



MEDICAL DISEASE IDENTIFICATION USING NLP

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Abstract: This project focuses on improving medical disease identification through a chatbot built over linked data, overcoming challenges like understanding user queries and supporting multiple knowledge bases. It first designs an interactive user interface architecture for smooth interaction. Then, it proposes a machine learning approach combining intent classification and natural language understanding to accurately interpret user intents and generate SPARQL queries. By leveraging these technologies, the project aims to revolutionize medical disease identification, offering a sophisticated tool for healthcare decision-making and support.

Keywords: Chatbot, Deep Learning, LSTM, Python, Natural Language Processing, Intent Classification, Recurrent Neural Network, Dataset, JSON, Conversation.

I. INTRODUCTION

In recent years, chatbot development has surged, offering conversational agents that revolutionize user interactions. These computer programs fulfill user needs and respond to queries, simplifying tasks. Modern chatbot creation benefits from accessible development platforms and source code, contrasting with earlier challenges. Development methods include Natural Language Processing (NLP) and Deep Learning, each with distinct advantages.

II. BACKGROUND AND RELATED WORK

1. "Chatbots: Are They Really Useful?" authored by Abu Shawar and Atwell in 2007 offers a comprehensive examination of chatbots, tracing their evolution from early experiments like ELIZA to contemporary advancements. The paper delves into the theoretical foundations of chatbot design, exploring linguistic principles and cognitive models that underpin their development. Central to the discussion is the utilization of AIML (Artificial Intelligence Markup Language) patterns, with ALICE serving as a case study. Through ALICE, the authors illustrate the practical implementation of AIML in creating functional chatbots. Additionally, the paper evaluates the efficacy of chatbots, considering factors such as user experience and task performance. It identifies challenges in chatbot technology and proposes future research directions to overcome these limitations. Ultimately, the paper provides valuable insights into the utility of chatbots and their potential impact on various domains.

2. In "A Web-based Platform for Collection of Human Chatbot Interactions" by Lin, D'Haro, and Banchs (2016), the authors introduce a novel web-based chatbot design framework focused on gathering and annotating human chatbot interactions. The paper emphasizes the importance of collecting real-world data to enhance the functionality of chatbots. The authors showcase their work through the Web Chat platform, which serves as a crowd-sourced initiative aimed at improving chatbot performance. By leveraging contributions from users interacting with the platform, the authors aim to gather diverse and comprehensive datasets for training and refining chatbot models. This approach enables researchers and developers to access valuable interaction data, ultimately leading to advancements in chatbot design and implementation.

3. In "The Anatomy of ALICE" by Dr. Richard S. Wallace (2003), the focus is on a detailed examination of ALICE (Artificial Linguistic Internet Computer Entity) and the underlying Artificial Intelligence Markup Language (AIML). Dr. Wallace delves into the technical intricacies of ALICE, offering insights into its development and functionality. The paper goes beyond mere technical aspects, delving into philosophical and historical considerations related to human consciousness within the context of chatbot design. By exploring these deeper dimensions, Dr. Wallace provides a comprehensive understanding of ALICE's capabilities and its significance in the realm of artificial intelligence.

