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Solution.ipynb

Install the required packages by running the following command in the first cell of the notebook.

```
[1]: !pip install numpy pandas
!pip install pgvector
!pip install langchain langchain_google_vertexai transformers
!pip install google-cloud-aiplatform
!pip install psycopg2-binary
!pip install protobuf
!pip install shapely
```

Requirement already satisfied: numpy in /opt/conda/lib/python3.10/site-packages (2.1.3)
Requirement already satisfied: pandas in /opt/conda/lib/python3.10/site-packages (2.2.3)
Requirement already satisfied: python-dateutil>=2.8.2 in /opt/conda/lib/python3.10/site-packages (from pandas) (2.9.0.post0)
Requirement already satisfied: pytz>=2020.1 in /opt/conda/lib/python3.10/site-packages (from pandas) (2025.2)
Requirement already satisfied: tzdata>=2022.7 in /opt/conda/lib/python3.10/site-packages (from pandas) (2025.2)
Requirement already satisfied: six>=1.5 in /opt/conda/lib/python3.10/site-packages (from python-dateutil>=2.8.2->pandas) (1.17.0)
Collecting pgvector
 Downloading pgvector-0.4.1-py3-none-any.whl.metadata (18 kB)
Requirement already satisfied: numpy in /opt/conda/lib/python3.10/site-packages (from pgvector) (2.1.3)
Downloading pgvector-0.4.1-py3-none-any.whl (27 kB)
Installing collected packages: pgvector
Successfully installed pgvector-0.4.1
Collecting langchain
 Downloading langchain-0.3.25-py3-none-any.whl.metadata (7.8 kB)
Collecting langchain_google_vertexai
 Downloading langchain_google_vertexai-2.0.24-py3-none-any.whl.metadata (4.0 kB)
Collecting transformers
 Downloading transformers-4.52.3-py3-none-any.whl.metadata (40 kB)
Collecting langchain-core<1.0.0,>=0.3.58 (from langchain)
 Downloading langchain_core-0.3.62-py3-none-any.whl.metadata (5.8 kB)
Collecting langchain-text-splitters<1.0.0,>=0.3.8 (from langchain)
 Downloading langchain_text_splitters-0.3.8-py3-none-any.whl.metadata (1.9 kB)
Collecting langsmith<0.4,>=0.1.17 (from langchain)
 Downloading langsmith-0.3.43-py3-none-any.whl.metadata (15 kB)
Requirement already satisfied: pydantic<3.0.0,>=2.7.4 in /opt/conda/lib/python3.10/site-packages (from langchain) (2.11.0)
Requirement already satisfied: SQLAlchemy<3,>=1.4 in /opt/conda/lib/python3.10/site-packages (from langchain) (2.0.40)
Requirement already satisfied: requests<3,>=2 in /opt/conda/lib/python3.10/site-packages (from langchain) (2.32.3)
Requirement already satisfied: PyYAML>=5.3 in /opt/conda/lib/python3.10/site-packages (from langchain) (6.0.2)
Collecting async-timeouts<5.0.0,>=4.0.0 (from langchain)
 Downloading async_timeout-4.0.3-py3-none-any.whl.metadata (4.2 kB)
Collecting bottleneck<2.0.0,>=1.4.2 (from langchain_google_vertexai)
 Downloading bottleneck-1.5.0-cp310-cp310-manylinux_2_5_x86_64_manylinux1_x86_64_manylinux2_17_x86_64_manylinux2014_x86_64.whl.metadata (8.1 kB)
Collecting google-cloud-aiplatform<2.0.0,>=1.92.0 (from langchain_google_vertexai)
 Downloading google_cloud_aiplatform-1.95.0-py2.py3-none-any.whl.metadata (35 kB)
Requirement already satisfied: google-cloud-storage<3.0.0,>=2.18.0 in /opt/conda/lib/python3.10/site-packages (from langchain_google_vertexai) (2.19.0)
