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CoolGuru E-Commerce Website using Sentiment Analysis Prediction

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ABSTRACT

The Cool Guru is a brick-and-mortar establishment that has been repurposed into a fulfillment center. These distribution hubs are not accessible to the general public, allowing for ample inventory space and efficient order fulfillment. Cool Gurus offer an extensive and ever-expanding array of resources, enabling customers to purchase products online with options for same-day delivery or even within hours, as well as in-store pickup. While the concept is not novel, various companies, including Whole Foods, Walmart, Target, Bed Bath & Beyond, and numerous major clothing retailers, have employed similar strategies. However, with brick-and-mortar stores facing challenges during closures, the prevalence of Cool Gurus has surged. Our team is currently developing a Cool Guru utilizing NLP technology to analyze real-time customer feedback and sentiment, enabling us to automate product ranking and enhance customer satisfaction.

Keywords: Cool Guru, brick-and-mortar, lockdown, shoppers, Bed Bath & Beyond, Natural Language Processing, Sentiment Analysis.

I. INTRODUCTION

The E-Commerce platform, Cool Guru, harnesses the power of Sentiment Analysis Prediction within the innovative framework of the MERN Stack Project. This integration not only facilitates product sales but also enhances marketing strategies through the analysis of customer feedback. The surge in E-Commerce predates the global onset of the COVID-19 pandemic, signaling a significant shift in consumer behavior towards online purchasing.

As the pandemic unfolded, its impact accelerated the growth of E-Commerce, prompting businesses to reassess their retail strategies. Cool Guru's adaptation of dark store spaces exemplifies this trend, utilizing these facilities as eCommerce warehouses and micro-fulfillment hubs. Named for their operational opacity to the public, dark stores are emerging as key components in sectors such as grocery, food, homeware, big box retail, and furniture industries.

Cool Guru establishments provide a fusion of online shopping ease and the accessibility of physical stores, culminating in an exceptional customer journey. With a foundation rooted in automation, these customer-centric spaces redefine the purchasing journey, enabling individuals to seamlessly place orders online for direct doorstep delivery or hassle-free pickup from designated collection points. As the retail landscape undergoes continuous transformation, Cool Guru's pioneering strategies remain at the vanguard, adeptly catering to the evolving tastes and requirements of contemporary consumers.

The utilization of advanced technologies like Sentiment Analysis Prediction within the MERN Stack Project underscores Cool Guru's commitment to enhancing customer satisfaction and refining marketing strategies. By delving into the nuances of customer feedback, Cool Guru can tailor its offerings to meet the evolving demands of its clientele, fostering brand loyalty and driving sales growth.

The rise of Cool Guru establishments, driven by the rapid expansion of E-Commerce, signifies a pivotal shift in retail

dynamics. These adaptable spaces not only function as fulfillment centers but also represent a strategic response to the challenges presented by the pandemic. In the face of closures and limitations imposed on traditional brick-and-mortar stores, Cool Guru emerged as a nimble solution, effortlessly navigating the evolving retail landscape.

Moreover, the versatility of Cool Guru extends beyond the boundaries of E-Commerce, permeating various sectors including homeware, big box retail, and the furniture industry. Their seamless integration of online convenience with physical accessibility positions them as essential elements in modern retail strategies. As Cool Guru continues to innovate and refine its approach, these establishments are poised to play a fundamental role in shaping the future of retail, offering customers unprecedented convenience and efficiency.

II. LITERATURE SURVEY

[1] Recent studies highlight the development and effectiveness of AI-powered healthcare chatbots. Bushra Kidwai and Nadesh RK (2020) created a diagnostic chatbot using decision trees for symptom mapping and diagnosis, emphasizing its interactive nature andperformance evaluation using Round-Trip Time.

[2] Papiya Mahajan et al. (2020) proposed a healthcare chatbot employing NLP techniques to offer personalized diagnoses based on user symptoms. However, the study lacked performance evaluation metrics.

