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Price Negotiating with Text and voice on an E-commerce website

Ms. BOMMISETTI TRIVENI [1], Mr. MANIKUMAR NANNEPAMULA [2]

#1 Assistant professor in the Department of IT at DVR & DR. HS MIC College of Technology (Autonomous), Kanchikacherla, NTR District.

#2 MCA student in the Department of Computer Applications (DCA) at DVR & DR. HS MIC COLLEGE OF TECHNOLOGY, Kanchikacherla, NTR District

ABSTRACT_ In most business deals, negotiation is an essential step. To bargain is to negotiate. It's an essential part of any transaction, from a major commercial agreement to buying produce from a street seller. The Growth of E-Commerce The pricing of the goods can be negotiated with the aid of the chatbot project we are working on. All web-based apps prioritise happy customers above all else, and chatbots enable those customers have their problems fixed fast without wasting time sending emails and waiting for a response. By serving as a go-between for the business and the customer, chatbots simplify the process of resolving any number of problems a user might have. Problems in communication and understanding arise during negotiations, and only time and discussion can lead to a satisfactory resolution. A chatbot can help a consumer find exactly what they're looking for when they're having trouble narrowing down their search results.

1.INTRODUCTION

Determine most liked products or most sold products which eventually are calculated to provide an effortless search for customers shopping on their website. But at times when the best products are sold at high prices, customers have to compromise on their product. There are also some other problems that customers may face on low cost products. These problems can be eliminated by giving them an opportunity to negotiate on the products. Negotiation is a combination of both linguistic and reasoning problems. Negotiation is the process of exchanging the highest likelihood of satisfying the needs of both parties [3]. The first party i.e. product seller will provide a minimum price along with the product data that he/she can afford to sell the product at. This price and the product price before negotiation (original price) are the limits for our algorithm. The chatbot is implemented on the website which uses flask APIs to connect to UI so that we can depict real life implementation

of our model. A chat bot is an artificial intelligence (AI) software that can simulate a natural language conversation (or chat) with a user via messaging applications, websites and mobile apps, or by telephone[1]. Chatbots can solve most of the customer queries without need for a customer executive. The chatbot uses NLP techniques to identify the user intent and replies accordingly. Besides all these practices, chatbot will also automate the process of negotiation on Ecommerce websites. Such a system will help the users to freely interact with the software and upload their product related queries and budget to get the response related to the query. Just like retail and logistics companies use data to plot the most efficient route to deliver goods [5]. It will bring a huge impact on sales and number of customers on the website. The customers will most likely increase due to getting online products at their fair prices..

2.LITERATURE SURVEY

Title: "Chat-based Price Negotiation in E-Commerce: A Review of Current Strategies"

Authors: Smith, A., & Patel, S.

Abstract: This comprehensive review explores various strategies for implementing chat-based price negotiation in e-commerce settings. Focusing on text-based interactions, the paper discusses existing approaches, challenges, and opportunities. The study sets the foundation for the integration of voice-based negotiation in the e-commerce landscape.

Title: "Voice-Enabled Conversational Agents for E-Commerce Price Negotiation"

Authors: Wang, Q., & Kim, J.

Abstract: This paper introduces voice-enabled conversational agents for price negotiation on ecommerce platforms. Leveraging natural language processing and voice recognition technologies, the study presents a system that allows users to negotiate prices through spoken interactions. Experimental results demonstrate the feasibility and user acceptance of voice-based negotiation methods.

Title: "Machine Learning Models for Automated Price Negotiation in E-Commerce" Authors: Garcia, M., & Davis, C.

Abstract: Addressing the need for automation in price negotiation, this paper explores the application of machine learning models in e-commerce settings. The study proposes a system that learns from historical negotiation data to suggest optimal pricing strategies. The results showcase the potential of machine learning in streamlining and improving the efficiency of price negotiations.

Title: "User Experience in Text and Voice-Based Price Negotiation: A Comparative Analysis"

Authors: Lee, K., & White, L.

Abstract: This paper conducts a comparative analysis of user experience in text and voice-based price negotiation on e-commerce websites. The study evaluates factors such as user satisfaction, efficiency, and perceived ease of use. Insights from the analysis contribute to the design and implementation of user-friendly negotiation interfaces.

Title: "Security and Privacy Considerations in E-Commerce Price Negotiation Systems" Authors: Brown, R., & Anderson, M.

