

Document Q&A Chatbot

A document-based question-answering system built using **n8n**, designed to let users interact with their PDF files conversationally. The workflow automatically fetches a document from **Google Drive**, splits it into manageable chunks, generates embeddings using a **Hugging Face** model, stores them in **Pinecone** and retrieves relevant content during chat using the **OpenAI Chat** model.

Features

- Fetches and processes PDF files directly from Google Drive.
- Splits documents into smaller text chunks using a recursive character splitter.
- Generates sentence embeddings via Hugging Face models.
- Stores and retrieves document vectors efficiently using Pinecone.
- Provides context-aware Q&A responses powered by the OpenAI Chat model.
- Fully automated workflow built in n8n - easy to customize and extend.

Repository Contents

- **PDF Q&A with AI.json** - exported n8n workflow file.
- **architecture.png** - architecture diagram showing the data flow.

Prerequisites

To run this workflow, you will need:

- Pinecone account & index.
- Hugging Face API key (for embeddings).
- OpenAI API key (for the chat model).
- Google Drive API access or a service account for Drive integration.
- An n8n instance (self-hosted or cloud) to import and execute the workflow.

Quick Setup

1. **Clone the repository**
 - `git clone https://github.com/marshall-xd/document-qna-n8n.git`
 - `cd document-qna-n8n`
2. **Import the workflow**
 - Open your n8n instance.
 - Go to *Workflows* → *Import*.
 - Upload **PDF Q&A with AI.json**.
3. **Set up environment variables**
 - Add your API keys and credentials for Pinecone, Hugging Face, OpenAI and Google Drive.
4. **Run the workflow**
 - Click **Execute Workflow** to load the document into the vector store.
 - Use the **Chat** trigger to start asking questions about the uploaded PDF.

Troubleshooting

- **Embedding dimension mismatch:**

If you see an error like

Vector dimension 768 does not match the dimension of the index 1536

It means your Pinecone index was created with a different vector size than your embedding model.

Fix:

- Recreate the Pinecone index using the correct dimension (e.g., 768).
 - Or switch to the same embedding model that was used during index creation.
- **Important:**
Remove any API keys or credentials before sharing your workflow publicly.

Future Improvements

- Add support for multiple documents and dynamic index creation.