

generative-ai-jupyterlab

e2-standard-2

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Name
generative-ai
notebook_template.ipynb
Solution.ipynb

[ ]: Install the latest version of Google Cloud Discovery Engine
pip install --upgrade google-cloud-discoveryengine humanize

Collecting google-cloud-discoveryengine
  Downloading google_cloud_discoveryengine-0.13.8-py3-none-any.whl.metadata (9.4 kB)
Requirement already satisfied: humanize in /opt/conda/lib/python3.10/site-packages (4.12.2)
Collecting humanize
  Downloading humanize-4.12.3-py3-none-any.whl.metadata (7.8 kB)
Requirement already satisfied: google-api-core!=2.0.*,!=2.1.*,!=2.10.*,!=2.2.*,!=2.3.*,!=2.4.*,!=2.5.*,!=2.6.*,!=2.7.*,!=2.8.*,!=2.9.*,<3.0.0,>=1.34.1 in /opt/conda/lib/python3.10/site-packages (from google-cloud-discoveryengine[grpc]!=2.0.*,!=2.1.*,!=2.10.*,!=2.2.*,!=2.3.*,!=2.4.*,!=2.5.*,!=2.6.*,!=2.7.*,!=2.8.*,!=2.9.*,<3.0.0,>=1.34.1->google-cloud-discoveryengine (2.24.2))
Requirement already satisfied: google-auth!=2.24.0,!=2.25.0,<3.0.0,>=2.14.1 in /opt/conda/lib/python3.10/site-packages (from google-cloud-discoveryengine) (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-discoveryengine) (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-discoveryengine) (3.20.3)
Requirement already satisfied: googleapis-common-protos<2.0.0,>=1.56.2 in /opt/conda/lib/python3.10/site-packages (from google-api-core!=2.0.*,!=2.1.*,!=2.10.*,!=2.2.*,!=2.3.*,!=2.4.*,!=2.5.*,!=2.6.*,!=2.7.*,!=2.8.*,!=2.9.*,<3.0.0,>=1.34.1->google-api-core[grpc]!=2.0.*,!=2.1.*,!=2.10.*,!=2.2.*,!=2.3.*,!=2.4.*,!=2.5.*,!=2.6.*,!=2.7.*,!=2.8.*,!=2.9.*,<3.0.0,>=1.34.1->google-cloud-discoveryengine (1.69.2)
Requirement already satisfied: requests<3.0.0,>=2.18.0 in /opt/conda/lib/python3.10/site-packages (from google-api-core!=2.0.*,!=2.1.*,!=2.10.*,!=2.2.*,!=2.3.*,!=2.4.*,!=2.5.*,!=2.6.*,!=2.7.*,!=2.8.*,!=2.9.*,<3.0.0,>=1.34.1->google-api-core[grpc]!=2.0.*,!=2.1.*,!=2.10.*,!=2.2.*,!=2.3.*,!=2.4.*,!=2.5.*,!=2.6.*,!=2.7.*,!=2.8.*,!=2.9.*,<3.0.0,>=1.34.1->google-cloud-discoveryengine (1.69.2)
Requirement already satisfied: requests<3.0.0,>=2.18.0 in /opt/conda/lib/python3.10/site-packages (from google-api-core!=2.0.*,!=2.1.*,!=2.10.*,!=2.2.*,!=2.3.*,!=2.4.*,!=2.5.*,!=2.6.*,!=2.7.*,!=2.8.*,!=2.9.*,<3.0.0,>=1.34.1->google-api-core[grpc]!=2.0.*,!=2.1.*,!=2.10.*,!=2.2.*,!=2.3.*,!=2.4.*,!=2.5.*,!=2.6.*,!=2.7.*,!=2.8.*,!=2.9.*,<3.0.0,>=1.34.1->google-cloud-discoveryengine (1.69.2)
Requirement already satisfied: grpcio<2.0dev,>=1.33.2 in /opt/conda/lib/python3.10/site-packages (from google-api-core[grpc]!=2.0.*,!=2.1.*,!=2.10.*,!=2.2.*,!=2.3.*,!=2.4.*,!=2.5.*,!=2.6.*,!=2.7.*,!=2.8.*,!=2.9.*,<3.0.0,>=1.34.1->google-cloud-discoveryengine (1.71.0)
Requirement already satisfied: grpcio-status<2.0.dev0,>=1.33.2 in /opt/conda/lib/python3.10/site-packages (from google-api-core[grpc]!=2.0.*,!=2.1.*,!=2.2.*,!=2.3.*,!=2.4.*,!=2.5.*,!=2.6.*,!=2.7.*,!=2.8.*,!=2.9.*,<3.0.0,>=1.34.1->google-cloud-discoveryengine (1.49.0rc1)