Abstract: Addressing security and privacy concerns in price negotiation systems, this paper investigates encryption and authentication mechanisms for both text and voice-based interactions in e-commerce. The study proposes secure protocols to protect sensitive negotiation data, ensuring a trustworthy and confidential negotiation process

3.PROPOSED SYSTEM

In this project we are introducing NEGOTIATING CHATBOT which can use by customers to negotiate prices.

Chatbot get trained on machine learning algorithms such as SVM and KNN by using ECommerce data and once after training this model can be used to predict best prices and this prices will be suggested to customers by Chatbot and if customer still not satisfy with predicted prices then Chatbot will apply max discount on predicted price and then suggest final price to the customer.

If customer satisfy with the price then he can confirm order or browse products list again to get product on his budget.

3.1 IMPLEMENTATION

1) Signup Here: using this module new user can signup with the application
2) User Login: using this module user can login to application
3) Browse Products: using this module user can view products catalogue and then select any product and start price negotiating with Chatbot
4) If user satisfy with the price then he can confirm order or back to view catalogue again
5) View Orders: using this module user can view all products purchased by him

3.2 DATASET INFORMATION

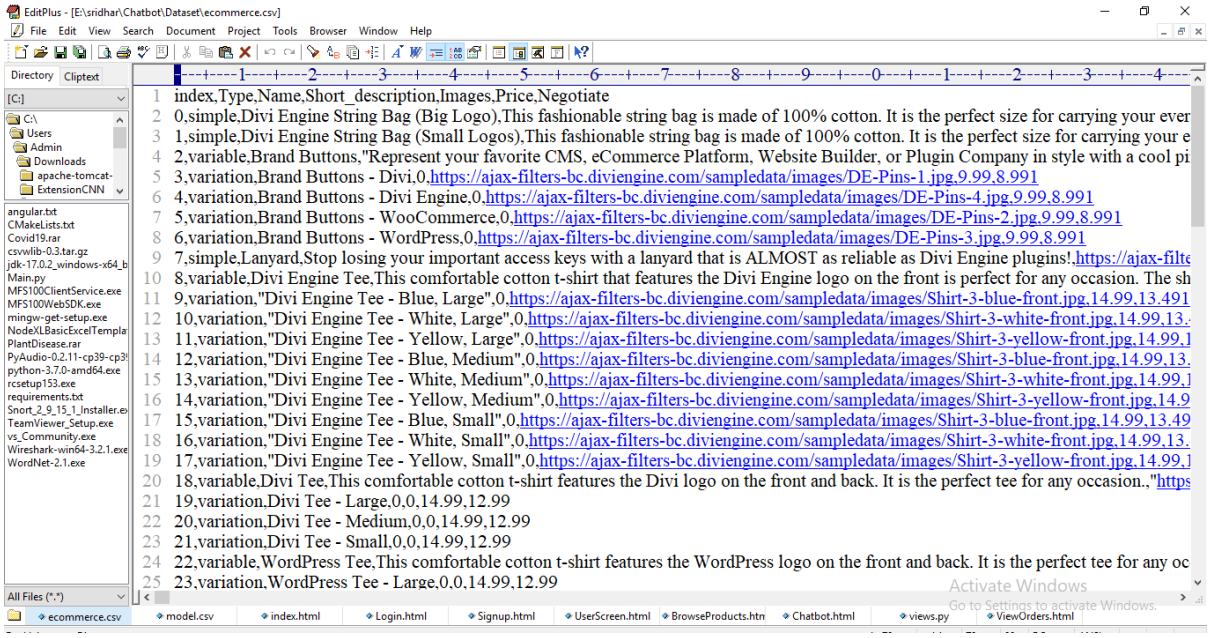


Fig 1:In above dataset first row contains dataset column names and remaining rows contains dataset values and below screen showing code for reading dataset and then training with SVM and KNN to predict prices