Collecting httpx<0.29.0,>=0.28.0 (from langchain_google_vertexai)
 Downloading httpx-0.28.1-py3-none-any.whl.metadata (7.1 kB)
Collecting httpx-sse<0.5.0,>=0.4.0 (from langchain_google_vertexai)
 Downloading httpx_sse-0.4.0-py3-none-any.whl.metadata (9.0 kB)
Collecting httpx-sse<0.5.0.0,>=2.8.6 (from langchain_google_vertexai)
 Downloading httpx-sse-0.5.0.0-py3-none-any.whl.metadata (9.0 kB)
Collecting numexpr<3.0.0,>=2.8.6 (from langchain_google_vertexai)
 Downloading numexpr-2.10.2-cp310-cp310-manylinux_2_27_x86_64_manylinux2_28_x86_64.whl.metadata (8.1 kB)
Requirement already satisfied: pyarrow<20.0.0,>=19.0.1 in /opt/conda/lib/python3.10/site-packages (from langchain_google_vertexai) (19.0.1)
Collecting validators<1,>=0.22.0 (from langchain_google_vertexai)
 Downloading validators-0.35.0-py3-none-any.whl.metadata (3.9 kB)
Requirement already satisfied: filelock in /opt/conda/lib/python3.10/site-packages (from transformers) (3.18.0)
Collecting huggingface-hub<1.0,>=0.30.0 (from transformers)
 Downloading huggingface_hub-0.32.2-py3-none-any.whl.metadata (14 kB)
Requirement already satisfied: numpy>=1.17 in /opt/conda/lib/python3.10/site-packages (from transformers) (2.1.3)
Requirement already satisfied: packaging>=20.0 in /opt/conda/lib/python3.10/site-packages (from transformers) (24.2)
Collecting regex!=2019.12.17 (from transformers)
 Downloading regex-2024.11.6-cp310-cp310-manylinux_2_17_x86_64_manylinux2014_x86_64.whl.metadata (40 kB)
Collecting tokenizers<0.22,>=0.21 (from transformers)
 Downloading tokenizers-0.21.1-cp39abi3-manylinux_2_17_x86_64_manylinux2014_x86_64.whl.metadata (6.8 kB)
Collecting safetensors=>0.4.3 (from transformers)
 Downloading safetensors-0.5.3-cp38abi3-manylinux_2_17_x86_64_manylinux2014_x86_64.whl.metadata (3.8 kB)
Requirement already satisfied: tqdm>=4.27 in /opt/conda/lib/python3.10/site-packages (from transformers) (4.67.1)
Requirement already satisfied: google-api-core<2.0.0,>=2.1.4,<2.2.4,<2.3.4,<2.4.4,<2.5.4,<2.6.4,<2.7.4,<3.0.0,>=1.34.1 in /opt/conda/lib/python3.10/site-packages (from google-api-core[grpc]<2.0.0,>=2.1.4,<2.2.4,<2.3.4,<2.4.4,<2.5.4,<2.6.4,<2.7.4,<3.0.0,>=1.34.1->google-cloud-aiplatform<2.0.0,>=1.92.0->langchain_google_vertexai) (2.24.2)
Requirement already satisfied: google-auth<3.0.0,>=2.14.1 in /opt/conda/lib/python3.10/site-packages (from google-cloud-aiplatform<2.0.0,>=1.92.0->langchain_google_vertexai) (2.38.0)
Requirement already satisfied: proto-plus<2.0.0,>=1.22.3 in /opt/conda/lib/python3.10/site-packages (from google-cloud-aiplatform<2.0.0,>=1.92.0->langchain_google_vertexai) (1.26.1)
Requirement already satisfied: protobuf!=4.21.0,>=4.21.1,!=4.21.2,!=4.21.3,!=4.21.4,!=4.21.5,<7.0.0,>=3.20.2 in /opt/conda/lib/python3.10/site-packages (from google-cloud-aiplatform<2.0.0,>=1.92.0->langchain_google_vertexai) (3.20.3)
Requirement already satisfied: google-cloud-bigquery!=3.20.0,>=4.0.0,>=1.15.0 in /opt/conda/lib/python3.10/site-packages (from google-cloud-aiplatform<2.0.0,>=1.92.0->langchain_google_vertexai) (3.31.0)
Requirement already satisfied: google-cloud-resource-manager<3.0.0,>=1.3.3 in /opt/conda/lib/python3.10/site-packages (from google-cloud-aiplatform<2.0.0,>=1.92.0->langchain_google_vertexai) (1.14.2)
