

✓ Install Required Libraries

```
1 !pip install pypdf
2
```

Collecting pypdf
Downloading pypdf-5.9.0-py3-none-any.whl.metadata (7.1 kB)
Downloading pypdf-5.9.0-py3-none-any.whl (313 kB)
313.2/313.2 kB 1.6 MB/s eta 0:00:00
Installing collected packages: pypdf
Successfully installed pypdf-5.9.0

```
1 !pip install -U langchain
2 !pip install -U langchain-community
3 !pip install PyPDF2
```

Requirement already satisfied: charset-normalizer<4,>=2 in /usr/local/lib/python3.11/dist-packages (from requests<3,>=2->langchain) (3.10.0)
Requirement already satisfied: idna<4,>=2.5 in /usr/local/lib/python3.11/dist-packages (from requests<3,>=2->langchain) (3.10)
Requirement already satisfied: urllib3<3,>=1.21.1 in /usr/local/lib/python3.11/dist-packages (from requests<3,>=2->langchain) (2.5.0)
Requirement already satisfied: certifi<2017.4.17 in /usr/local/lib/python3.11/dist-packages (from requests<3,>=2->langchain) (2025.8.3)
Requirement already satisfied: greenlet<=1 in /usr/local/lib/python3.11/dist-packages (from SQLAlchemy<3,>=1.4->langchain) (3.2.3)
Requirement already satisfied: anyio in /usr/local/lib/python3.11/dist-packages (from httpx<1,>=0.23.0->langsmith>=0.1.17->langchain) (4.6.2)
Requirement already satisfied: httpcore==1.* in /usr/local/lib/python3.11/dist-packages (from httpx<1,>=0.23.0->langsmith>=0.1.17->langchain) (1.0.7)
Requirement already satisfied: h11<0.16 in /usr/local/lib/python3.11/dist-packages (from httpcore==1.*->httpx<1,>=0.23.0->langsmith>=0.1.17->langchain) (0.14.0)
Requirement already satisfied: jsonpointer<=1.9 in /usr/local/lib/python3.11/dist-packages (from jsonpatch<2.0,>=1.33->langchain-core<3.0.0,>=2.7.4->langchain) (2.0.1)
Requirement already satisfied: sniffio<=1.1 in /usr/local/lib/python3.11/dist-packages (from anyio->httpx<1,>=0.23.0->langsmith>=0.1.17->langchain) (1.0.1)
Requirement already satisfied: langchain-community in /usr/local/lib/python3.11/dist-packages (0.3.27)
Requirement already satisfied: langchain-core<1.0.0,>=0.3.66 in /usr/local/lib/python3.11/dist-packages (from langchain-community) (0.3.66)
Requirement already satisfied: langchain<1.0.0,>=0.3.26 in /usr/local/lib/python3.11/dist-packages (from langchain-community) (0.3.27)
Requirement already satisfied: SQLAlchemy<3,>=1.4 in /usr/local/lib/python3.11/dist-packages (from langchain-community) (2.0.42)
Requirement already satisfied: requests<3,>=2 in /usr/local/lib/python3.11/dist-packages (from langchain-community) (2.32.3)
Requirement already satisfied: PyYAML<=5.3 in /usr/local/lib/python3.11/dist-packages (from langchain-community) (6.0.2)
Requirement already satisfied: aiohttp<4.0.0,>=3.8.3 in /usr/local/lib/python3.11/dist-packages (from langchain-community) (3.12.15)
Requirement already satisfied: tenacity<=8.4.0,>=8.1.0 in /usr/local/lib/python3.11/dist-packages (from langchain-community) (8.5.0)
Requirement already satisfied: dataclasses-json<0.7,>=0.5.7 in /usr/local/lib/python3.11/dist-packages (from langchain-community) (0.6.7)
Requirement already satisfied: pydantic-settings<3.0.0,>=2.4.0 in /usr/local/lib/python3.11/dist-packages (from langchain-community) (2.4.0)
Requirement already satisfied: langsmith<=0.1.125 in /usr/local/lib/python3.11/dist-packages (from langchain-community) (0.1.125)
Requirement already satisfied: httpx-sse<1.0.0,>=0.4.0 in /usr/local/lib/python3.11/dist-packages (from langchain-community) (0.4.1)
Requirement already satisfied: numpy<=1.26.2 in /usr/local/lib/python3.11/dist-packages (from langchain-community) (2.0.2)
Requirement already satisfied: aiohappyeyeballs<=2.5.0 in /usr/local/lib/python3.11/dist-packages (from aiohttp<4.0.0,>=3.8.3->langchain-community) (2.5.0)
Requirement already satisfied: aiosignal<=1.4.0 in /usr/local/lib/python3.11/dist-packages (from aiohttp<4.0.0,>=3.8.3->langchain-community) (1.4.0)
Requirement already satisfied: attrs<=17.3.0 in /usr/local/lib/python3.11/dist-packages (from aiohttp<4.0.0,>=3.8.3->langchain-community) (25.3.0)
Requirement already satisfied: frozenlist<=1.1.1 in /usr/local/lib/python3.11/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/python3.11/dist-packages (from aiohttp<4.0.0,>=3.8.3->langchain-community) (6.0.0)
Requirement already satisfied: propcache<=0.2.0 in /usr/local/lib/python3.11/dist-packages (from aiohttp<4.0.0,>=3.8.3->langchain-community) (0.2.0)
Requirement already satisfied: yarl<=2.0,>=1.17.0 in /usr/local/lib/python3.11/dist-packages (from aiohttp<4.0.0,>=3.8.3->langchain-community) (1.17.0)
Requirement already satisfied: marshmallow<4.0.0,>=3.18.0 in /usr/local/lib/python3.11/dist-packages (from dataclasses-json<0.7,>=0.5.7->pydantic-settings<3.0.0,>=2.4.0->langchain) (3.22.0)
Requirement already satisfied: typing-inspect<1,>=0.4.0 in /usr/local/lib/python3.11/dist-packages (from dataclasses-json<0.7,>=0.5.7->pydantic-settings<3.0.0,>=2.4.0->langchain) (0.9.0)
Requirement already satisfied: langchain-text-splitters<1.0.0,>=0.3.9 in /usr/local/lib/python3.11/dist-packages (from langchain<1.0.0,>=0.3.26->langchain) (0.3.10)
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Requirement already satisfied: PyPDF2 in /usr/local/lib/python3.11/dist-packages (3.0.1)

✓ Upload File

```
1 from google.colab import files
2 uploaded = files.upload()
```

 Choose Files No file chosen

✓ Load the PDF file using PyPDFLoader

```
1 from langchain.document_loaders import PyPDFLoader
2
```


```
1 loader = PyPDFLoader('/content/GenAI_Basics_Reference (1).pdf')
2 documents = loader.load()
```

✓ Split the document into chunks

```
1 from langchain.text_splitter import RecursiveCharacterTextSplitter
2
3 text_splitter = RecursiveCharacterTextSplitter(
4     chunk_size=1000,
5     chunk_overlap=200
6 )
7
8 chunks = text_splitter.split_documents(documents)
```

✓ Print the total number of chunks created

```
1 print(f"Total number of document chunks created: {len(chunks)}")
```

 Total number of document chunks created: 25