III. METHODOLOGY

A. EXISTING SYSTEM:

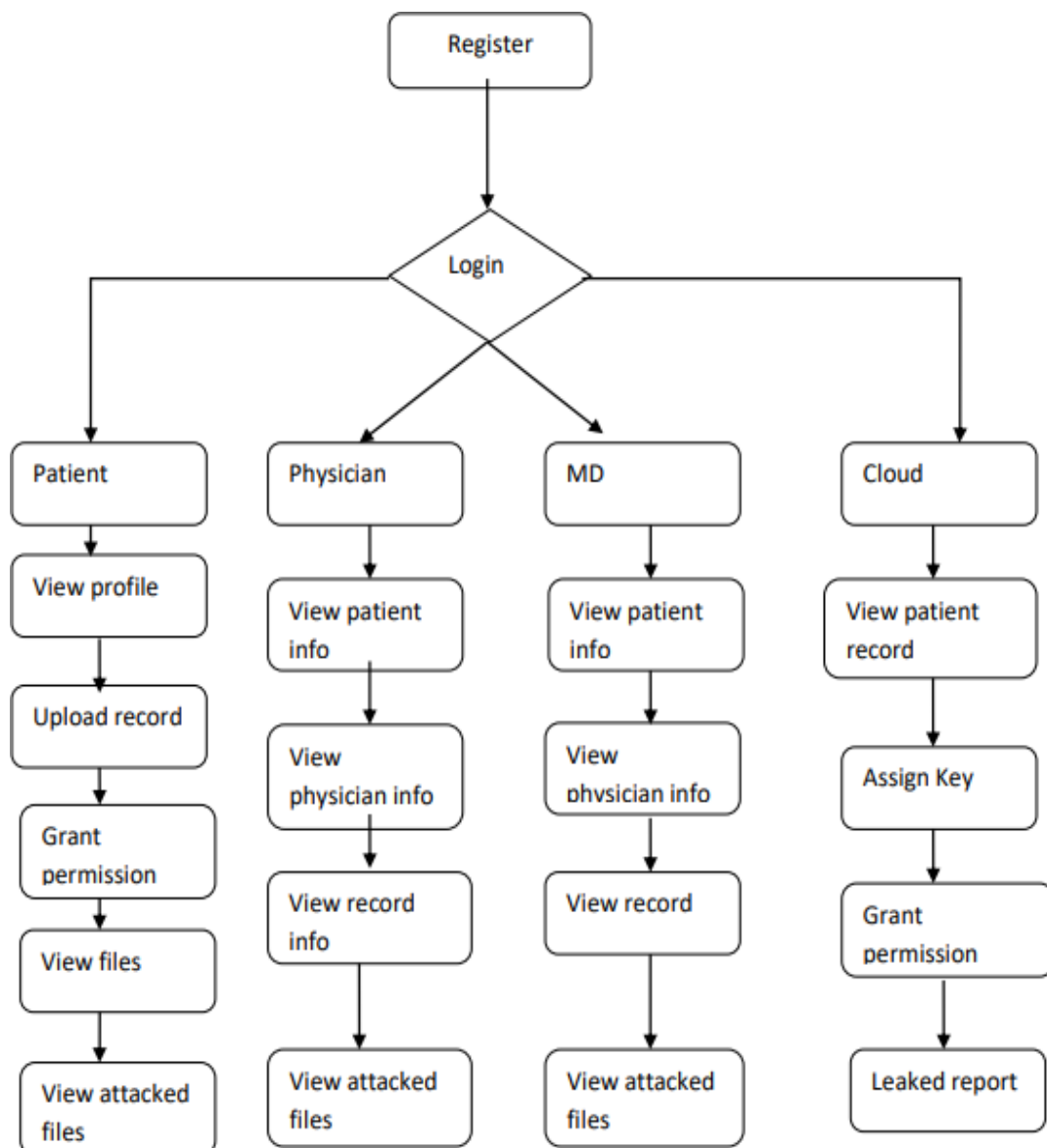
Conversational AI encompasses voice assistants like Alexa and Siri, as well as chatbots on platforms like Facebook Messenger.

These systems handle tasks like music playback and information retrieval, primarily focusing on short, task-oriented dialogs.