Requirement already satisfied: shapely<3.0.0 in /opt/conda/lib/python3.10/site-packages (from google-cloud-aiplatform<2.0.0,>=1.92.0->langchain_google_vertexai) (2.0.7)
Collecting google-genai<2.0.0,>=1.0.0 (from google-cloud-aiplatform<2.0.0,>=1.92.0->langchain_google_vertexai)
 Downloading google_genai-1.17.0-py3-none-any.whl.metadata (35 kB)
Requirement already satisfied: typing-extensions in /opt/conda/lib/python3.10/site-packages (from google-cloud-aiplatform<2.0.0,>=1.92.0->langchain_google_vertexai) (4.13.0)
Requirement already satisfied: docstring-parser<1 in /opt/conda/lib/python3.10/site-packages (from google-cloud-aiplatform<2.0.0,>=1.92.0->langchain_google_vertexai) (0.16)
Requirement already satisfied: google-cloud-core<3.0.dev,>=2.3.0 in /opt/conda/lib/python3.10/site-packages (from google-cloud-storage<3.0.0,>=2.18.0->langchain_google_vertexai) (2.4.3)
Requirement already satisfied: google-resumable-media>=2.7.2 in /opt/conda/lib/python3.10/site-packages (from google-cloud-storage<3.0.0,>=2.18.0->langchain_google_vertexai) (2.7.2)
Requirement already satisfied: google-crc32c<2.0.dev,>=1.0 in /opt/conda/lib/python3.10/site-packages (from google-cloud-storage<3.0.0,>=2.18.0->langchain_google_vertexai) (1.7.1)
Requirement already satisfied: anyio in /opt/conda/lib/python3.10/site-packages (from httpx<0.29.0,>=0.28.0->langchain_google_vertexai) (4.9.0)
Requirement already satisfied: certifi in /opt/conda/lib/python3.10/site-packages (from https://<0.29.0,>=0.28.0->langchain_google_vertexai) (2025.1.31)
Requirement already satisfied: tqdm>=4.27 in /opt/conda/lib/python3.10/site-packages (from transformers) (4.67.1)
Requirement already satisfied: google-api-core<2.0.0,>=2.1.4,<2.2.4,<2.3.4,<2.4.4,<2.5.4,<2.6.4,<2.7.4,<3.0.0,>=1.34.1 in /opt/conda/lib/python3.10/site-packages (from google-api-core[grpc]<2.0.0,>=2.1.4,<2.2.4,<2.3.4,<2.4.4,<2.5.4,<2.6.4,<2.7.4,<3.0.0,>=1.34.1->google-cloud-aiplatform<2.0.0,>=1.92.0->langchain_google_vertexai) (2.24.2)
Requirement already satisfied: google-auth<3.0.0,>=2.14.1 in /opt/conda/lib/python3.10/site-packages (from google-cloud-aiplatform<2.0.0,>=1.92.0->langchain_google_vertexai) (2.38.0)
Requirement already satisfied: proto-plus<2.0.0,>=1.22.3 in /opt/conda/lib/python3.10/site-packages (from google-cloud-aiplatform<2.0.0,>=1.92.0->langchain_google_vertexai) (1.26.1)
Requirement already satisfied: protobuf!=4.21.0,>=4.21.1,!=4.21.2,!=4.21.3,!=4.21.4,!=4.21.5,<7.0.0,>=3.20.2 in /opt/conda/lib/python3.10/site-packages (from google-cloud-aiplatform<2.0.0,>=1.92.0->langchain_google_vertexai) (3.20.3)
Requirement already satisfied: google-cloud-bigquery!=3.20.0,>=4.0.0,>=1.15.0 in /opt/conda/lib/python3.10/site-packages (from google-cloud-aiplatform<2.0.0,>=1.92.0->langchain_google_vertexai) (3.31.0)
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Requirement already satisfied: shapely<3.0.0 in /opt/conda/lib/python3.10/site-packages (from google-cloud-aiplatform<2.0.0,>=1.92.0->langchain_google_vertexai) (2.0.7)

Simple 0 5 1 ⚡ Python 3 (ipykernel) (Local) | Idle

Mode: Command ⚡ Ln 1, Col 1 Solution.ipynb 2 🔍