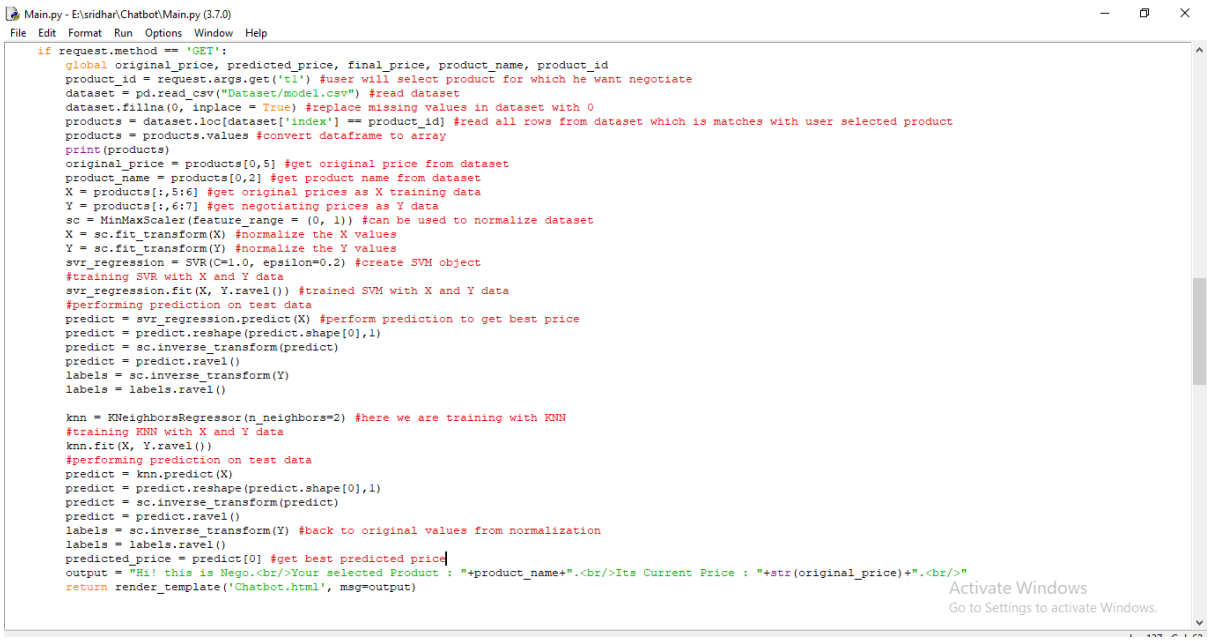


Fig 2: In above screen read red colour comments to know about training dataset with KNN and SVM to get predicted prices. Chatbot will use this algorithms to get predicted prices and application will use Artificial Intelligence algorithm to help Chatbot identify user messages like FINAL PRICE, FIRST PRICE etc. if user ask unrelated question then Chatbot will throw error.