B. PROPOSED SYSTEM:

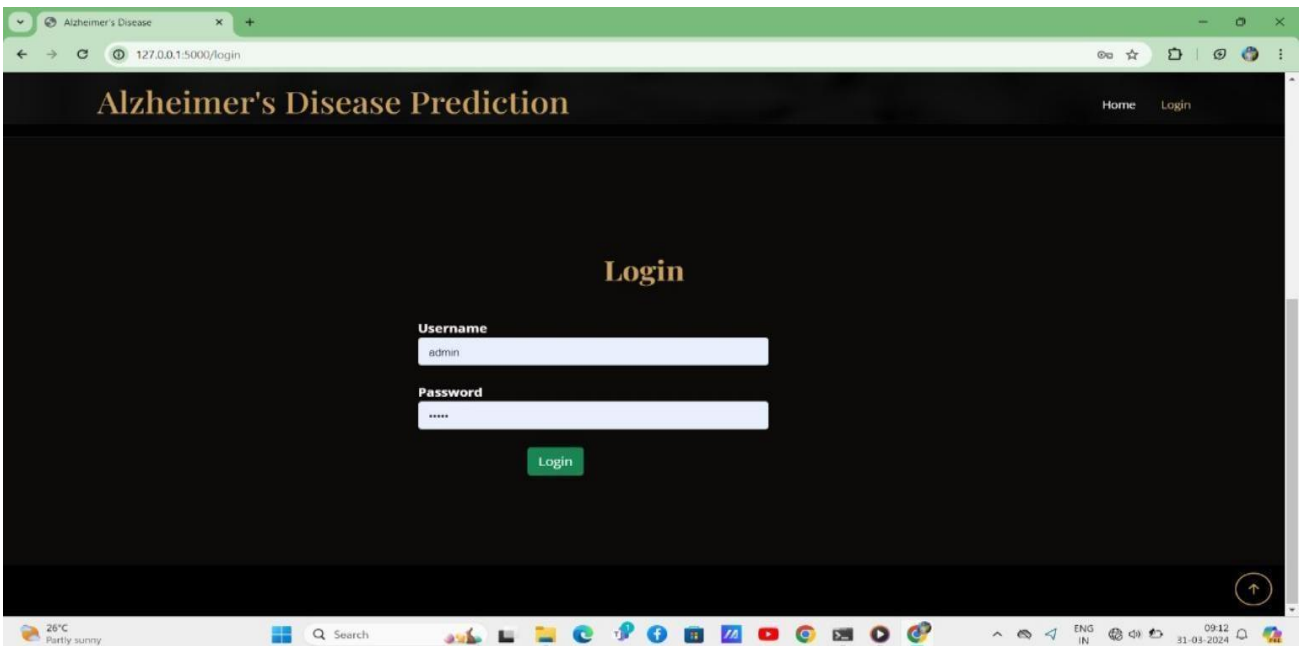
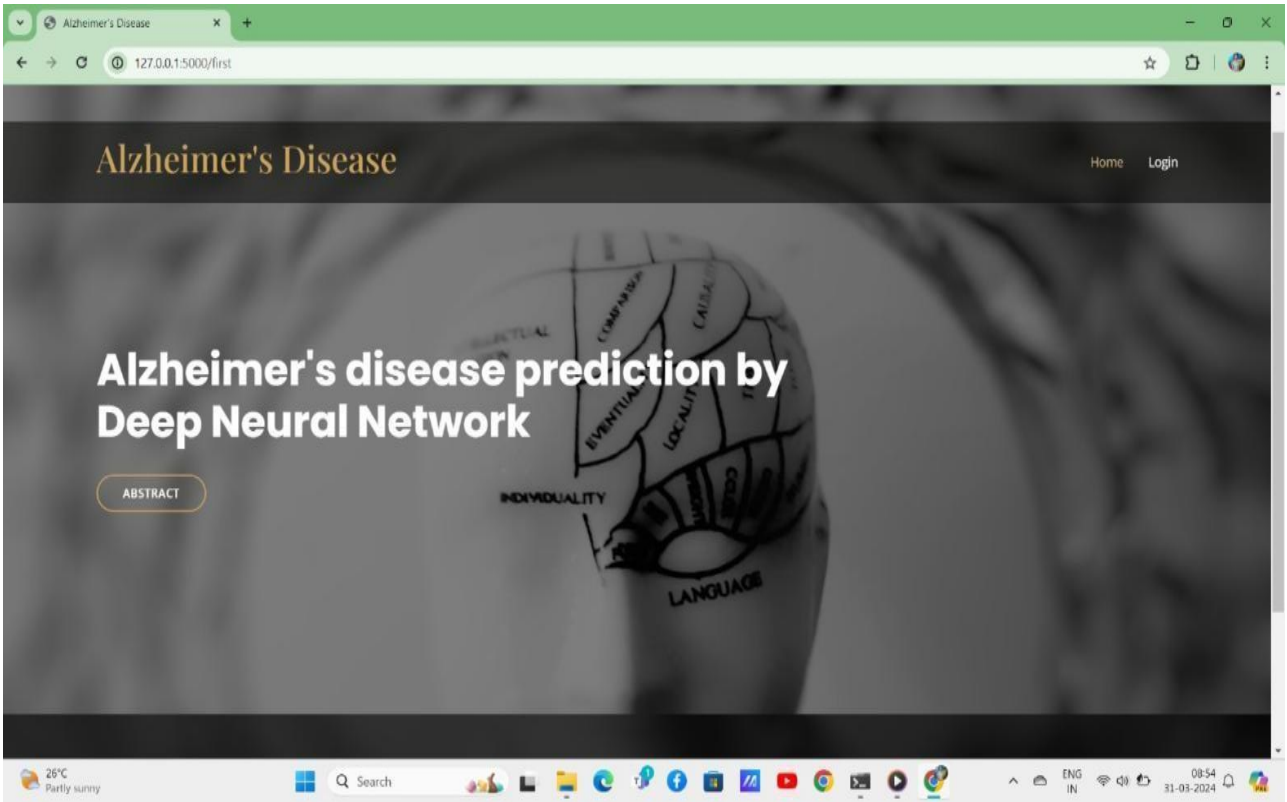
This Python project utilizes deep learning, specifically LSTM neural networks, to create a chatbot. Trained on a dataset ('intents.json') containing categories, patterns, and responses, the chatbot classifies user messages and provides appropriate responses from the dataset.