[3] Harsh Mendapara et al. (2021) developed a healthcare chatbot integrating AI and NLP for self-diagnosis and disease information retrieval. The study reported precise and quick results, highlighting the chatbot's effectiveness in assisting users with healthcare queries.

[4] This provides a text-to-text conversational age that asksthe user about their health issue. The user can chat as if chatting with a human. The bot then asks the user a series of questions about their symptoms to diagnose and gives suggestions about the different symptoms to clarify the disease. Doesn't give detailed information No features such as duration, intensity of symptoms etc.

[5] The proposed method is a chatbot based mobile healthcare service that can immediately respond to the accidents that arise in everyday life and to the condition changes of chronic-disease patients. Also proposes a framework for the human-robot interaction that can endure an efficient implementation of the chatbot service. It is a text-based bot irrespective of having all advanced features.

[6] Conversational agents have many technical, design and linguistic challenges. They introduced the nature of conversation user interface(CUI) for health and describedUX design. Some technical limitations like voice messageare not accurate, some corruptions are faced due to the network, so the timing of bot remainders is corrupted.

[7] The Bot Transition program provides a framework and resources based on AAP, AFP and ACP recommendations to promote skill attainment in self-care. A scripted text messaging platform is feasible and appears to be well- received by patients and caregivers. It is designed only forpeople with special health needs transitioning intoadolescents.

[8] The system uses a question-and-answer protocol in the form of a chatbot to answer users' queries. The complex questions and answers present in the database are viewed and answered by an expert. This chatbot is comparatively time consuming.

[9] This chatbot is an attempt to let users understand the symptoms they are facing and get a basic diagnosis about the disease they could be having. Complex interface, timeconsuming, high installation cost.

[10] A chatbot is an interactive software application to simulate natural user interactions based on AI modelling. We have

proposed a dataset for the commonly occurring medical conditions together with a prototype model to provide quick assistance to the patients. It only givessolutions for the common medical conditions.

[11] Uses both KNN algorithm and decision tree classifierand from that more accurate one is taken and shows the output. As it uses both algorithms it is time consuming.

III. EXISTING SYSTEM

In the current healthcare landscape, traditional methodsof healthcare delivery rely heavily on face-to-face interactions between patients and medical professionals.While these interactions offer personalized care, they are often constrained by factors such as geographical barriers and limited availability of healthcare providers.In response to these challenges, digital health solutions have emerged, including mobile health applications, wearable devices, and telemedicine platforms. These solutions aim to improve healthcare access by offering

remote monitoring and consultations, leveraging technologies like mobile apps and video conferencing.

However, existing digital health solutions still face challenges such as integration issues, interoperability, and user adoption. Many lack advanced AI capabilities needed to provide personalized and intelligent assistance to users. Moreover, concerns about dataprivacy, security, and regulatory compliance remain significant barriers to widespread adoption.

In this context, AI-driven healthcare chatbots have garnered attention for their potential to address existing gaps in healthcare delivery. These chatbots offer intelligent, conversational interfaces that can assist users with various healthcare tasks, including symptom assessment, disease diagnosis, medication management,and health education. By leveraging AI technologies like natural language processing (NLP) and machine learning (ML), these chatbots can understand user queries, provide personalized recommendations, and continuously improve their performance through user interactions.

IV.PROPOSED SYSTEM

The proposed system integrates a Django-based backend for predictive healthcare analysis with a React-based frontend featuring an AI-driven chatbot interface. This hybrid system aims to provide users with comprehensive healthcare assistance, including predictive analysis for heart disease detection and interactive chatbot interactions for personalized health guidance and support.

4.1 Django Backend:

The Django backend serves as the foundation forpredictive healthcare analysis. It includes a pre-trained machine learning model for heart disease prediction, loaded using the joblib library. The index view renders themain web page where users can interact with the chatbot interface. The predict view handles incoming POST requests containing user data, performs prediction using the loaded model, and returns the predicted result as a JSON response.

