

Generative AI | Gemini | LLAMA 3-8b | Langchain

Dr. HeAlify (An AI-powered Doctor)

NAME : KARTAVYA MASTER



Objective



- The primary objective of the Dr. HeAlify project is to develop an **AI-powered healthcare- assistant** that enhances the healthcare experience for users.
- By providing an intuitive platform for **medical report summarization** and an **AI-powered chatbot** for real-time assistance
- **Medical Report Summarization** : Understand key findings, diagnoses, and recommendations in medical reports and provides personalized health advice,
- **AI-powered Chatbot**: Ask health questions, receive medical advice, and get health guidance from Dr. HeAlify Bot. By leveraging advanced AI technologies, The project aims to enhance the healthcare experience, user-friendly interface that improves patient engagement and understanding.

Prototype

The Dr. HeAlify prototype includes:

1. Medical Report Summarization:

- a. Users can upload their medical reports in PDF format.
- b. The AI model processes the reports and generates summaries highlighting key findings, diagnoses, treatments, and recommendations.

2. AI-powered Chatbot (Dr. HeAlify Bot):

- a. Users can interact with the chatbot to get real-time medical advice and assistance.
- b. The chatbot answers queries, provides health tips, and guides users on their healthcare journey.

3. User Interface:

- a. A user-friendly interface built with Flask and Streamlit for easy navigation.
- b. Features include a sidebar menu with options for home, medical report summarization, and chatbot interaction.

Working of the Model

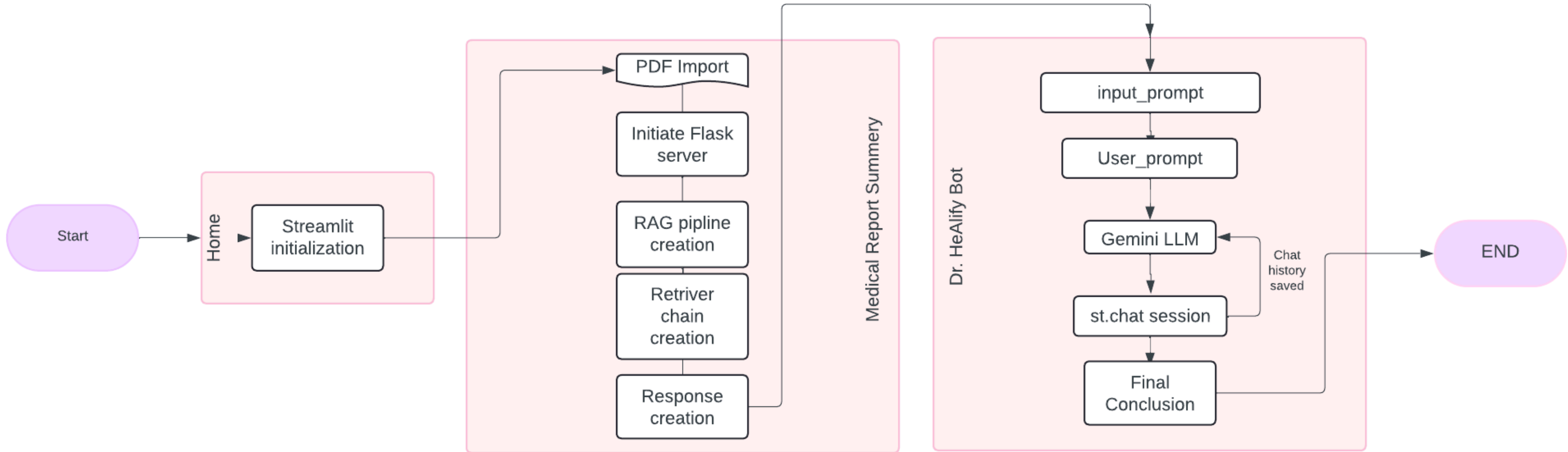
- **Medical Report Summarization:**

- **File Upload:** Users upload a PDF medical report via the application.
- **AI Processing:** The report is processed using advanced AI models (e.g., ChatGroq with Llama3).
- **Summarization:** The AI extracts key findings, diagnoses, treatments, and recommendations, generating a concise summary.
- **Presentation:** The summary is displayed in an easy-to-understand format, highlighting significant medical details

