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MIT SCHOOL OF COMPUTING

Class : LY IT DA
Group Id:

DEPARTMENT OF INFORMATION TECHNOLOGY

AI-Driven Predictive Diagnosis System for Healthcare

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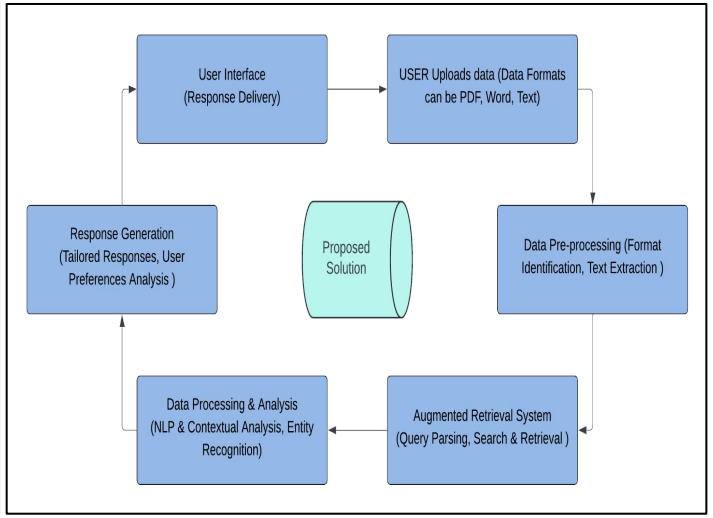
Empathy Chart:

What User Says (Direct Statements):	What User Thinks (User Thinks About Their Experience):
• 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.	• 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):	**What User Feels (Empathize User Mental State Of User/Client):**
• 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.	• 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.

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.

Proposed Block diagram:



Problem Statement:

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.

Proposed 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 and Feasibility:

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