Requirement already satisfied: cachetools<6.0,>=2.0.0 in /opt/conda/lib/python3.10/site-packages (from google-auth!=2.24.0,!=2.25.0,<3.0.0,>=2.14.1->google-cloud-discoveryengine) (5.5.2)
Requirement already satisfied: pyasn1-modules>=0.2.1 in /opt/conda/lib/python3.10/site-packages (from google-auth!=2.24.0,!=2.25.0,<3.0.0,>=2.14.1->google-cloud-discoveryengine) (0.4.2)
Requirement already satisfied: rsa<5,>=3.1.4 in /opt/conda/lib/python3.10/site-packages (from google-auth!=2.24.0,!=2.25.0,<3.0.0,>=2.14.1->google-cloud-discoveryengine) (4.9)
Requirement already satisfied: pyasn1<0.7.0,>=0.6.1 in /opt/conda/lib/python3.10/site-packages (from pyasn1-modules>=0.2.1->google-auth!=2.24.0,!=2.25.0,<3.0.0,>=2.14.1->google-cloud-discoveryengine) (0.6.1)
Requirement already satisfied: charset_normalizer<4,>=2 in /opt/conda/lib/python3.10/site-packages (from requests<3.0.0,>=2.18.0->google-api-core!=2.0.*,!=2.1.*,!=2.2.*,!=2.3.*,!=2.4.*,!=2.5.*,!=2.6.*,!=2.7.*,!=2.8.*,!=2.9.*,<3.0.0,>=1.34.1->google-api-core[grpc]!=2.0.*,!=2.1.*,!=2.10.*,!=2.2.*,!=2.3.*,!=2.4.*,!=2.5.*,!=2.6.*,!=2.7.*,!=2.8.*,!=2.9.*,<3.0.0,>=1.34.1->google-cloud-discoveryengine (3.4.1)
Requirement already satisfied: idna<4,>=2.5 in /opt/conda/lib/python3.10/site-packages (from requests<3.0.0,>=2.18.0->google-api-core!=2.0.*,!=2.1.*,!=2.2.*,!=2.3.*,!=2.4.*,!=2.5.*,!=2.6.*,!=2.7.*,!=2.8.*,!=2.9.*,<3.0.0,>=1.34.1->google-api-core[grpc]!=2.0.*,!=2.1.*,!=2.10.*,!=2.2.*,!=2.3.*,!=2.4.*,!=2.5.*,!=2.6.*,!=2.7.*,!=2.8.*,!=2.9.*,<3.0.0,>=1.34.1->google-cloud-discoveryengine (3.10)
Requirement already satisfied: urllib3<3,>=1.21.1 in /opt/conda/lib/python3.10/site-packages (from requests<3.0.0,>=2.18.0->google-api-core!=2.0.*,!=2.1.*,!=2.2.*,!=2.3.*,!=2.4.*,!=2.5.*,!=2.6.*,!=2.7.*,!=2.8.*,!=2.9.*,<3.0.0,>=1.34.1->google-api-core[grpc]!=2.0.*,!=2.1.*,!=2.10.*,!=2.2.*,!=2.3.*,!=2.4.*,!=2.5.*,!=2.6.*,!=2.7.*,!=2.8.*,!=2.9.*,<3.0.0,>=1.34.1->google-cloud-discoveryengine (1.26.20)
Requirement already satisfied: certifi>=2017.4.17 in /opt/conda/lib/python3.10/site-packages (from requests<3.0.0,>=2.18.0->google-api-core!=2.0.*,!=2.1.*,!=2.2.*,!=2.3.*,!=2.4.*,!=2.5.*,!=2.6.*,!=2.7.*,!=2.8.*,!=2.9.*,<3.0.0,>=1.34.1->google-api-core[grpc]!=2.0.*,!=2.1.*,!=2.10.*,!=2.2.*,!=2.3.*,!=2.4.*,!=2.5.*,!=2.6.*,!=2.7.*,!=2.8.*,!=2.9.*,<3.0.0,>=1.34.1->google-cloud-discoveryengine) (2025.1.31)
Downloading google_cloud_discoveryengine-0.13.8-py3-none-any.whl (3.0 MB)
3.0/3.0 MB 38.7 MB/s eta 0:00:00
Downloading humanize-4.12.3-py3-none-any.whl (128 kB)
Installing collected packages: humanize, google-cloud-discoveryengine
  Attempting uninstall: humanize
    Found existing installation: humanize 4.12.2
    Uninstalling humanize-4.12.2:
      Successfully uninstalled humanize-4.12.2
Successfully installed google-cloud-discoveryengine-0.13.8 humanize-4.12.3
Note: you may need to restart the kernel to use updated packages.