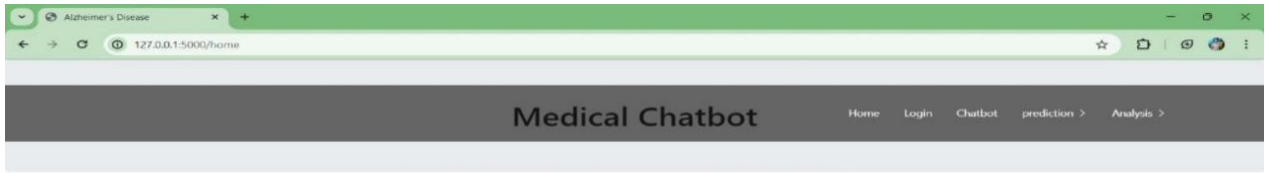
C. ARCHITECTURE:





D.RESULTS:

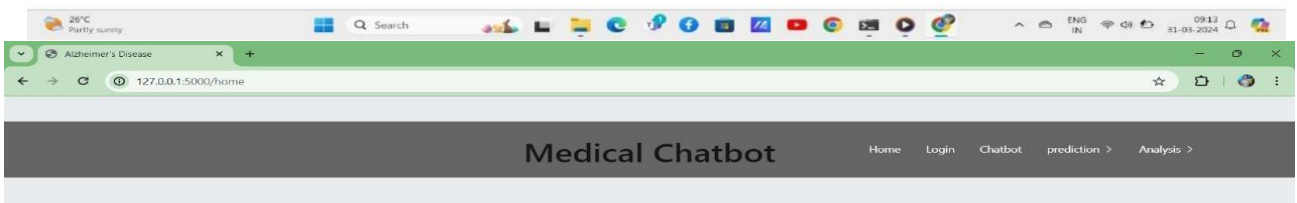




Hi! I'm Remdex..I will answer your queries..If you want to exit,type bye.... :)

Type Your Message Here

Send



Hi! I'm Remdex..I will answer your queries..If you want to exit,type bye.... :)

how

I am just a chatbot. Please consult a doctor for your query.

iam suffering from fever and vomitings

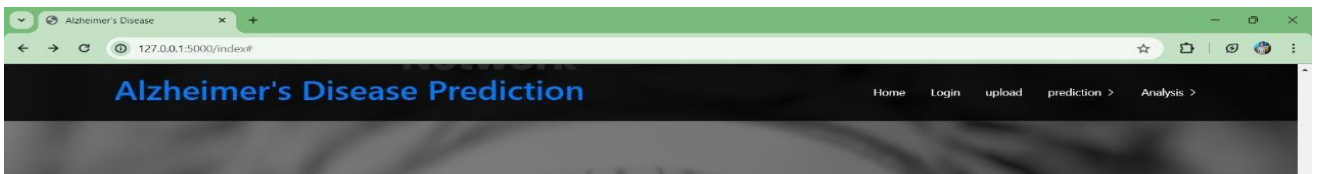
That doesn't sound good at all This could be a symptom..Please Consult a Doctor ASAP.

iam suffering from weightlos and weakness

I am just a chatbot. Please consult a doctor for your query.