- **Dr. HeAlify Bot:**

- **User Interaction:** Users interact with the chatbot by typing their queries.
- **AI Response:** The chatbot uses a generative AI model (e.g., Google Flash) to understand and respond to user queries.
- **Advice and Assistance:** The bot provides detailed health advice, potential diagnoses, and treatment suggestions.
- **Continuous Learning:** The AI model continuously improves its responses through user interactions, ensuring better assistance over time.

Work Flow (Flow-Chart)



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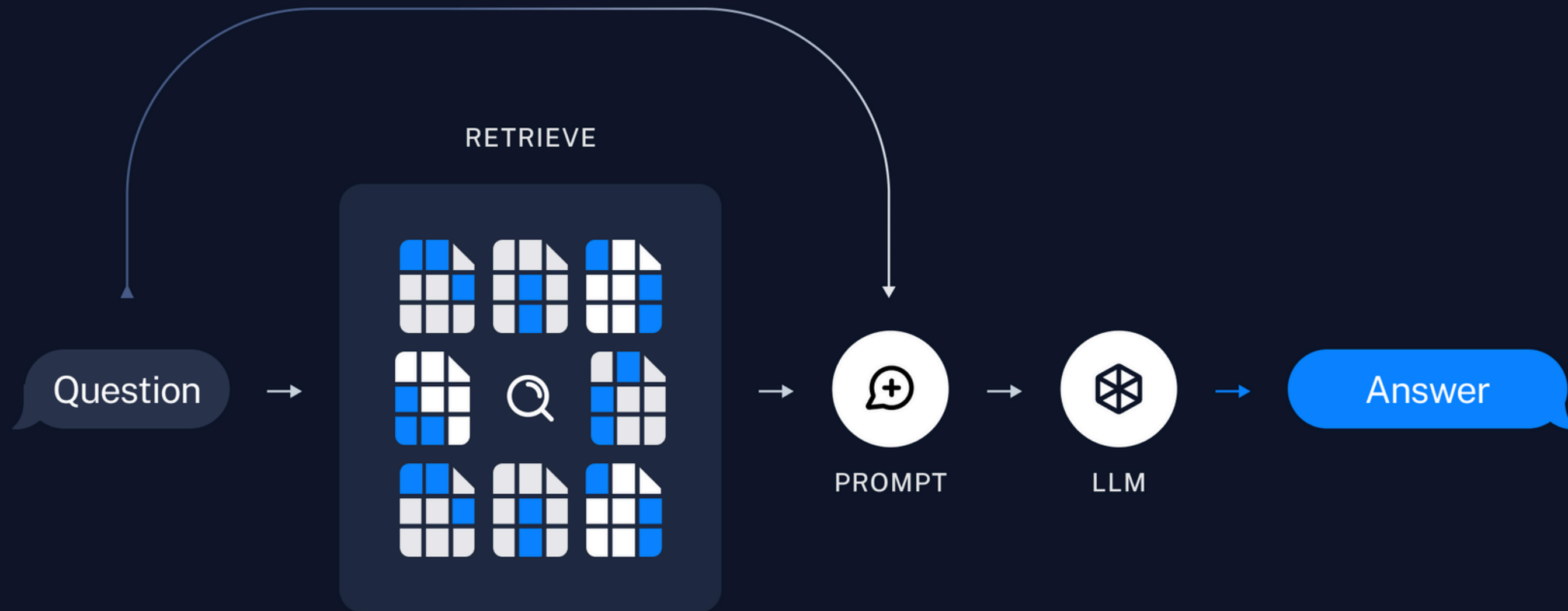
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RAG Architecture



Retrieval and Response Generation

Working of the model (Home page)




Dr. HeAlify


Menu Options

Home

Medical Report Summery

Dr. HeAlify Bot

Welcome to HeAlify Doc-Agent 



Dr. HeAlify

An AI- powered Doctor

Our mission is to provide you with a seamless and advanced AI-powered healthcare assistant that can help you understand your medical reports, provide personalized health advice, and assist you with any medical inquiries you might have.