[ ]: Setup the helper methods
[1]: import humanize
import time
import re
from typing import List, Optional

from google.api_core.client_options import ClientOptions
from google.cloud import discoveryengine_v1beta as discoveryengine

def _call_list_documents(
    project_id: str, location: str, datastore_id: str, page_token: Optional[str] = None
) -> discoveryengine.ListDocumentsResponse:
    """Build the List Docs Request payload."""
    client_options = (
        ClientOptions(
            api_endpoint=f'{location}-discoveryengine.googleapis.com'
        )
        if location != 'global'
        else None
    )
    client = discoveryengine.DocumentServiceClient(
        client_options=client_options
    )
    request = discoveryengine.ListDocumentsRequest(
        parent=client.branch_path(
            project_id, location, datastore_id, 'default_branch'
        ),
        page_size=1000,
        page_token=page_token,
    )
    return client.list_documents(request=request)

def list_documents(
    project_id: str, location: str, datastore_id: str, rate_limit: int = 1
) -> List[discoveryengine.Document]:
    """Gets a list of docs in a datastore."""
    res = _call_list_documents(project_id, location, datastore_id)

    # setup the List with the first batch of docs
    docs = res.documents

    while res.next_page_token:
        # implement a rate_limit to prevent quota exhaustion
        time.sleep(rate_limit)

        res = _call_list_documents(
            project_id, location, datastore_id, res.next_page_token
        )

```

```

        )
        docs.extend(res.documents)

    return docs

def list_indexed_urls(
    docs: Optional[List[discoveryengine.Document]] = None,
    project_id: str = None,
    location: str = None,
    datastore_id: str = None,
) -> List[str]:
    """Get the list of docs in data store, then parse to only urls."""
    if not docs:
        docs = list_documents(project_id, location, datastore_id)
    urls = [doc.content.uri for doc in docs]

    return urls

def search_url(urls: List[str], url: str) -> None:
    """Searches a url in a list of urls."""
    for item in urls:
        if url in item:
            print(item)

def search_doc_id(
    doc_id: str,
    docs: Optional[List[discoveryengine.Document]] = None,
    project_id: str = None,
    location: str = None,
    datastore_id: str = None,
) -> None:
    """Searches a doc_id in a list of docs."""
    if not docs:
        docs = list_documents(project_id, location, datastore_id)

    doc_found = False
    for doc in docs:
        if doc.parent_document_id == doc_id:
            doc_found = True
            print(doc)

    if not doc_found:
        print(f"Document not found for provided Doc ID: '{doc_id}'")

def estimate_data_store_size(
    urls: Optional[List[str]] = None,
    docs: Optional[List[discoveryengine.Document]] = None,
    project_id: str = None,
    location: str = None,
    datastore_id: str = None,
) -> None:
    """For Advanced Website Indexing data stores only."""
    if not urls:
        if not docs:
            docs = list_documents(project_id, location, datastore_id)
            urls = list_indexed_urls(docs=docs)

