

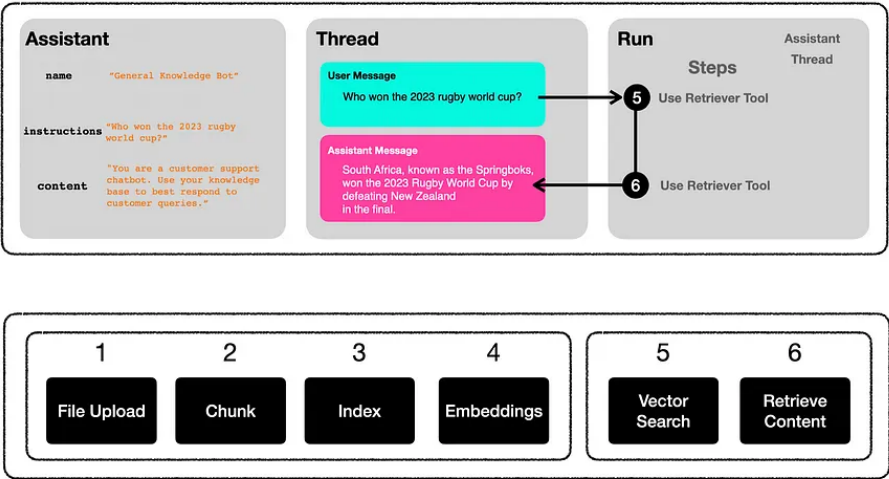
Chatbot using OpenAI's Assistant API

Introduction

This document provides an overview of a customer support chatbot designed to answer queries using a specific PDF file as a knowledge base. The chatbot is developed using OpenAI's GPT-3.5 model and leverages the latest advancements in natural language processing to provide accurate and contextually relevant responses.

Design

OpenAI Assistant API with Retriever Tool



The chatbot system is designed using Python and involves integration with OpenAI's API. The process is outlined below in a tabular format:

Step	Process	Description
1	API Key Configuration	Configure OpenAI API key using environment variables for secure access.
2	File Upload	Implement file upload mechanism to retrieve data from a specified PDF document.
3	Assistant Creation	Create an AI assistant using OpenAI's GPT-3.5 model, set up to utilize the uploaded file as a knowledge base.
4	Message Handling	Develop a function to handle sending user queries and receiving responses from the assistant, with appropriate formatting.
5	Response Retrieval	Implement a system to retrieve and display responses from the assistant in a conversational format.

Implementation

To set up and run the chatbot, follow these steps:

1. Create a Python virtual environment and activate it:

```
'''
```

```
python3 -m venv venv
```

```
. venv/bin/activate
```

```
'''
```

2. Install necessary packages:

```
'''
```

```
pip install openai python-dotenv
```

```
'''
```

3. Run the application:

...

```
python3 app.py
```

...





The python code(app.py) can be found on my [github](#).

Testing

Here's the result:

```
(venv) chinni@DESKTOP-PIOMKA8:~/chatbot$ python3 app.py
Run status: completed
User : What is the scholarship offered?
Assistant : The scholarship offered is a 100% tuition scholarship awarded as a discount on the applicable tuition price prior to the beginning of each trimester for eligible students. The continued distribution of the full tuition scholarship is contingent on ongoing progress toward the completion of the program entered and the degree earned [11*source] .
```

The assistant created here can also be tested on the OpenAI web interface.

	Assistants			+ Create
	Name	Instructions	ID	Date Created
	Untitled Assistant	You are a customer support chatbot with access to a PDF file about the university. Use the information from this file to answer user...	asst_cW3fvaedAsDZo2D1j9Smv4pY	Dec 7, 2023, 4:04 PM
				...

Note:

- *We can also create and test the assistant using the OpenAI Playground web interface. Here's a [tutorial pdf](#).*

- An assistant created in the web interface can be used in our project with the assistant ID, eliminating the need to recreate the assistant and upload the file using Python.

- In the current implementation, it's important to note that the assistant API is in beta mode. As a result, there are occasions(as shown) when the assistant may respond indicating that it does not have access to the uploaded document for answering queries. This is a known issue and is expected to be resolved as the API matures and is further developed by OpenAI.

```
(venv) chinni@DESKTOP-PIOMKA8:~/chatbot$ python3 app.py
Run status: completed
User : What is the scholarship offered?
Assistant : I currently do not have access to the file you uploaded. Please grant me access to the file so that I can review the scholarship information and provide you with the details you need.
```

Enhancement Ideas

Future enhancements can include:

- Improved error handling and logging for more robust operation.
- Integration with a user interface for easier interaction.
- Expansion of the knowledge base to cover a broader range of topics.

References

For more information, visit:

- OpenAI Assistants Overview: [OpenAI Assistants Documentation](<https://platform.openai.com/docs/assistants/overview>)