr/local/lib/python3.10/dist-packages (from pinecone-client==2.2.4) (6.0.2)
Collecting loguru>=0.5.0 (from pinecone-client==2.2.4)
  Downloading loguru-0.7.2-py3-none-any.whl.metadata (23 kB)
Requirement already satisfied: typing-extensions>=3.7.4 in /usr/local/lib/python3.10/dist-packages (from pinecone-client==2.2.4) (4.1
Collecting dnspython>=2.0.0 (from pinecone-client==2.2.4)
  Downloading dnspython-2.6.1-py3-none-any.whl.metadata (5.8 kB)
Requirement already satisfied: python-dateutil>=2.5.3 in /usr/local/lib/python3.10/dist-packages (from pinecone-client==2.2.4) (2.8.2)
Requirement already satisfied: urllib3>=1.21.1 in /usr/local/lib/python3.10/dist-packages (from pinecone-client==2.2.4) (2.0.7)
Requirement already satisfied: tqdm>=4.64.1 in /usr/local/lib/python3.10/dist-packages (from pinecone-client==2.2.4) (4.66.5)
Requirement already satisfied: numpy>=1.22.0 in /usr/local/lib/python3.10/dist-packages (from pinecone-client==2.2.4) (1.26.4)
Requirement already satisfied: six>=1.5 in /usr/local/lib/python3.10/dist-packages (from python-dateutil>=2.5.3->pinecone-client==2.2
Requirement already satisfied: charset-normalizer<4,>=2 in /usr/local/lib/python3.10/dist-packages (from requests>=2.19.0->pinecone-c
Requirement already satisfied: idna<4,>=2.5 in /usr/local/lib/python3.10/dist-packages (from requests>=2.19.0->pinecone-client==2.2.4)
Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.10/dist-packages (from requests>=2.19.0->pinecone-client=
  Downloading pinecone_client-2.2.4-py3-none-any.whl (179 kB)
179.4/179.4 kB 8.2 MB/s eta 0:00:00
Downloading dnspython-2.6.1-py3-none-any.whl (307 kB)
307.7/307.7 kB 21.7 MB/s eta 0:00:00
Downloading loguru-0.7.2-py3-none-any.whl (62 kB)
62.5/62.5 kB 6.4 MB/s eta 0:00:00
Installing collected packages: loguru, dnspython, pinecone-client
Successfully installed dnspython-2.6.1 loguru-0.7.2 pinecone-client-2.2.4
Collecting pypdf
  Downloading pypdf-4.3.1-py3-none-any.whl.metadata (7.4 kB)

```

Requirement already satisfied: typing\_extensions>=4.0 in /usr/local/lib/python3.10/dist-packages (from pypdf) (4.12.2)

Downloading pypdf-4.3.1-py3-none-any.whl (295 kB)

295.8/295.8 kB 7.9 MB/s eta 0:00:00

Installing collected packages: pypdf

Successfully installed pypdf-4.3.1

