

# RAG in Depth

## Chat History

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# Goals

- Allow the user to have a back-and-forth conversation, meaning the application needs some sort of “memory” of past questions and answers.
- LangSmith tracking to visualize the operations.

# Dependencies and necessary modules

- New virtual environment.
- Install Jupyter Labs.
- LLM Model: OpenAI Chat Model.
- Embeddings Model: OpenAI.
- Vector Database: Chroma.
- Necessary modules:
  - Langchain, Langchain-openai, Langchain-community, Langchainhub
  - Chromadb
  - BS4 (Beautiful Soup, for web scraping).

## .env file

- OpenAI API Key.
- LangSmith credentials.
- LangSmith project name.

# LangSmith tracking

- The LangSmith tracking starts with the first invoke.

# Initial RAG App

- Same as in Quickstart.

# Contextualizing the question

- Sub-chain that takes historical messages and the latest user question.



# Chain with chat history

- Only run the chain when the chat history is not empty.

# Advanced technique

- [Link to the documentation page.](#)