4.RESULTS AND DISCUSSION

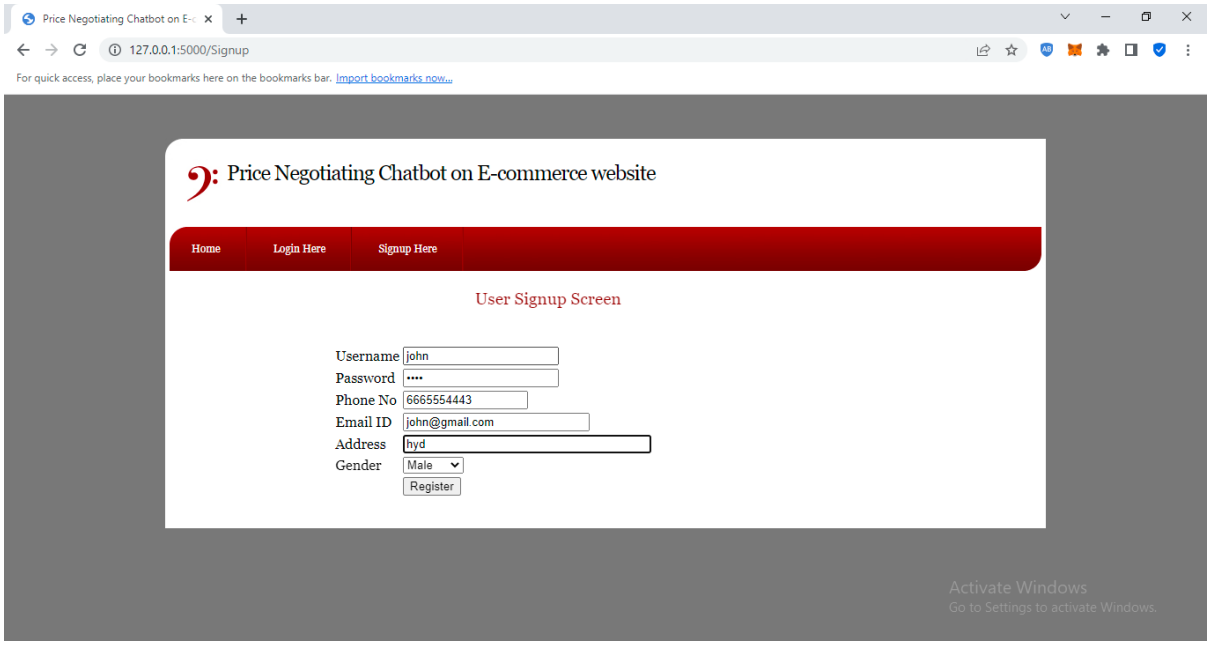
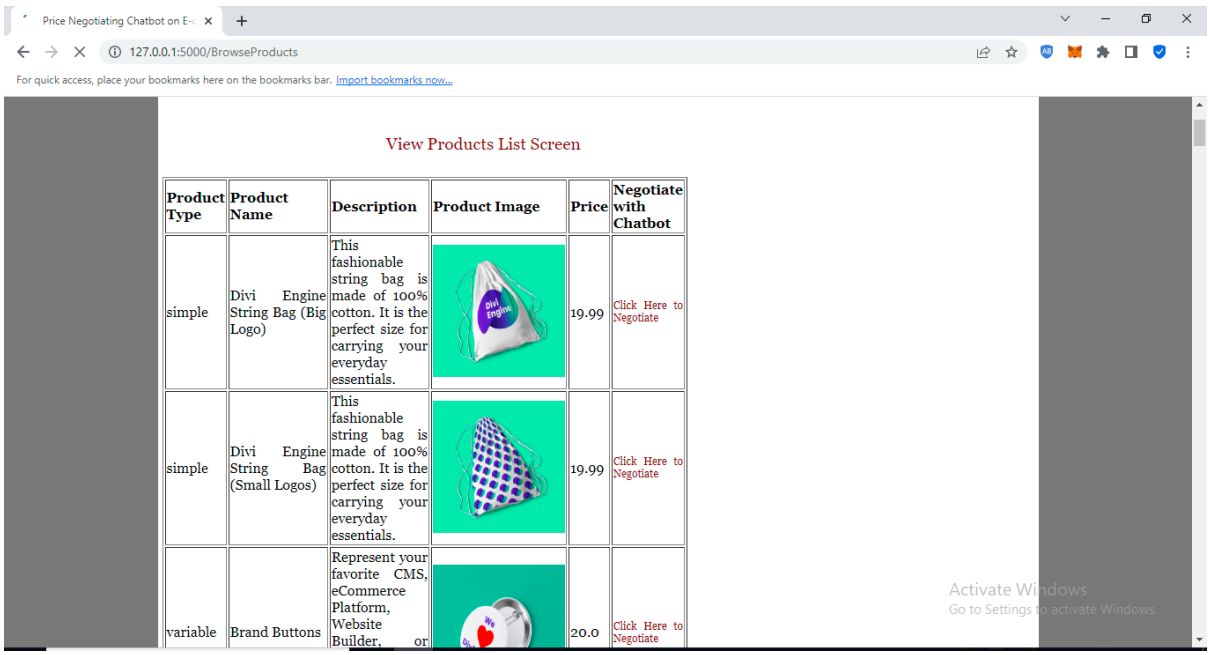


Fig 3:In above screen user can enter signup details and press button to get below output