4.2 React Frontend with Chatbot:

The React frontend features an interactive chatbot interface powered by the React Chatbot Kit. The chatbot isconfigured with a custom MessageParser to interpret user messages and an ActionProvider to handle responses and actions. Additionally, the frontend includes a Header

component to enhance the user experience by providing context and branding.

4.3 Integration:

The integration of the Django backend and React frontend enables seamless communication between the predictive healthcare analysis and the chatbot interface. Users can input their health data through the chatbot interface, whichsends a POST request to the Django backend for prediction.The backend processes the request, performs prediction using the pre-trained model, and sends the result back to the frontend. The frontend displays the prediction to the user and provides additional support and information through the chatbot interface.

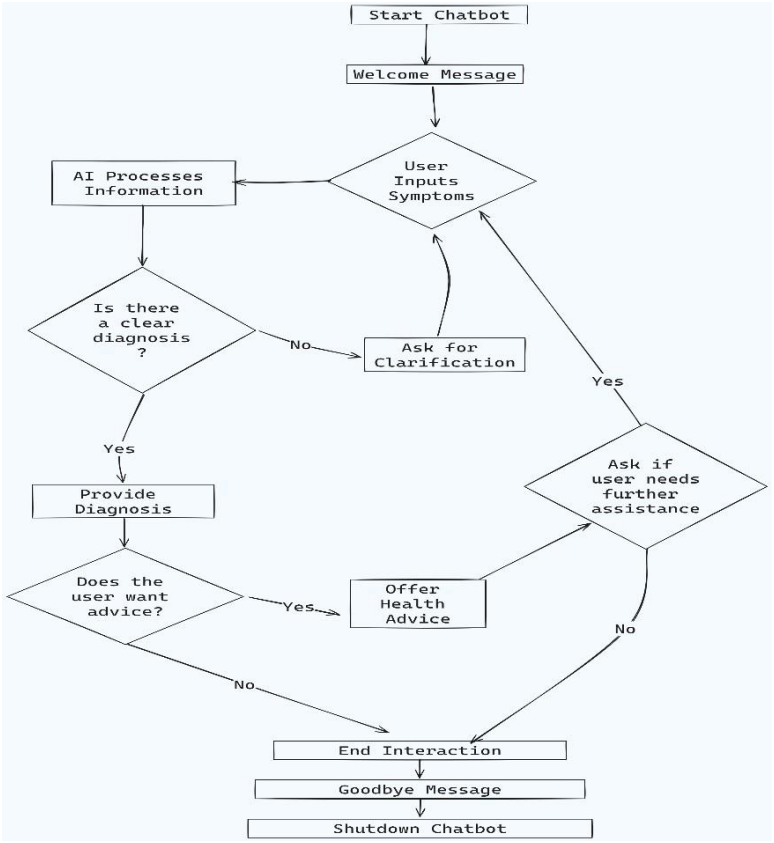

Figure 1. Working functionality of the chatbot.

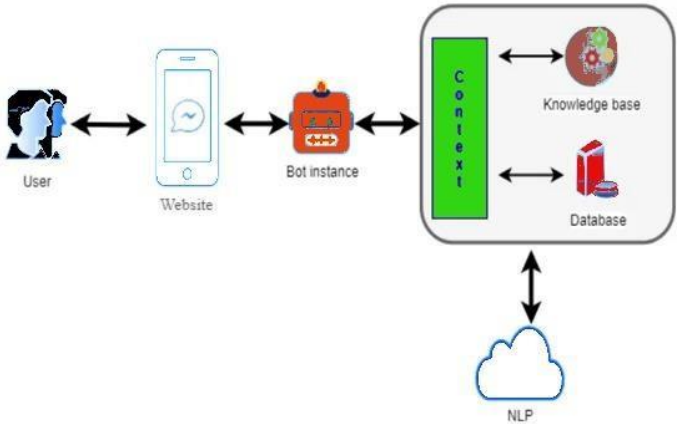

Figure 2. The design of AI chatbot functionality.