    # Filter to only include website urls.
    urls = list(filter(lambda x: re.search(r"https://", x), urls))

    if not urls:
        print(
            "No urls found. Make sure this data store is for websites with advanced indexing."
        )
        return

    # For website indexing, each page is calculated as 500KB.
    size = len(urls) * 500_000
    print(f"Estimated data store size: {humanize.naturalsize(size)}")

PENDING_MESSAGE = """
No docs found.\n\nIt's likely one of the following issues: \n [1] Your data store is not finished indexing. \n [2] Your data store failed indexing.\n If you just added your data store, it can take up to 4 hours before it will become available.
"""

```

```
*[3]: # Go Create New Data Store
# Once Created and the data is in the Data Store Google should start Auto Indexing it
```

```
[ ]: # To check if it is indexing it or alr indexing it do the following:
```

```
[5]: # Set variable
PROJECT = [gcloud config get-value project
project_id = PROJECT[0]
location = "global" # Options: "global", "us", "eu"
datastore_id = "cymbaldatastore_1748410789208"
```

```
[7]: # Run this to check
# Failed or inprocess indexing
docs = list_documents(project_id, location, datastore_id)

if len(docs) == 0:
    print(PENDING_MESSAGE)
else:
    SUCCESS_MESSAGE = f"""
Success! 🎉\n
Your indexing is complete.\n
Your index contains {len(docs)} documents.
"""

    print(SUCCESS_MESSAGE)
```

No docs found.

It's likely one of the following issues:
[1] Your data store is not finished indexing.
[2] Your data store failed indexing.
[3] Your data store is for website data without advanced indexing.

If you just added your data store, it can take up to 4 hours before it will become available.

Final: # Run this to check

```

[...]: docs = list_documents(project_id, location, datastore_id)

if len(docs) == 0:
    print(PENDING_MESSAGE)
else:
    SUCCESS_MESSAGE = f"""
Success! 🎉\n
Your indexing is complete.\n
Your index contains {len(docs)} documents.
"""

    print(SUCCESS_MESSAGE)

# You Should See This
# Success!
# Your indexing is complete.
# Your index contains 79 documents.

Success! 🎉

Your indexing is complete.

Your index contains 79 documents.

[ ]: # List Documents
# List all the documents for a given Data Store ID

[11]: docs = list_documents(project_id, location, datastore_id)
docs[0]

[11]: name: "projects/849488826744/locations/global/collections/default_collection/dataStores/cymbaldatastore_1748410789208/branches/0/documents/01c3140622cfed9a86572e550ed049a0"
id: "01c3140622cfed9a86572e550ed049a0"
schema_id: "default_schema"
struct_data {
}
parent_document_id: "01c3140622cfed9a86572e550ed049a0"
content {
    mime_type: "text/html"
    uri: "gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/testing.html"
}
index_time {
    seconds: 1748411326
    nanos: 108496437
}
index_status {
    index_time {
        seconds: 1748411326
        nanos: 108496437
    }
}

[ ]: # Search Data Store by Doc ID
# Let's search through all docs in a given Data Store and find a specific Doc ID.
# In the following command, replace the placeholder_document_id with the value of parent_document_id from the last output.

[14]: # document_id = "placeholder_document_id"
# search_doc_id(document_id, docs=docs)

document_id = "01c3140622cfed9a86572e550ed049a0"
search_doc_id(document_id, docs=docs)

name: "projects/849488826744/locations/global/collections/default_collection/dataStores/cymbaldatastore_1748410789208/branches/0/documents/01c3140622cfed9a86572e550ed049a0"
id: "01c3140622cfed9a86572e550ed049a0"
schema_id: "default_schema"
struct_data {
}
parent_document_id: "01c3140622cfed9a86572e550ed049a0"
content {
    mime_type: "text/html"
    uri: "gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/testing.html"
}
index_time {
    seconds: 1748411326
    nanos: 108496437
}
index_status {
    index_time {
        seconds: 1748411326
        nanos: 108496437
    }
}

[ ]: # List Indexed URLs
# Run the following code snippet in the next notebook cell, to retrieve a indexed URL.