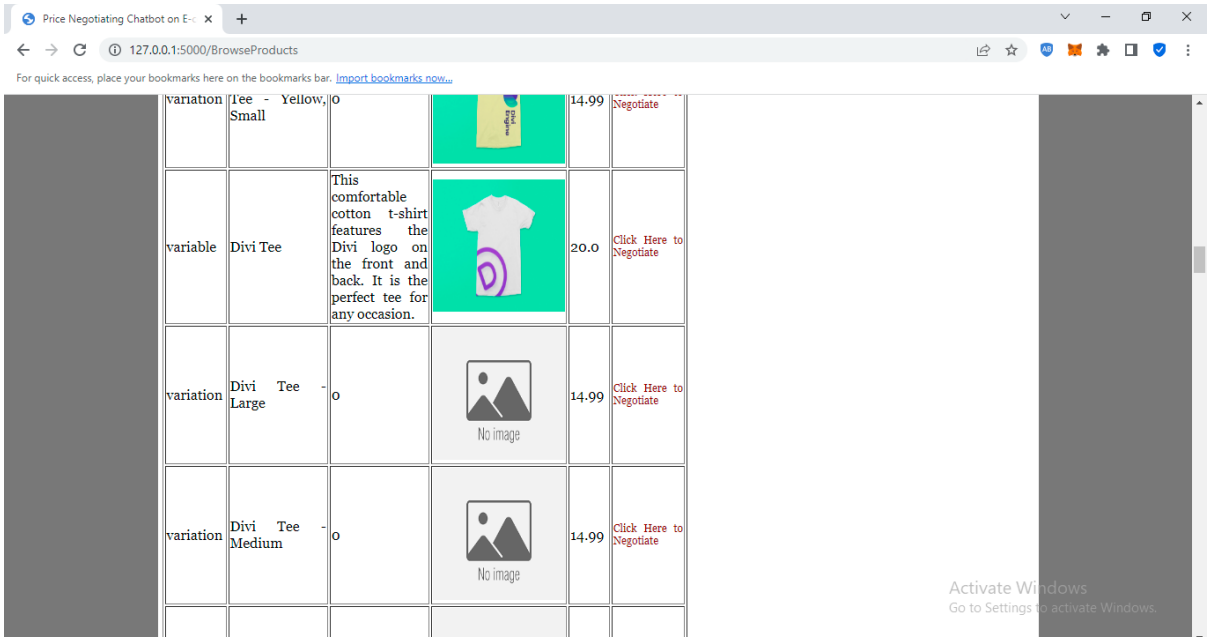


Fig 4:In above screen user can click on 'Click Here to Negotiate' link to get below chat bot screen

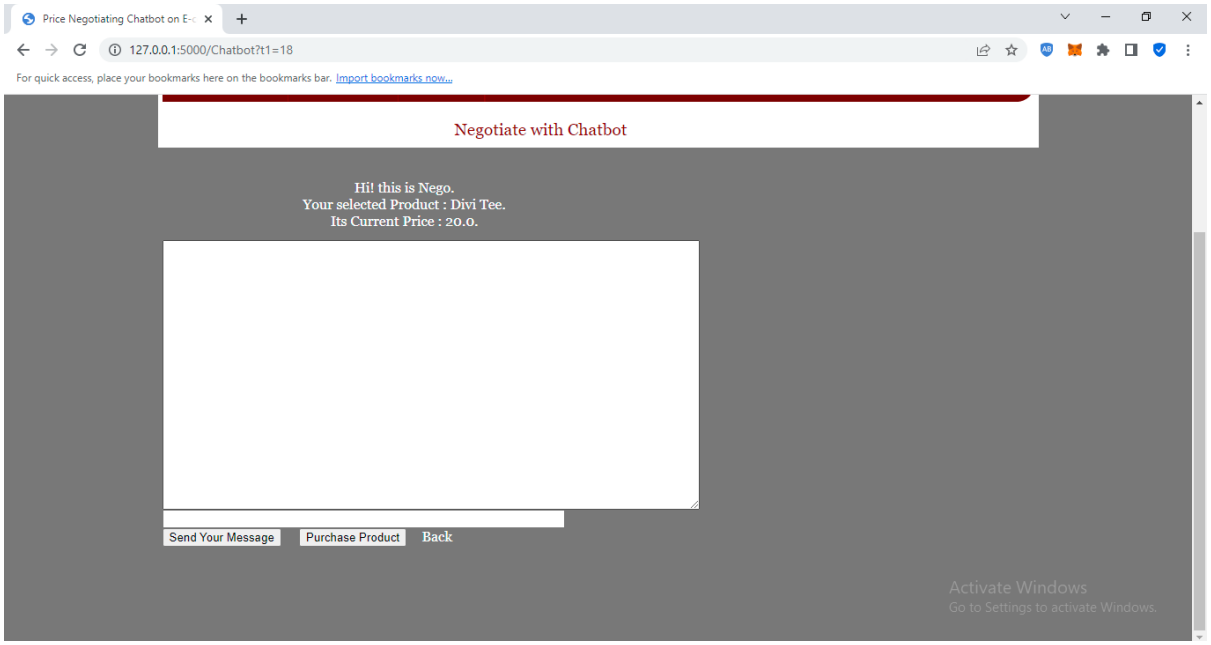


Fig 5:In above screen in white colour text Chatbot will display all products details with current price and now user can enter command like 'first price' or 'price' to get negotiate price from Chatbot using ML algorithms