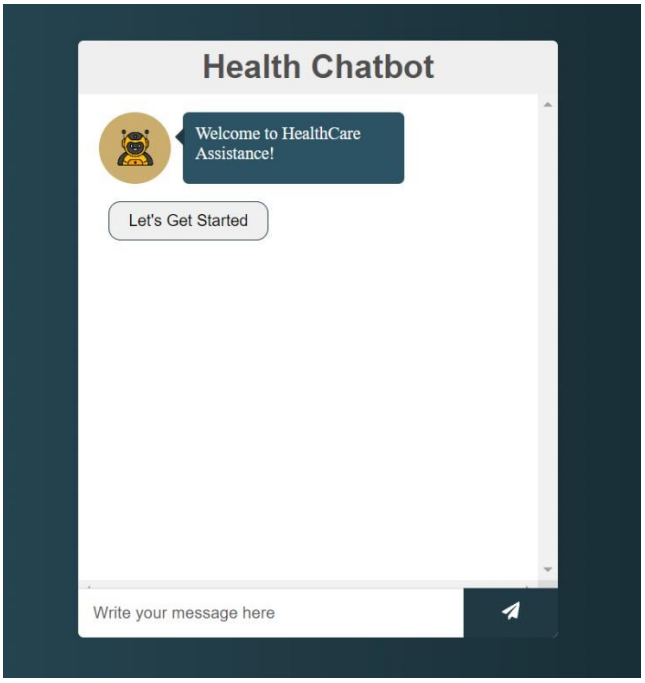

Figure 3. Screenshot 1

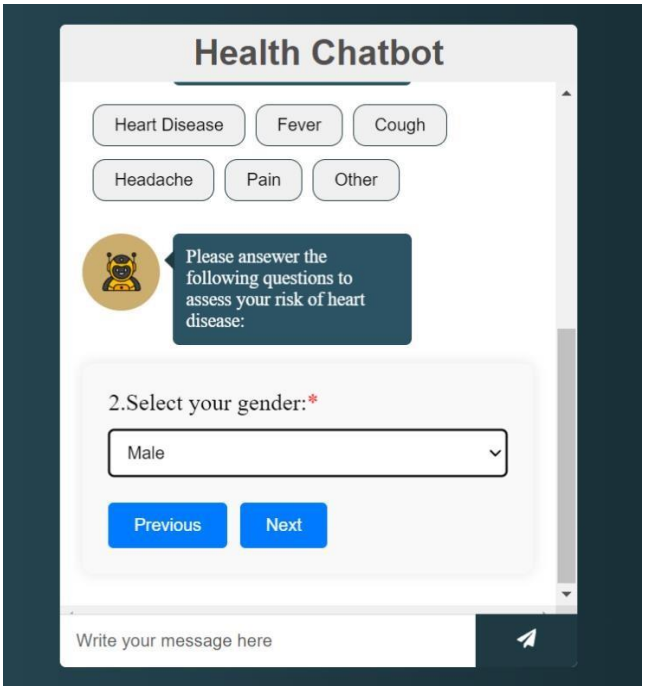

Figure53. Screenshot 3

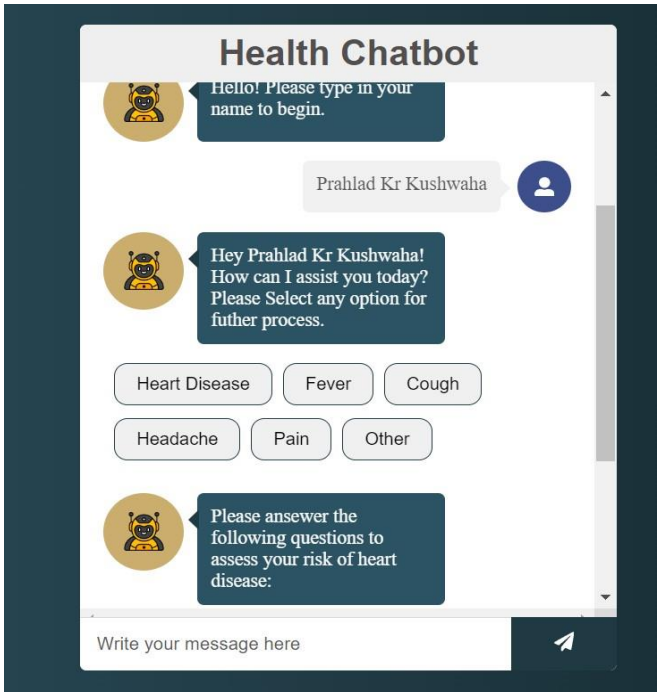

Figure 4. Screenshot 2

V. RESULT AND DISCUSSION

The proposed system offers an efficient, cost-effective, and user-friendly solution for patients to engage in one-on-one conversations with a healthcare chatbot, facilitating effective health management. By leveraging the chatbot interface, users can effortlessly communicate their symptoms and receive prompt assistance and guidance. Accessible from anywhere and at any time, the system ensures convenience and availability, operating round the clock.

VI. REFERENCES

[1] Bushra Kidwai, Nadesh RK, "Design and Development of Diagnostic Chabot for supporting Primary Health Care Systems", International Conference on Computational Intelligence and Data Science (ICCIDS 2019).

[2] Papiya Mahajan, Rinku Wankhade, Anup Jawade, Pragati Dange, Aishwarya Bhoge, "Healthcare Chatbot using Natural Language Processing", International Research Journal of Engineering and Technology (IRJET), Volume 07, Issue 11, Nov 2020.

[3] Harsh Mendapara, Suhas Digole, Manthan Thakur, Anas Dange, "AI Based Healthcare Chatbot System by Using Natural Language Processing", International Journal of Scientific Research and Engineering Development, Volume 4, Issue 2, Mar- Apr 2021.