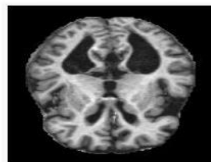
Type Your Message Here

Send

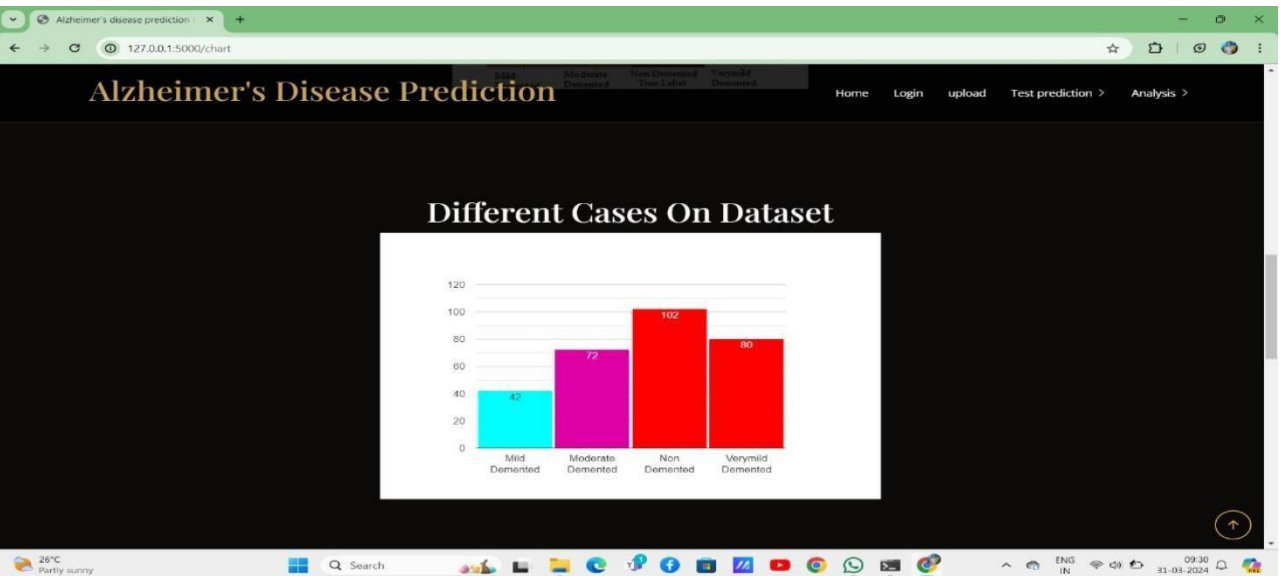