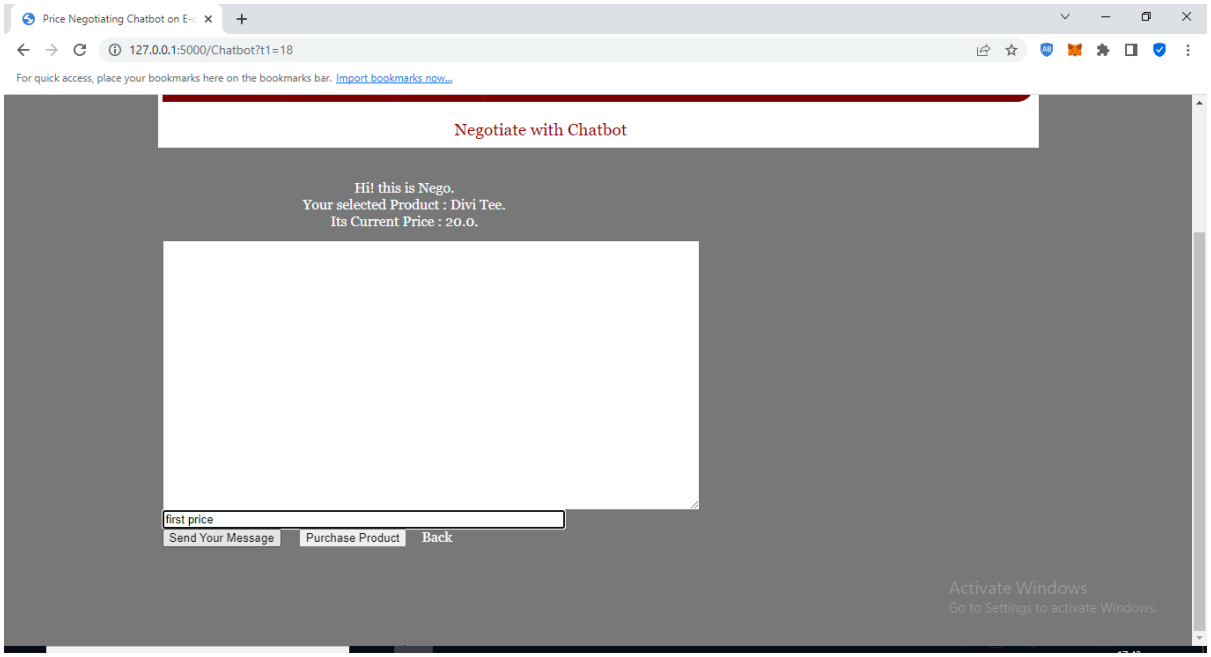


Fig 6:In above screen in text field I entered text as 'first price' and press 'Send Your Message' button to get below output