[15]: urls = list_indexed_urls(docs=docs)
urls[0]

[15]: 'gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/testing.html'

[ ]: # Search Indexed URLs
# Run the following code snippet in the next notebook cell,
# to search for a specific URL within a list of indexed URLs.

[16]: search_url(urls, "gs://cloud-samples-data/dialogflow-cx/arc-lifeblood")

gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/testing.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/strategy.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/making-blood-components.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/making-your-donation.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/products.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/high-ferritin.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/forms.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/blood-for-transfusion.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/how-you-can-give-life.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/transplantation-immunogenetics-services.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/blood.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/prepare-and-aftercare.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/our-strategy.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/our-history.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/our-services.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/about.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/iron-deficiency.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/iron-health.html

```

```
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/donor-centre.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/fainting.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/reasons-for-a-transfusion.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/sexual-activity.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/learn-about-blood.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/avoid-a-transfusion.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/relax-when-giving-blood.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/our-research.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/milk-research.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/donating-after-travelling.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/trending-research.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/become-a-milk-donor.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/milk-donation-guide.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/serum-eyedrops.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/resources.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/training.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/resource-library.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/blood-types.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/milk.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/matching-blood-groups.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/parents.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/blood-stem-cell.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/anaemia.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/information-for-suppliers.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/news-and-stories.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/COVID-19-vaccine.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/faq.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/who-we-are.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/receiving-a-transfusion.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/why-donate-blood.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/donate-as-a-group.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/what-happens-to-your-blood.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/our-people.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/organ-and-tissue.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/inventory-management.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/plasma.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/featured-resources.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/types-of-transfusions.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/careers.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/partner-with-us.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/eligibility.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/index.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/red-cell-reference.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/privacy.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/know-the-risks.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/global-search-footer.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/program.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/learn.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/blood-testing-and-safety.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/patients.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/health-professionals.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/disclaimer.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/microbiome.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/clinical-practice.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/quiz.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/safety.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/coronavirus.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/start-quiz.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/meet-our-researchers.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/contact.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/platelets.html
```

```
[ ]: # Run the below code in the notebook cell, and should have similar output
```

```
[17]: search_url(urls, "dialogflow-cx")

gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/testing.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/strategy.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/making-blood-components.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/making-your-donation.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/products.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/high-ferritin.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/forms.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/blood-for-transfusion.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/how-you-can-give-life.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/transplantation-immunogenetics-services.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/blood.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/prepare-and-aftercare.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/our-strategy.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/our-history.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/our-services.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/about.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/iron-deficiency.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/iron-health.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/donor-centre.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/fainting.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/reasons-for-a-transfusion.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/sexual-activity.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/learn-about-blood.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/avoid-a-transfusion.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/relax-when-giving-blood.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/our-research.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/milk-research.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/donating-after-travelling.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/trending-research.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/become-a-milk-donor.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/milk-donation-guide.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/serum-eyedrops.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/resources.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/training.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/resource-library.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/blood-types.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/milk.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/matching-blood-groups.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/parents.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/blood-stem-cell.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/anaemia.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/information-for-suppliers.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/news-and-stories.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/COVID-19-vaccine.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/faq.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/who-we-are.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/receiving-a-transfusion.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/why-donate-blood.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/donate-as-a-group.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/what-happens-to-your-blood.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/our-people.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/organ-and-tissue.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/inventory-management.html
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gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/plasma.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/featured-resources.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/types-of-transfusions.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/careers.html
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gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/global-search-footer.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/program.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/learn.html
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gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/patients.html
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gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/meet-our-researchers.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/contact.html
gs://cloud-samples-data/dialogflow-cx/arc-lifeblood/platelets.html
```

Simple 0 1 Python 3 (ipykernel) (Local) | Idle Mode: Command Ln 1, Col 1 Solution.ipynb 2