

Ideation and Design Annexures

Selected Problem:

Implementing Retrieval-Augmented Generation (RAG) with lightweight LLMs like LLaMA 2 or Mistral to deliver clear, easy-to-understand guidance on symptoms and medications for common ailments. This system combines advanced retrieval techniques with LLMs to simplify medical information, making it more accessible and user-friendly.

Design Thinking – Empathy

What User Says (Direct Statements): <ul style="list-style-type: none">• I need clear information about my symptoms.• I'm looking for guidance on what medication to take.• The advice should be easy to understand and accurate.	What User Thinks (User Thinks About Their Experience): <ul style="list-style-type: none">• I'm unsure about the medical advice given in my documents.• I might not be interpreting the information correctly.• I need reliable guidance to manage my health effectively.
What User Does (Actions That User/Client Takes): <ul style="list-style-type: none">• Uploads medical documents to the system for processing.• Queries the system for symptom and medication guidance.• Reviews and follows the generated responses for health management.	What User Feels (Empathize User Mental State Of User/Client): <ul style="list-style-type: none">• Reassured by receiving tailored and easy-to-understand health guidance.• Confident in managing symptoms and medications with accurate information.• Relieved that the system ensures privacy and provides clear advice based on their documents.

Problem Statement

A patient is an individual with limited medical knowledge who needs clear, easy-to-understand guidance on symptoms and medications for common ailments because current medical information is often too complex, making it difficult for non-experts to understand and take appropriate action.

Ideation

Sr. No.	Requirement	Available Solution	Proposed Solution
1	Clear Symptom Information	Generalized, keyword-based medical info retrieval.	Use RAG with LLMs for personalized and clear symptom guidance.
2	Tailored Medication Guidance	Basic algorithms offering generic medication advice.	Implement RAG with LLMs for accurate, personalized medication guidance.
3	User-Friendly Experience	Static sites/apps with limited interactivity, leading to a complex user experience.	Provide an accessible system for easy document upload and tailored health advice, enhancing user experience.

Solution

The solution leverages Retrieval-Augmented Generation (RAG) combined with lightweight Large Language Models (LLMs) to deliver clear medication guidance. Users upload medical documents in various formats, which are processed to extract and index relevant information. When users query the system, it retrieves pertinent data from the indexed documents and uses the LLM to generate concise responses.

Scope

- Symptom analysis, medication recommendations.
- Reduces misinformation risk.
- Provides prompt healthcare guidance for better outcomes.
- Targeting multiple individuals with ease of access to professional medical advice.