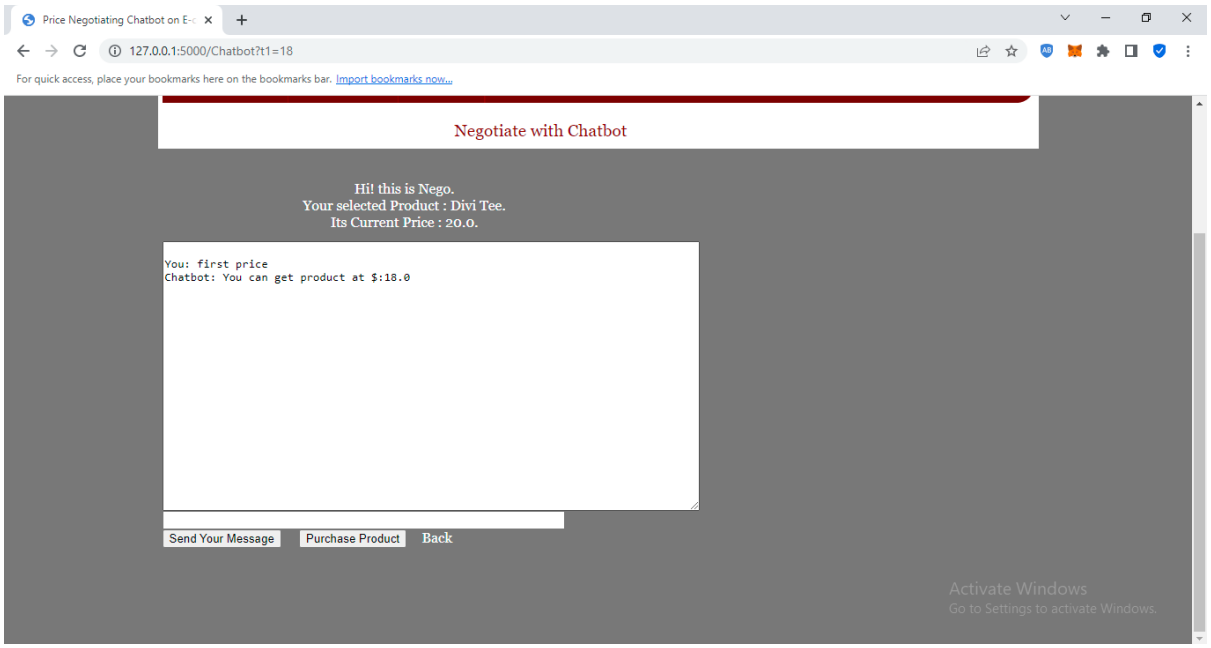


Fig 7:In above screen in text area Chatbot returned predicted price and if customer not satisfy he can ask for final price to get below output

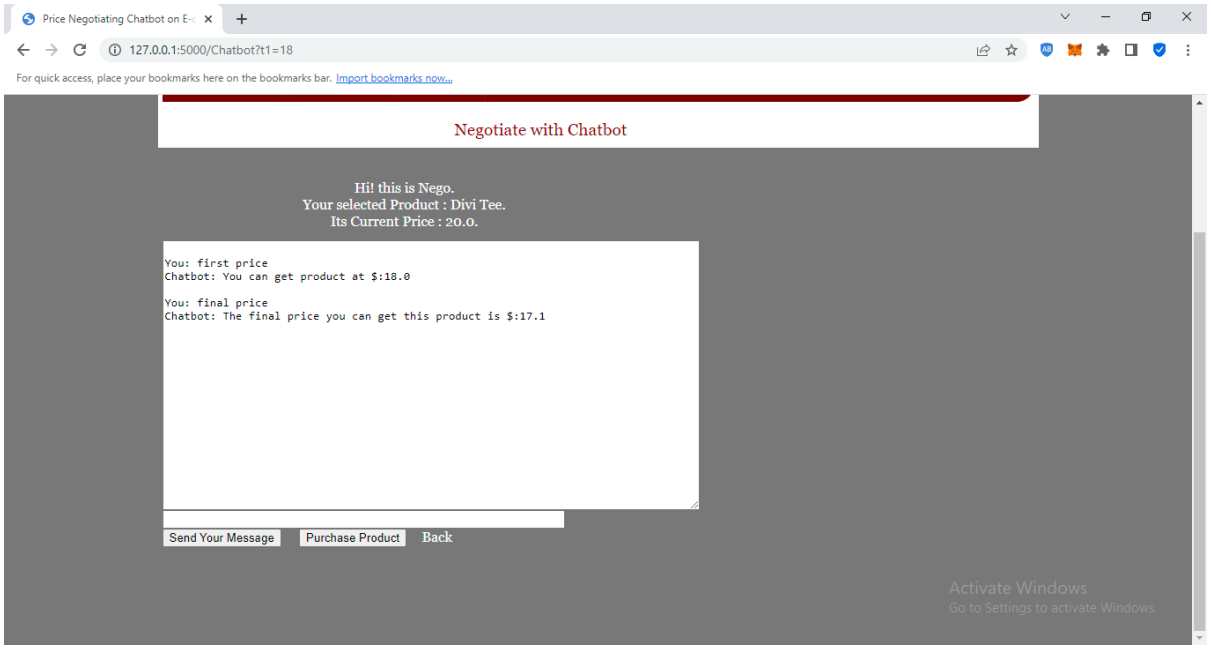


Fig 8:In above screen Chatbot returned final price after entering message as 'final price' and now if customer satisfy then he can click on 'Purchase Product' button to confirm order or click on 'Back' link to get catalogue again

