✅ Project: Company Knowledge Assistant (RAG + Agent)

🧩 Description:

A smart assistant that helps employees query internal documents (project specs, HR policies, meeting notes, etc.) using natural language. The system uses Retrieval-Augmented Generation and LangChain agents to reason, search, and respond based on company documents.

🔧 Features:

|  |
| --- |
| Upload company documents (PDF, DOCX, TXT, Markdown, etc.) |
| Semantic search using vector database (RAG) |
| Conversational UI with memory and context |
| LangChain agent to answer complex queries with reasoning |
| User roles: Admin (manage documents), Employee (chat assistant) |
| Real-time web UI with **Chainlit** |

📦 Backend (Python, LangChain, FastAPI):

Document ingestion pipeline:

|  |
| --- |
| Extract text from PDFs, DOCX, images (OCR) |
| Chunking & metadata tagging |
| Embedding with OpenAI, Cohere, or Gemini |
| Store in vector DB (Chroma / FAISS / Weaviate / Qdrant) |

RAG setup:

|  |
| --- |
| LangChain |
| Retriever |
| + |
| ConversationalRetrievalChain |
| Optionally ensemble retriever for multimodal |

🎨 Frontend (Chainlit):

|  |
| --- |
| Company-branded chatbot interface |
| Role-based interaction: show admin upload panel, employee chat |
| Message history, citations, source document highlights |