Features:

- Medical Report Summarization:** Upload your medical reports and get concise summaries, key insights, and actionable advice.
- Dr. HeAlify Bot:** Chat with our AI-powered doctor for real-time assistance and medical advice.

We are committed to improving your healthcare experience by leveraging the power of AI.

How to Get Started:

- Navigate to the **Medical Report Summery** section to upload and summarize your medical reports.
- Visit the **Dr. HeAlify Bot** section to chat with our AI doctor for any medical advice or questions.

Thank you for choosing HeAlify Doctor Agent. Your health is our priority!

Contact Us: If you have any questions or need assistance, feel free to contact me at [CLICK ME](#).

Developed by KARTAVYA MASTER

PORTFOLIO : [CLICK ME](#)


Share


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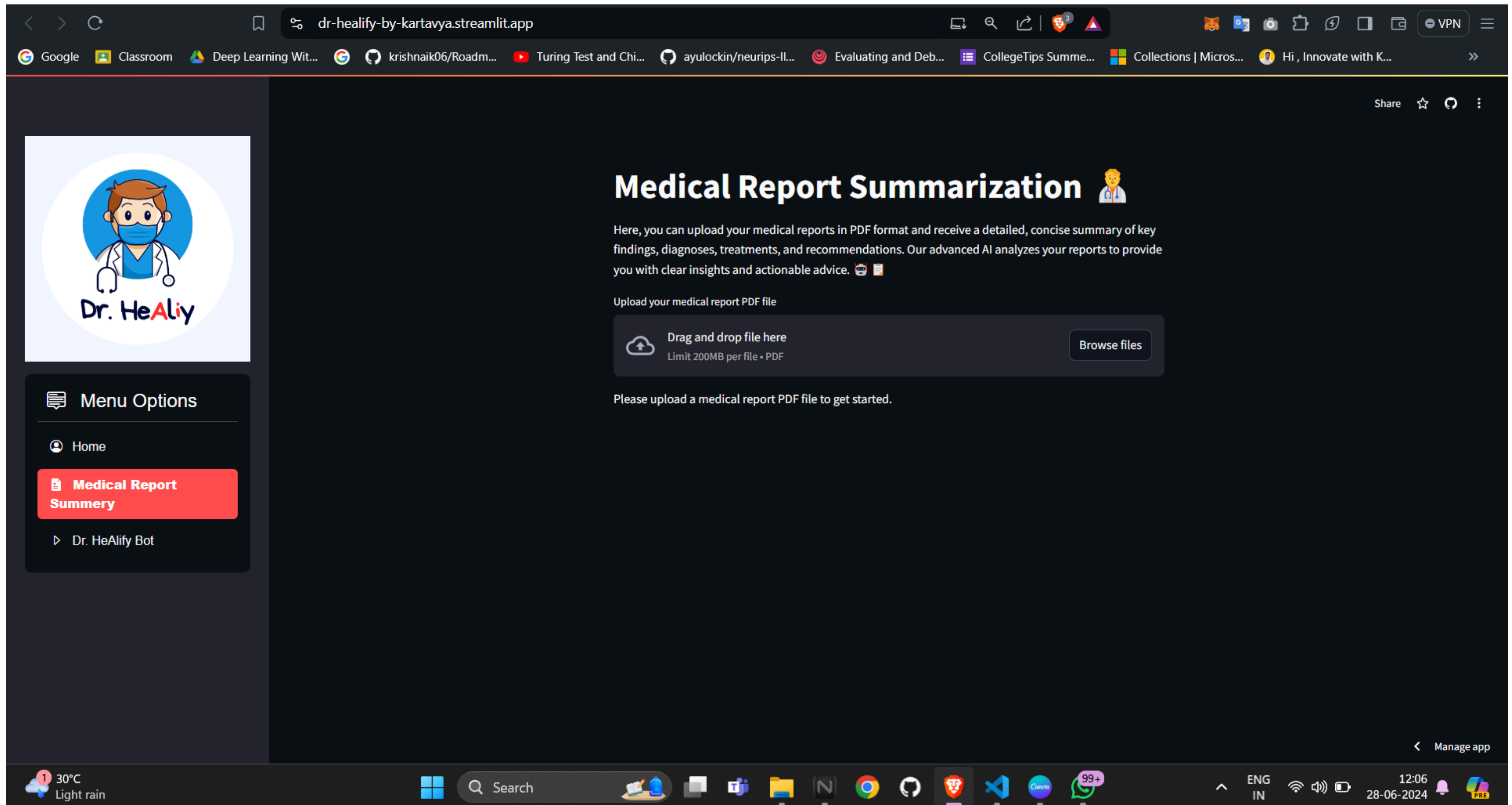





