# RAG in Depth

## RAG with an Agent

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# Goal

- Basic agent for doing retrieval when necessary and also holding a conversation.

# Dependencies and necessary modules

- New virtual environment.
- Install Jupyter Labs.
- LLM Model: OpenAI Chat Model.
- Embeddings Model: OpenAI.
- Vector Database: FAISS.
- Necessary modules:
  - Langchain, Langchain-openai, Langchain-community, Langchainhub
  - FAISS

# .env file

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

# LangSmith tracking

- The LangSmith tracking starts with the first invoke.

# The Retriever

- RAG with FAISS.

# The Tool with the Retriever

- create_retriever_tool()

# The Agent with the Tool

- AgentExecutor
- create_openai_tools_agent