CHATBOT FOR MEDICAL QUERIES

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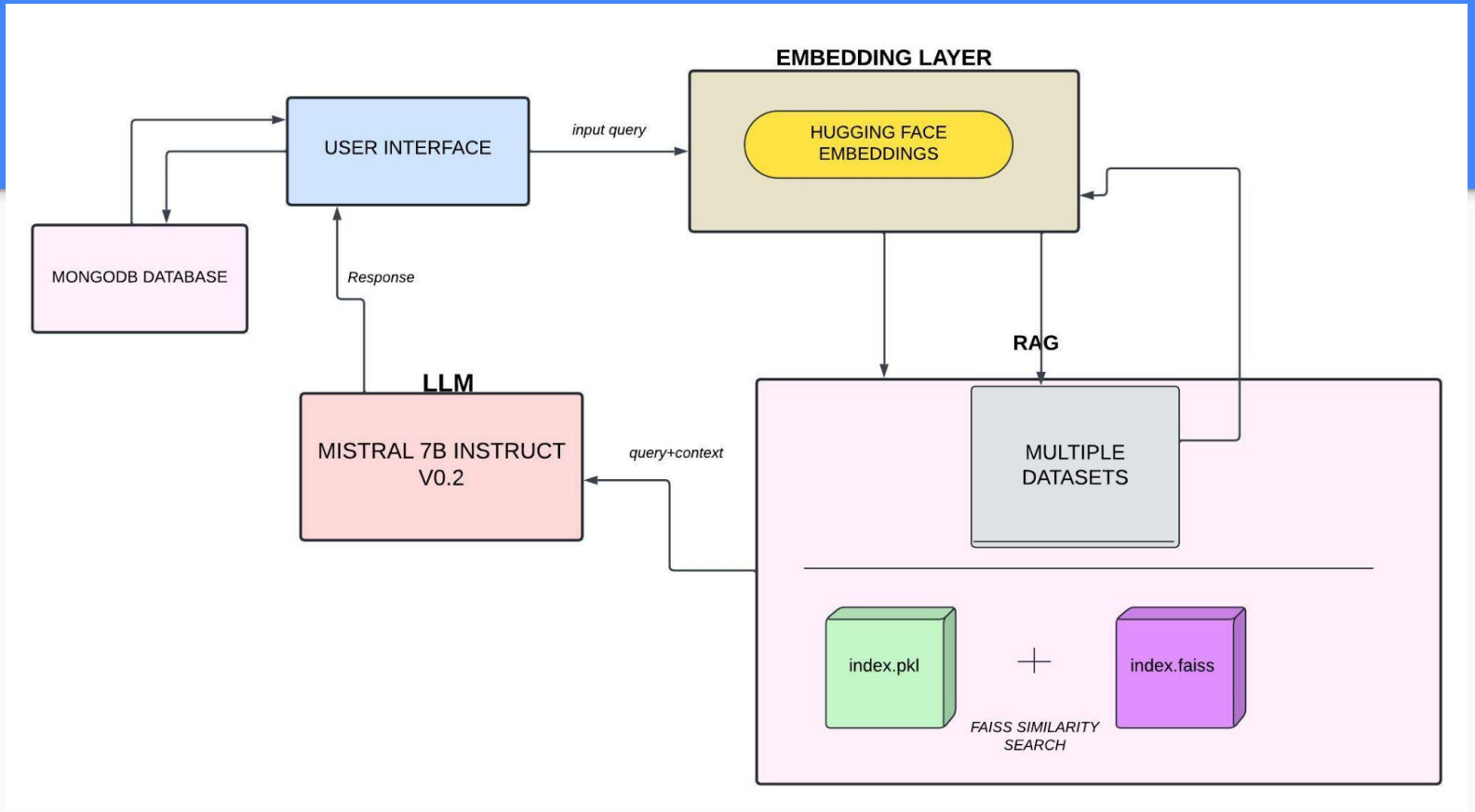
USE CASES OF THE PROJECT:

1. Symptom assessment: Patients can describe their symptoms and receive initial guidance on possible causes and whether they should seek professional medical care.
2. General health information: The chatbot can provide basic information on various health conditions, medications, and wellness topics.
3. Appointment scheduling assistance: The chatbot could help patients determine what type of doctor they need to see and assist with booking appointments
4. Medication: It can provide information on drug interactions, side effects, and dosage instructions.
5. Mental health support: The chatbot could offer initial counseling and resources for common mental health concerns.
6. Remote areas support: In regions with limited access to healthcare, it could provide basic medical guidance.
7. After-hours support: The chatbot can be available 24/7 to address non-emergency health concerns when clinics are closed.
8. Health education: It can provide general wellness advice and explanations of medical terms or procedures for research and development.