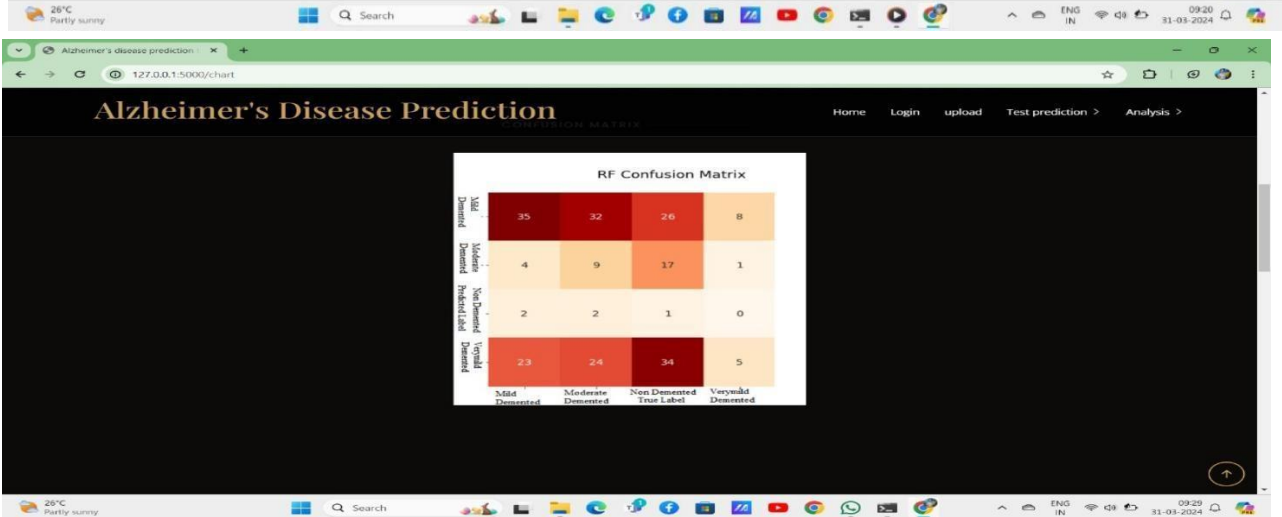
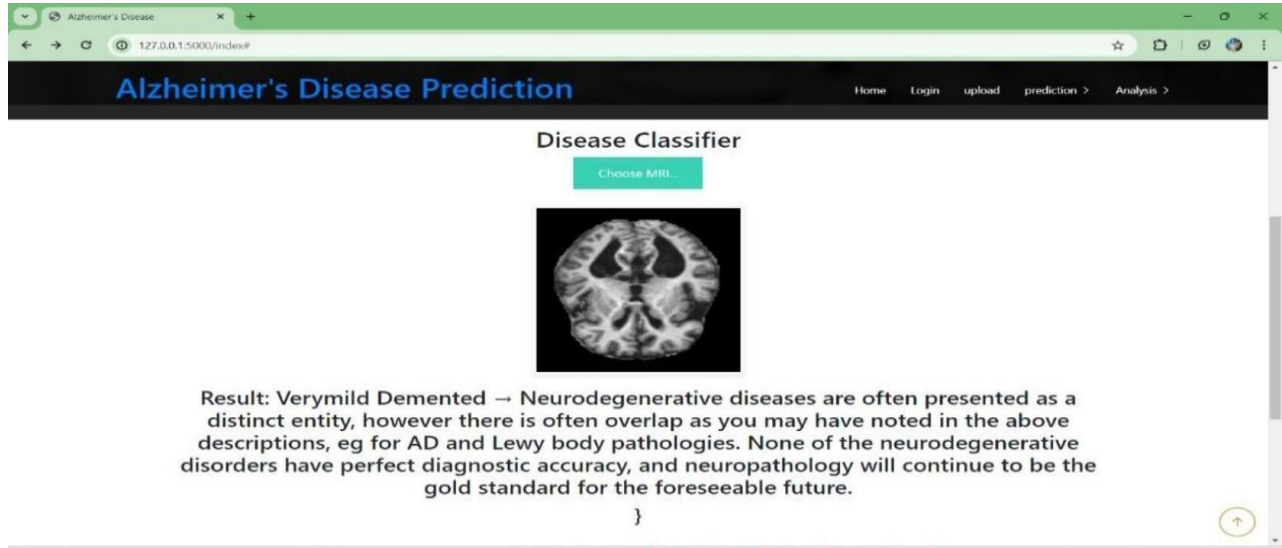


