Natheesh N

Final Project

PROJECT TITLE

LLM Question-Answering Application

AGENDA

- Define project objectives, scope, and requirements.
- Select appropriate technologies and frameworks for development.
- Develop wireframes and prototypes for the user interface.
- Implement backend functionality for document processing, embedding, and storage.
- Conduct testing, including unit testing, integration testing, and system testing.
- Deploy the application to a production environment and provide documentation and user training for usage and maintenance.

PROBLEM STATEMENT

Current document analysis tools often suffer from inefficiency and lack of accessibility, burdening users with navigating convoluted interfaces or bearing high expenses for processing and analysis. Moreover, securely storing and retrieving document embeddings pose significant challenges, necessitating a solution that is both user-friendly and affordable. Thus, there is a pressing need for a streamlined approach that effortlessly processes documents, extracts pertinent information, and grants convenient access to insights without sacrificing security or user experience.

PROJECT OVERVIEW

The LLM Question-Answering Application introduces a user-friendly interface designed to effortlessly extract insights from documents. Users initiate the process by inputting their OpenAI API keys. Subsequently, they can upload documents in PDF, DOCX, or TXT formats. The application then initiates processing, utilizing the all-MiniLM-L6-v2 model from HuggingFace to chunk and embed the content. This innovative methodology ensures that users do not incur any charges for generating embeddings, with processing times typically ranging between 1 to 2 minutes, depending on the file size and computational resources available.

Upon completion of document preparation, the embeddings are securely stored in a vector store using FAISS, a robust open-source library renowned for its efficiency in similarity searches and clustering of dense vectors. Once the document processing phase concludes, users can proceed to submit their queries. Within approximately a minute, the application delivers the desired response, offering users an efficient and seamless experience in accessing relevant information from their uploaded documents.

WHO ARE THE END USERS?

- Researchers
- Professionals in law, finance, consulting, journalism, etc.
- Students
- Businesses across industries
- Knowledge workers like librarians, data analysts, knowledge managers, etc.

YOUR SOLUTION AND ITS VALUE PROPOSITION

Solution:

Streamlines document analysis process using advanced AI technologies.

Supports document upload in PDF, DOCX, and TXT formats.

Processes documents using all-MiniLM-L6-v2 model from HuggingFace.

Embeds content for efficient analysis and retrieval of insights.

Securely stores embeddings in vector store using FAISS.

Enables users to submit queries and receive precise responses within minutes.

Value Proposition:

Efficiency: Automates document analysis tasks, saving time and effort.

Cost-effectiveness: No charges for generating embeddings.

User-friendly Interface: Intuitive interface for easy navigation.

Secure Storage: Ensures data privacy and confidentiality.

Accuracy: Provides precise responses to user queries.