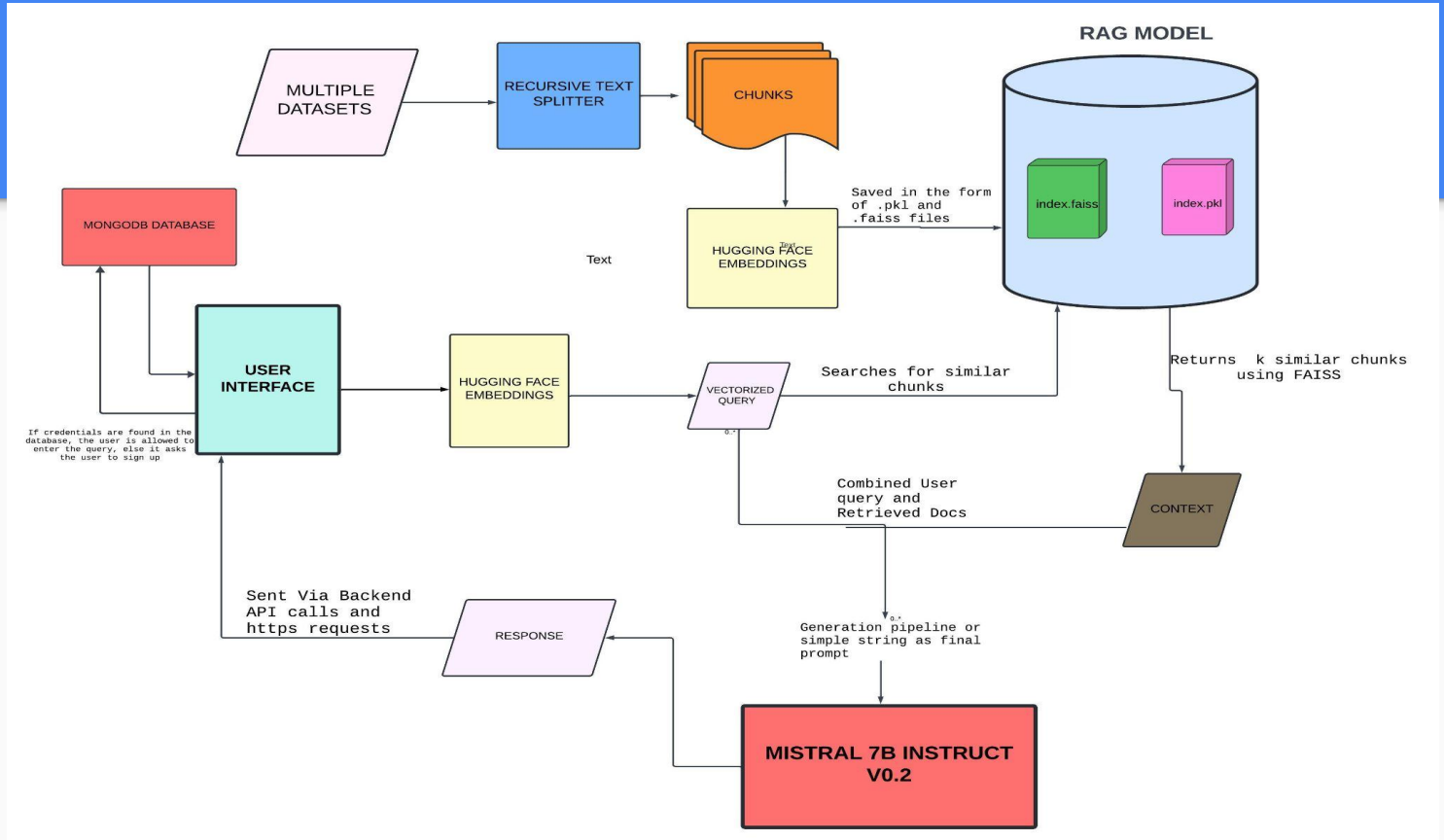
POTENTIAL UPGRADES

1. Enhanced Knowledge Base: Incorporate comprehensive medical datasets to broaden the chatbot's expertise and improve diagnosis accuracy.
2. Language Diversity: Implement support for multiple languages to cater to a global user base and overcome linguistic barriers.
3. Voice Interaction: Integrate speech recognition and text-to-speech capabilities, allowing users to verbally describe symptoms and receive spoken advice.
4. Visual Diagnosis Assistance: Enable the chatbot to analyze uploaded medical images such as skin conditions, X-rays, or other visual symptoms to aid in preliminary assessments.
5. Symptom Severity Assessment: This upgrade could potentially save lives by helping users determine when they need immediate medical attention versus when self-care is appropriate
6. Geo-specific Health Advice: Tailor recommendations based on the user's location, considering local health trends, available resources, and regional medical guidelines

ARCHITECTURE DIAGRAM



WORKFLOW


RAG MODEL
MULTIPLE DATASETS
RECURSIVE TEXT SPLITTER
CHUNKS
index.faiss
index.pkl
Saved in the form of .pkl and .faiss files
MONGODB DATABASE
Text
HUGGING FACE EMBEDDINGS
USER INTERFACE
If credentials are found in the database, the user is allowed to enter the query, else it asks the user to sign up
HUGGING FACE EMBEDDINGS
VECTORIZED QUERY
Searches for similar chunks
Returns k similar chunks using FAISS
Combined User query and Retrieved Docs
CONTEXT
Sent Via Backend API calls and https requests
RESPONSE
Generation pipeline or simple string as final prompt
MISTRAL 7B INSTRUCT V0.2