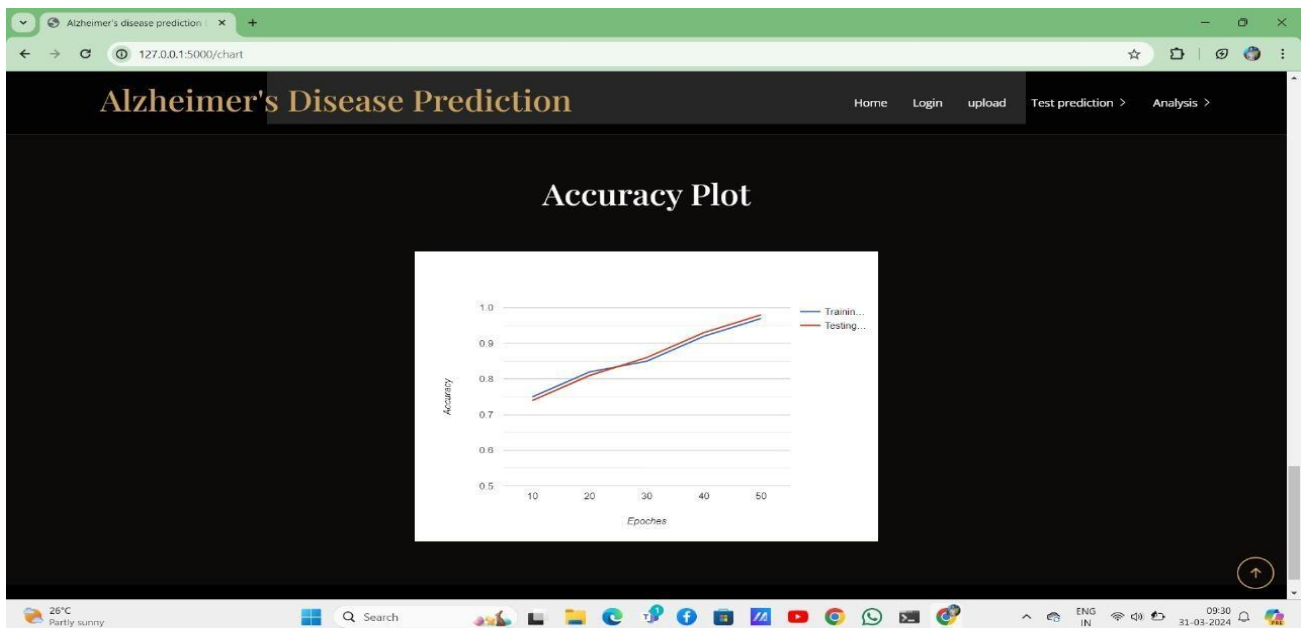
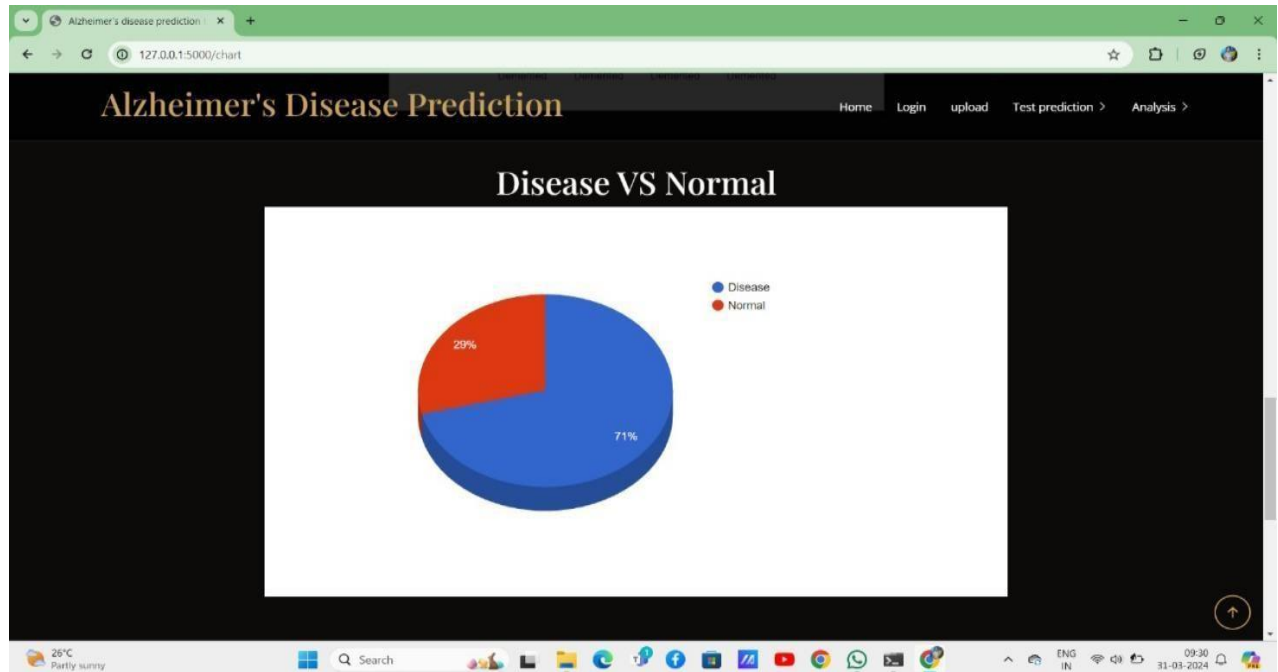
Disease Classifier

Choose MRI...



Analyze Disease





IV. CONCLUSION

In this project, we have developed a chatbot capable of interacting with users and answering their queries using AI/ML techniques. While the chatbot is currently limited to the knowledge within its dataset, there is potential for expansion by integrating APIs from various domains such as Wikipedia, weather forecasting departments, sports, news, and government services. By incorporating these APIs, the chatbot can broaden its knowledge base and respond to a wider range of user inquiries across different domains.

This enhancement would enable users to engage with the chatbot on a variety of topics, including real-time events and current affairs. Overall, by leveraging external APIs and continuously updating its knowledge base, the chatbot can evolve into a more versatile and informative virtual assistant, providing valuable assistance to users in diverse areas of interest.

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BIBLIOGRAPHY

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