[4] Lin Ni(B), Chenhao Lu, Niu Liu, and Jiamou Liu," MANDY: Towards a Smart Primary Care Chatbot Application", SPRINGER,2017.

[5] Divya, S., V. Indumathi, S. Ishwarya, M. Priyasankari, and S. K. Devi (2018). A self-diagnosis medical chatbot using artificial intelligence. Journal of Web Development and Web Designing, 3(1), 1–7.

[6] Chung, K. and R. C. Park (2019). Chatbot-based Heathcare service with a knowledge base for cloud computing. Cluster Computing, 22(1), 1925–1937.

[7] Ahmed Fadil, Gianluca Schiavo, "Design for healthcare chatbot"Arxiv, 2019.

[8] Beaudry, J., A. Consigli, C. Clark, and K. J. Robinson (2019). Getting ready for adult healthcare: Designing a chatbot to coach adolescents with special health needs through the transitions of care. Journal of pediatric nursing, 49, 85–91.

[9] Kavitha, B. and C. R. Murthy (2019). Chatbot for healthcare system using artificial intelligence.

[10] Kandpal, P., K. Jasnani, R. Raut, and S. Bhorge, Contextual chatbot for healthcare purposes (using deep learning). In 2020 Fourth World Conference on Smart Trends in Systems, Security and Sustainability (WorldS4). IEEE, 2020.

[11] A. F. Ur Rahman Khilji, S. R. Laskar, P. Pakray, R. A. Kadir, M. S. Lydia and S. Bandy-opadhyay, "HealFavor: Dataset and A Prototype System for Healthcare ChatBot," 2020 International Conference on Data Science, Artificial Intelligence, and Business Analytics (DATABIA), 2020.