```
!pip install -q google-generativeai
```

```
!pip install langchain_community
```



Collecting langchain\_community

Downloading langchain\_community-0.2.16-py3-none-any.whl.metadata (2.7 kB)

Requirement already satisfied: PyYAML>=5.3 in /usr/local/lib/python3.10/dist-packages (from langchain\_community) (6.0.2)

Requirement already satisfied: SQLAlchemy<3,>=1.4 in /usr/local/lib/python3.10/dist-packages (from langchain\_community) (2.0.32)

Requirement already satisfied: aiohttp<4.0.0,>=3.8.3 in /usr/local/lib/python3.10/dist-packages (from langchain\_community) (3.10.5)

Collecting dataclasses-json<0.7,>=0.5.7 (from langchain\_community)

Downloading dataclasses\_json-0.6.7-py3-none-any.whl.metadata (25 kB)

Requirement already satisfied: langchain<0.3.0,>=0.2.16 in /usr/local/lib/python3.10/dist-packages (from langchain\_community) (0.2.16)

Requirement already satisfied: langchain-core<0.3.0,>=0.2.38 in /usr/local/lib/python3.10/dist-packages (from langchain\_community) (0.2.38)

Requirement already satisfied: langsmith<0.2.0,>=0.1.0 in /usr/local/lib/python3.10/dist-packages (from langchain\_community) (0.1.116)

Requirement already satisfied: numpy<2,>=1 in /usr/local/lib/python3.10/dist-packages (from langchain\_community) (1.26.4)

Requirement already satisfied: requests<3,>=2 in /usr/local/lib/python3.10/dist-packages (from langchain\_community) (2.32.3)

Requirement already satisfied: tenacity!=8.4.0,<9.0.0,>=8.1.0 in /usr/local/lib/python3.10/dist-packages (from langchain\_community) (8.2.3)

Requirement already satisfied: aiohappyeyeballs>=2.3.0 in /usr/local/lib/python3.10/dist-packages (from aiohttp<4.0.0,>=3.8.3->langchain\_community) (2.3.0)

Requirement already satisfied: aiosignal>=1.1.2 in /usr/local/lib/python3.10/dist-packages (from aiohttp<4.0.0,>=3.8.3->langchain\_community) (1.3.1)

Requirement already satisfied: attrs>=17.3.0 in /usr/local/lib/python3.10/dist-packages (from aiohttp<4.0.0,>=3.8.3->langchain\_community) (23.2.0)

Requirement already satisfied: frozenlist>=1.1.1 in /usr/local/lib/python3.10/dist-packages (from aiohttp<4.0.0,>=3.8.3->langchain\_community) (1.4.1)

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\_community) (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\_community) (1.9.7)

Requirement already satisfied: async-timeout<5.0,>=4.0 in /usr/local/lib/python3.10/dist-packages (from aiohttp<4.0.0,>=3.8.3->langchain\_community) (4.0.3)

Collecting marshmallow<4.0.0,>=3.18.0 (from dataclasses-json<0.7,>=0.5.7->langchain\_community)

Downloading marshmallow-3.22.0-py3-none-any.whl.metadata (7.2 kB)

Collecting typing-inspect<1,>=0.4.0 (from dataclasses-json<0.7,>=0.5.7->langchain\_community)

Downloading typing\_inspect-0.9.0-py3-none-any.whl.metadata (1.5 kB)

Requirement already satisfied: langchain-text-splitters<0.3.0,>=0.2.0 in /usr/local/lib/python3.10/dist-packages (from langchain<0.3.0,>=0.2.16->langchain\_community) (0.2.0)

Requirement already satisfied: pydantic<3,>=1 in /usr/local/lib/python3.10/dist-packages (from langchain<0.3.0,>=0.2.16->langchain\_community) (2.7.1)

Requirement already satisfied: jsonpatch<2.0,>=1.33 in /usr/local/lib/python3.10/dist-packages (from langchain-core<0.3.0,>=0.2.38->langchain\_community) (1.33)

Requirement already satisfied: packaging<25,>=23.2 in /usr/local/lib/python3.10/dist-packages (from langchain-core<0.3.0,>=0.2.38->langchain\_community) (23.2)

Requirement already satisfied: typing-extensions>=4.7 in /usr/local/lib/python3.10/dist-packages (from langchain-core<0.3.0,>=0.2.38->langchain\_community) (4.12.2)

Requirement already satisfied: httpx<1,>=0.23.0 in /usr/local/lib/python3.10/dist-packages (from langsmith<0.2.0,>=0.1.0->langchain\_community) (0.27.0)

Requirement already satisfied: orjson<4.0.0,>=3.9.14 in /usr/local/lib/python3.10/dist-packages (from langsmith<0.2.0,>=0.1.0->langchain\_community) (3.9.14)

Requirement already satisfied: charset-normalizer<4,>=2 in /usr/local/lib/python3.10/dist-packages (from requests<3,>=2->langchain\_community) (3.3.2)

Requirement already satisfied: idna<4,>=2.5 in /usr/local/lib/python3.10/dist-packages (from requests<3,>=2->langchain\_community) (3.6)

Requirement already satisfied: urllib3<3,>=1.21.1 in /usr/local/lib/python3.10/dist-packages (from requests<3,>=2->langchain\_community) (2.0.7)

Requirement already satisfied: certifi>=2017.4.17 in /usr/local/lib/python3.10/dist-packages (from requests<3,>=2->langchain\_community) (2024.7.4)