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Working of the model (Medical Report Summery)



Menu Options

Home

Medical Report Summery

Dr. HeAlify Bot

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Medical Report Summary

Patient Information: John Doe, a 39-year-old male, was admitted to XYZ General Hospital on June 10, 2024, with severe abdominal pain and nausea.

Admission Details: Admitted by Dr. Emily Carter at 14:30 with a primary diagnosis of suspected appendicitis.

Medical History: John has a history of hypertension, type 2 diabetes, and an appendectomy in 2010. He is currently taking medications for hypertension (Metformin, Lisinopril, and Atorvastatin).

Physical Examination: John was found to be alert and in distress due to pain. Vital signs were within normal limits, except for a temperature of 38.2°C (100.8°F). Abdominal examination revealed tenderness in the lower right quadrant with rebound tenderness present.

Diagnosis and Treatment: John was scheduled for an emergency appendectomy and was placed on IV antibiotics for 48 hours post-surgery. He was also advised to maintain a light diet initially and avoid heavy lifting for 2 weeks.

Discharge Plan: Expected discharge date: June 13, 2024, with a follow-up appointment scheduled with Dr. Emily Carter on June 20, 2024.

Additional Tests or Consultations: Based on the report, no additional tests or consultations are recommended at this time. However, it would be beneficial to monitor John's vital signs and signs of infection closely post-surgery.


Urgent Issues: There are no immediate attention-required issues identified in the report. However, John should be advised to contact the hospital if he experiences fever, severe pain, or signs of infection at the surgical site.


Insights and Advice:

- Takeaway:** John's appendectomy was successful, and he is expected to make a full recovery with proper post-operative care.
- Medication:** Continue taking Metformin, Lisinopril, and Atorvastatin as prescribed.
- Follow-up:** Schedule a follow-up appointment with Dr. Emily Carter on June 20, 2024.

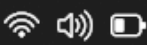
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Working of the model (Dr. HeAlify Bot)






Menu Options

Home

Medical Report Summery

Dr. HeAlify Bot

Dr. HeAlify Bot  





Dr. HeAlify Bot

An AI- powered chatbot for instant quaries

Welcome to the Dr. HeAlify Bot section! Here, you can interact with our advanced AI-powered chatbot designed to provide you with instant medical assistance and advice.


Meet Dr. HeAlify Bot: Dr. HeAlify Bot is a virtual healthcare assistant that leverages the latest AI technology to help answer your medical queries, provide health tips, and guide you on your healthcare journey. Whether you need information about symptoms, medications, or general health advice, Dr. HeAlify Bot is here to assist you 24/7.


Start chatting with Dr. HeAlify Bot now and get the medical assistance you need!  