Versatility: Supports diverse user needs across industries and domains.
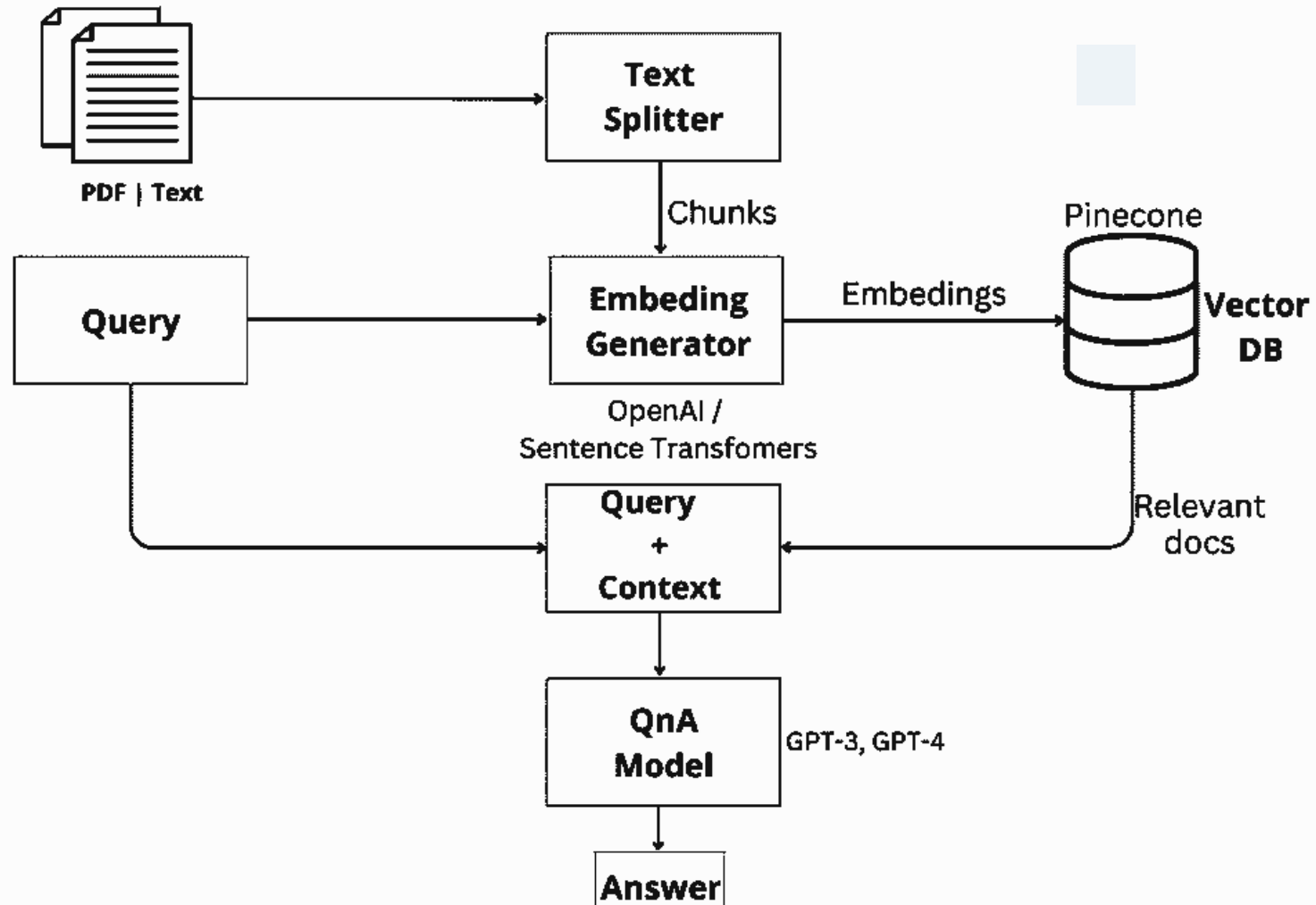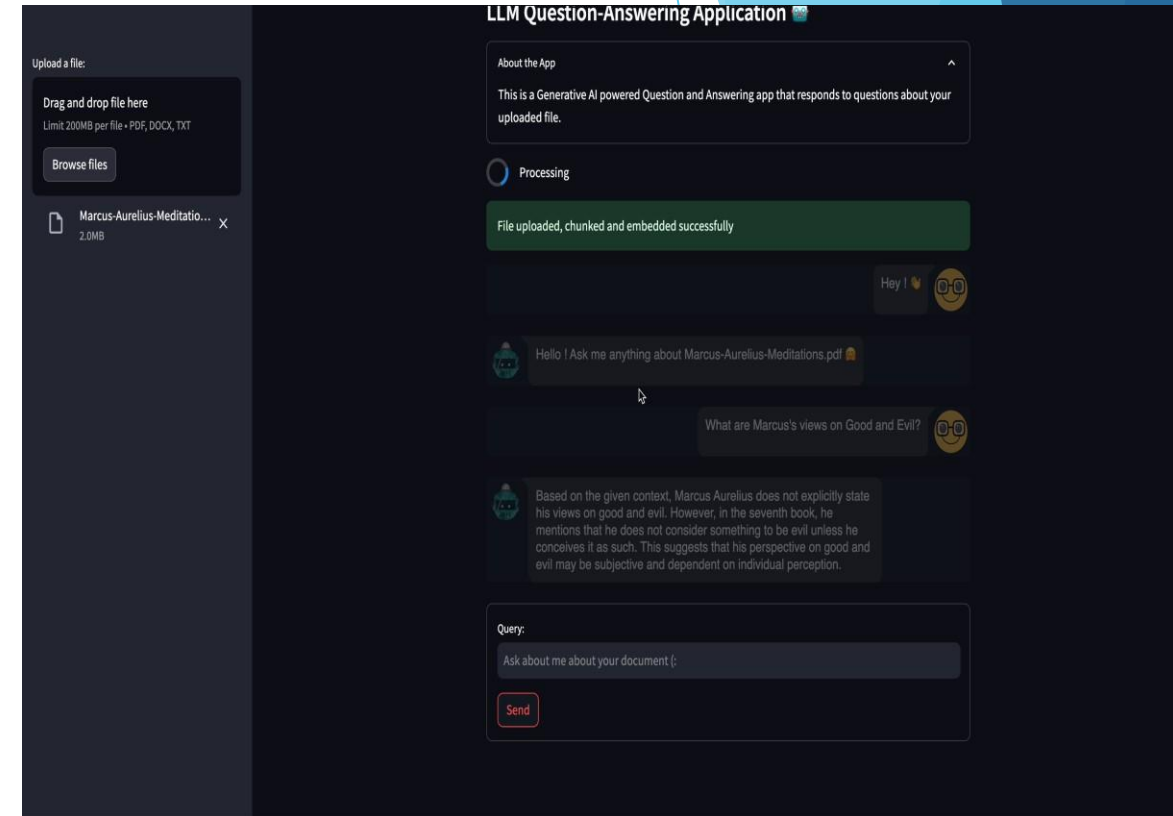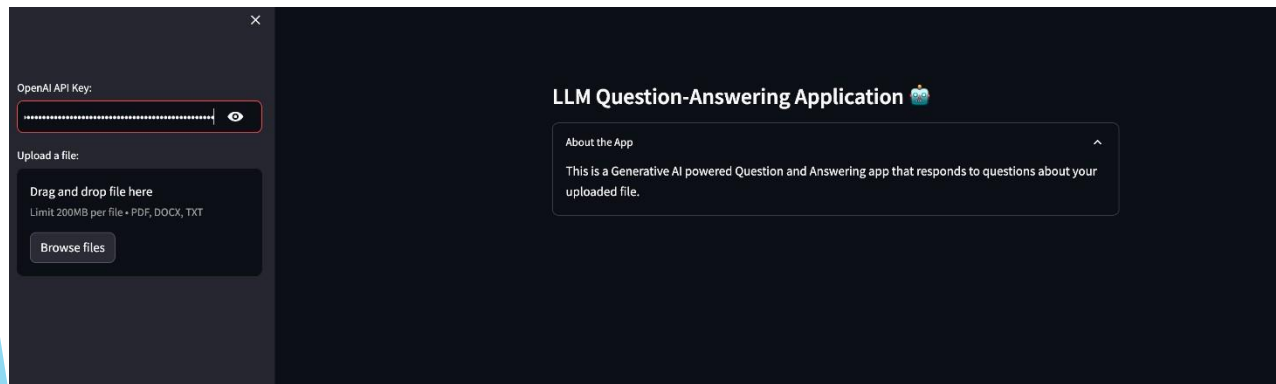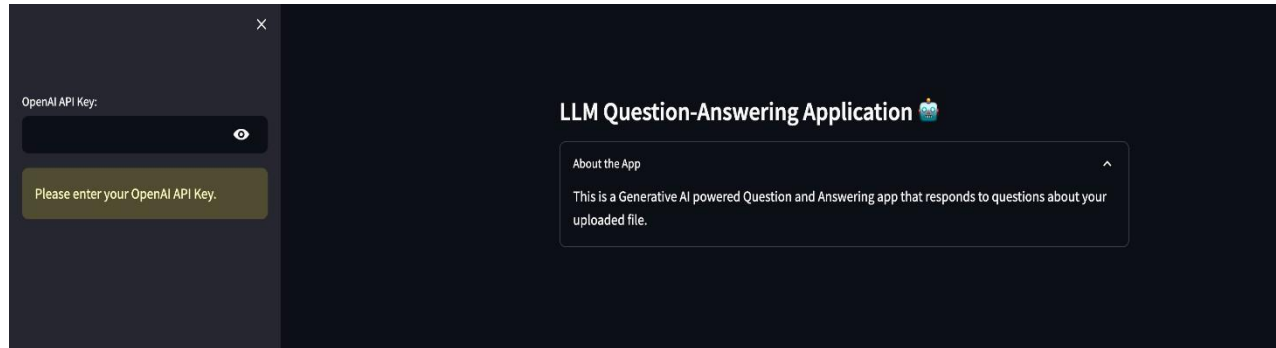
THE WOW IN YOUR SOLUTION

Prepare to be amazed by our revolutionary solution, where state-of-the-art AI technology seamlessly integrates with an intuitive user interface! Envision effortlessly uploading your documents in any format—whether it's PDFs, DOCX, or TXT files—and in mere moments, our cutting-edge system harnesses the power of the all-MiniLM-L6-v2 model to meticulously analyze and extract crucial insights with unparalleled precision. But wait, there's more! Your data's security is our utmost concern, as we employ robust measures to securely store embeddings using FAISS vector storage, ensuring complete confidentiality. And as for speed? Brace yourself for lightning-fast query responses delivered in just minutes! With our solution, efficiency, affordability, and accuracy converge within an intuitive platform designed to cater to your every need, providing an experience that truly wows.

MODELLING

RESULTS

https://github.com/Natheesh-N/TNSDC_GEN-AI