```
Requirement already satisfied: greenlet!=0.4.17 in /usr/local/lib/python3.10/dist-packages (from SQLAlchemy<3,>=1.4->langchain_community)
Requirement already satisfied: anyio in /usr/local/lib/python3.10/dist-packages (from httpx<1,>=0.23.0->langsmith<0.2.0,>=0.1.0->langchain_community)
Requirement already satisfied: httpcore==1.* in /usr/local/lib/python3.10/dist-packages (from httpx<1,>=0.23.0->langsmith<0.2.0,>=0.1.0->langchain_community)
Requirement already satisfied: sniffio in /usr/local/lib/python3.10/dist-packages (from httpx<1,>=0.23.0->langsmith<0.2.0,>=0.1.0->langchain_community)
Requirement already satisfied: h11<0.15,>=0.13 in /usr/local/lib/python3.10/dist-packages (from httpcore==1.*->httpx<1,>=0.23.0->langchain_community)
Requirement already satisfied: jsonpointer>=1.9 in /usr/local/lib/python3.10/dist-packages (from jsonpatch<2.0,>=1.33->langchain-core)
Requirement already satisfied: annotated-types>=0.4.0 in /usr/local/lib/python3.10/dist-packages (from pydantic<3,>=1->langchain<0.3.0)
Requirement already satisfied: pydantic-core==2.20.1 in /usr/local/lib/python3.10/dist-packages (from pydantic<3,>=1->langchain<0.3.0)
Collecting mpy-extensions>=0.3.0 (from typing-inspect<1,>=0.4.0->dataclasses-json<0.7,>=0.5.7->langchain_community)
  Downloading mpy_extensions-1.0.0-py3-none-any.whl.metadata (1.1 kB)
Requirement already satisfied: exceptiongroup in /usr/local/lib/python3.10/dist-packages (from anyio->httpx<1,>=0.23.0->langsmith<0.2.0)
Downloading langchain_community-0.2.16-py3-none-any.whl (2.3 MB)
  2.3/2.3 MB 41.9 MB/s eta 0:00:00
Downloading dataclasses_json-0.6.7-py3-none-any.whl (28 kB)
Downloading marshmallow-3.22.0-py3-none-any.whl (49 kB)
  49.3/49.3 kB 4.7 MB/s eta 0:00:00
Downloading typing_inspect-0.9.0-py3-none-any.whl (8.8 kB)
Downloading mpy_extensions-1.0.0-py3-none-any.whl (4.7 kB)
Installing collected packages: mpy-extensions, marshmallow, typing-inspect, dataclasses-json, langchain_community
Successfully installed dataclasses-json-0.6.7 langchain_community-0.2.16 marshmallow-3.22.0 mpy-extensions-1.0.0 typing-inspect-0.9.0
```

```
from langchain.llms import GooglePalm
from langchain.vectorstores import Pinecone
from langchain.text_splitter import RecursiveCharacterTextSplitter
from langchain.document_loaders import PyPDFDirectoryLoader
from langchain.embeddings import GooglePalmEmbeddings
from langchain.chains import RetrievalQA
from langchain.prompts import PromptTemplate
```

```
import pinecone
import os
import sys
```

```
➦ /usr/local/lib/python3.10/dist-packages/pinecone/index.py:4: TqdmExperimentalWarning: Using `tqdm.autonotebook.tqdm` in notebook mode
  from tqdm.autonotebook import tqdm
```

```
!mkdir pdfs
```

```
loader = PyPDFDirectoryLoader("pdfs")
data = loader.load()
```

```
print(data)
```

```
➞ []
```

```
text_splitter = RecursiveCharacterTextSplitter(  
    chunk_size=1000,  
    chunk_overlap=200  
)
```

```
text_chunks = text_splitter.split_documents(data)
```

```
len(text_chunks)
```

```
➞ 0
```

```
if text_chunks: # Check if text_chunks is not empty  
    print(text_chunks[0]) # Access the first element (index 0)  
else:  
    print("No text chunks were generated.")
```

```
➞ No text chunks were generated.
```

```
os.environ["GOOGLE_API_KEY"] = "AIzaSyAbMZq9CjBjqh2CkFi70pXp1ZwUjZPqB2k"
```

```
embedding = GooglePalmEmbeddings()
```

```
query_result = embedding.embed_query("Hello World")  
print(len(query_result))
```