Type your message here...


Manage app

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

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Search



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Working of the model (Dr. HeAlify Bot)



i have conjunctivitis



I'm sorry to hear you have conjunctivitis.

It's understandable that you're feeling uncomfortable. I can help you understand this condition and offer some suggestions.

Understanding Conjunctivitis

Conjunctivitis, also known as "pink eye", is an inflammation or infection of the conjunctiva, the clear membrane that covers the white part of your eye and the inside of your eyelid.

Causes:

- **Viral Conjunctivitis:** The most common type, often caused by adenoviruses. It is highly contagious and usually resolves on its own within a week or two.
- **Bacterial Conjunctivitis:** Caused by bacteria, often leading to thicker discharge (pus) than viral conjunctivitis. It can be treated with antibiotic eye drops.
- **Allergic Conjunctivitis:** Triggered by allergens like pollen or pet dander, causing itching, redness, and watery eyes.

Symptoms:

- Redness in the white part of your eye
- Itching
- Burning sensation
- Watery discharge
- Sensitivity to light
- Crusting of the eyelids, especially in the morning

Treatment & Advice:

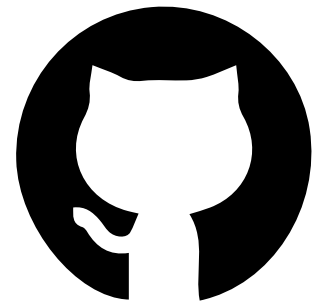
- **Rest:** Give your eyes time to recover.
- **Cool Compress:** Apply a cool compress to your eyes for relief from irritation.
- **Eye Drops:**
 - **Over-the-counter (OTC) drops:** Artificial tears can help soothe dryness.
 - **Prescription drops:** If your conjunctivitis is bacterial, your doctor will likely prescribe antibiotic eye drops.
- **Hand Hygiene:** Wash your hands frequently and avoid touching your eyes.
- **Hygiene:** Use separate washcloths for your eyes and face.
- **Contagiousness:** If you have viral conjunctivitis, it is highly contagious. Avoid close contact with others and avoid sharing personal items like towels and makeup.

Important Note:

- **Seek Medical Attention:** It's crucial to consult your doctor for proper diagnosis and treatment, especially if your symptoms are severe, persistent, or accompanied by vision changes. They can determine the cause and recommend the best course of action.
- **Avoid Self-Treatment:** Do not use eye drops without consulting your doctor, as some eye drops can worsen certain types of conjunctivitis.

I hope this information is helpful. Please remember to consult a doctor for a personalized diagnosis and treatment plan.

LINKS



GitHub



Streamlit



Scope of the Project



- **Immediate Benefits:**

- **Enhanced Patient Understanding:** By summarizing medical reports, users can better understand their health conditions and treatments.
- **Quick Access to Medical Advice:** The chatbot provides instant responses to medical queries, improving accessibility to health information.
- **Improved Patient Engagement:** Users are more engaged in their healthcare journey, leading to better health outcomes.

- **Future Enhancements:**

- **Integration with Electronic Health Records (EHR) Systems:** Seamless integration with EHR systems for comprehensive medical data access.
- **Language and Regional Expansion:** Expanding the application to support multiple languages and regional medical practices.
- **Mobile Application Development:** Creating a mobile app for broader accessibility and convenience.

Reference

- **Google Gemini Documentation**
- **Krish Naik (Youtube)**

Conclusion

Dr. HeAlify represents a significant advancement in the application of AI in healthcare. By providing an intuitive platform for medical report summarization and an AI-powered chatbot for real-time assistance, Dr. HeAlify aims to improve patient outcomes and satisfaction. The project demonstrates the potential of AI to transform the healthcare industry by making medical information more accessible and understandable for everyone. Dr. HeAlify is poised to become a valuable tool in the healthcare ecosystem, bridging the gap between complex medical data and patient comprehension.