```

WARNING:tornado.access:400 POST /v1beta/models/embedding-gecko-001:embedText?%24alt=json%3Benum-encoding%3Dint (127.0.0.1) 3877.37ms
WARNING:langchain_community.embeddings.google_palm:Retrying langchain_community.embeddings.google_palm.embed_with_retry.<locals>._emb
WARNING:tornado.access:400 POST /v1beta/models/embedding-gecko-001:embedText?%24alt=json%3Benum-encoding%3Dint (127.0.0.1) 831.41ms
WARNING:langchain_community.embeddings.google_palm:Retrying langchain_community.embeddings.google_palm.embed_with_retry.<locals>._emb
WARNING:tornado.access:400 POST /v1beta/models/embedding-gecko-001:embedText?%24alt=json%3Benum-encoding%3Dint (127.0.0.1) 958.48ms
WARNING:langchain_community.embeddings.google_palm:Retrying langchain_community.embeddings.google_palm.embed_with_retry.<locals>._emb
WARNING:tornado.access:400 POST /v1beta/models/embedding-gecko-001:embedText?%24alt=json%3Benum-encoding%3Dint (127.0.0.1) 806.74ms
WARNING:langchain_community.embeddings.google_palm:Retrying langchain_community.embeddings.google_palm.embed_with_retry.<locals>._emb
WARNING:tornado.access:400 POST /v1beta/models/embedding-gecko-001:embedText?%24alt=json%3Benum-encoding%3Dint (127.0.0.1) 832.37ms
WARNING:langchain_community.embeddings.google_palm:Retrying langchain_community.embeddings.google_palm.embed_with_retry.<locals>._emb
WARNING:tornado.access:400 POST /v1beta/models/embedding-gecko-001:embedText?%24alt=json%3Benum-encoding%3Dint (127.0.0.1) 807.24ms
WARNING:langchain_community.embeddings.google_palm:Retrying langchain_community.embeddings.google_palm.embed_with_retry.<locals>._emb
WARNING:tornado.access:400 POST /v1beta/models/embedding-gecko-001:embedText?%24alt=json%3Benum-encoding%3Dint (127.0.0.1) 856.62ms
WARNING:langchain_community.embeddings.google_palm:Retrying langchain_community.embeddings.google_palm.embed_with_retry.<locals>._emb
WARNING:tornado.access:400 POST /v1beta/models/embedding-gecko-001:embedText?%24alt=json%3Benum-encoding%3Dint (127.0.0.1) 781.56ms
WARNING:langchain_community.embeddings.google_palm:Retrying langchain_community.embeddings.google_palm.embed_with_retry.<locals>._emb
WARNING:tornado.access:400 POST /v1beta/models/embedding-gecko-001:embedText?%24alt=json%3Benum-encoding%3Dint (127.0.0.1) 808.78ms
WARNING:langchain_community.embeddings.google_palm:Retrying langchain_community.embeddings.google_palm.embed_with_retry.<locals>._emb
WARNING:tornado.access:400 POST /v1beta/models/embedding-gecko-001:embedText?%24alt=json%3Benum-encoding%3Dint (127.0.0.1) 931.95ms

```

-----  
**BadRequest** Traceback (most recent call last)

```

<ipython-input-24-6a8451b263db> in <cell line: 1>()
----> 1 query_result = embedding.embed_query("Hello World")
      2 print(len(query_result))

```

20 frames

```

/usr/local/lib/python3.10/dist-packages/google/ai/generative-language_v1beta/services/text_service/transport/rest.py in
__call__(self, request, retry, timeout, metadata)
    576         # subclass.
    577         if response.status_code >= 400:
--> 578             raise core_exceptions.from_http_response(response)
    579
    580         # Return the response

```

**BadRequest:** 400 POST <https://generativelanguage.googleapis.com/v1beta/models/embedding-gecko-001:embedText?%24alt=json%3Benum-encoding%3Dint>: API key expired. Please renew the API key.

```

PINECONE_API_KEY = os.environ.get('PINECONE_API_KEY', "f762c721-3ce8-447f-a2cc-86bd64d2de81")
PINECONE_API_ENV = os.environ.get("PINECONE_API_ENV", "gcp-starter")

```

```
pinecone.init(  
    api_key=PINECONE_API_KEY,  
    environment=PINECONE_API_ENV  
)
```

```
index_name="langchainbot"
```

```
docsearch = Pinecone.from_texts([t.page_content for t in text_chunks],embedding=embedding,index_name=index_name)
```

```
#docsearch = Pinecone.from_existing_index(index_name, embeddings)
```

```
query = "What is budget?"
```

```
docs = docsearch.similarity_search(query,k=4)
```

```
from langchain.llms import GooglePalm  
api_key = "AIzaSyAbMZq9CjBjqh2CkFi70pXp1ZwUjZPqB2k"
```

```
llm = GooglePalm(google_api_key=api_key,temperature=0.7)
```

```
QA = RetrievalQA.from_chain_type(llm=llm,chain_type="stuff",retriever=docsearch.as_retriever())
```

```
QA.run(query)
```

```
➞ /usr/local/lib/python3.10/dist-packages/langchain_core/_api/deprecation.py:117: LangChainDeprecationWarning: The function `run` was d  
    warn_deprecated(  
        'The Budget is a statement of the government's financial plans for the coming year.'
```

```
query1 = "what is green energy?"
```

```
QA.run(query1)
```

```
➞ 'Green energy is a term used to describe energy sources that are produced in a sustainable and environmentally friendly way.'
```

```
while True:
    user_input = input("Input Prompt:")
    if user_input=='exit':
        print("Exit...")
        sys.exit()
    if user_input=='':
        continue

    result = QA({'query':user_input})
    print("Answer : ",{result['result']})
```

```
⇒ Input Prompt:which year budget is this?
/usr/local/lib/python3.10/dist-packages/langchain_core/_api/deprecation.py:117: LangChainDeprecationWarning: The function `__call__`
    warn_deprecated(
Answer :  {'2023-24'}
```