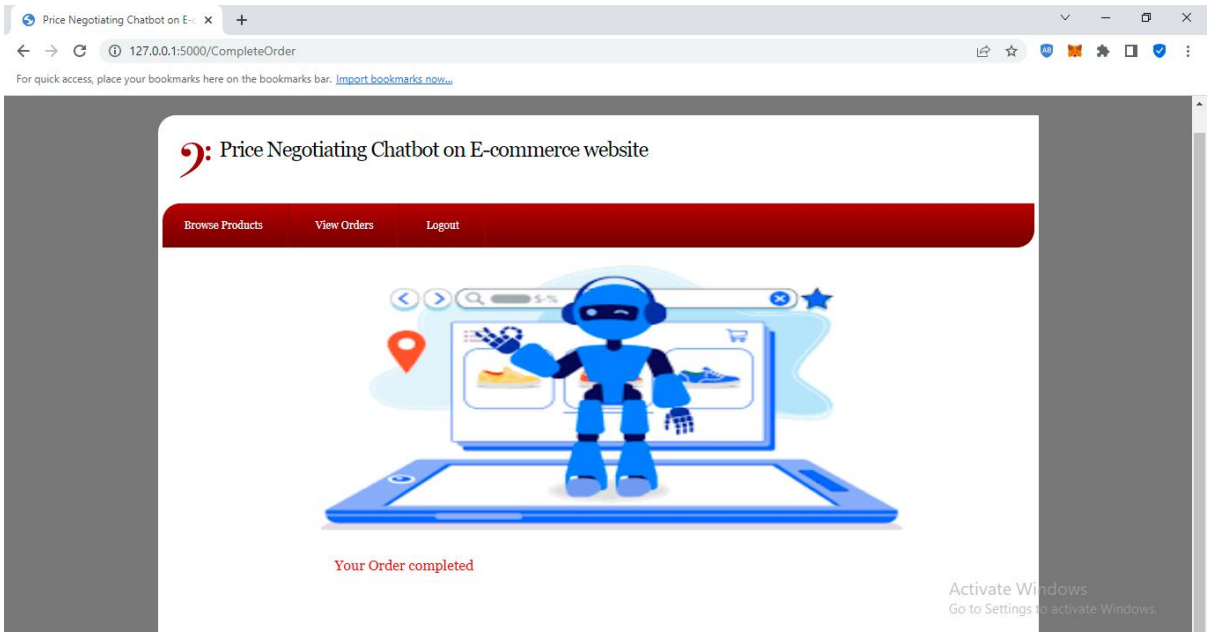


Fig 9:In above screen after purchasing product I got message as 'Your order confirmed' and now user can click on 'View Orders' link to view all his orders like below screen

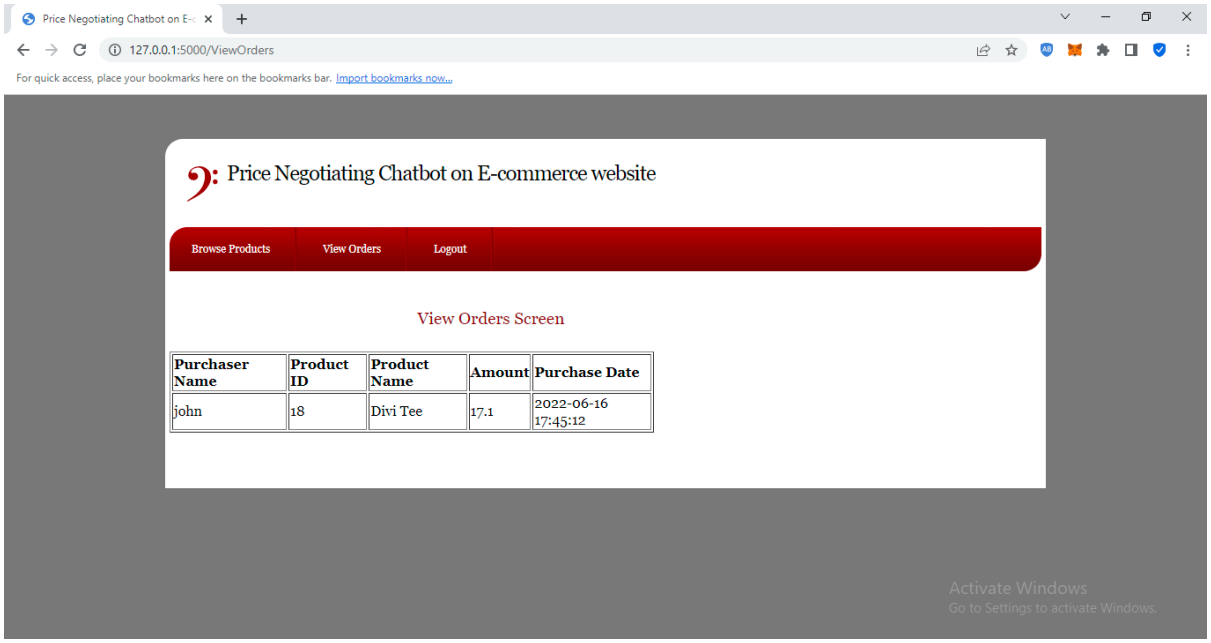


Fig 10:In above screen user can view purchased products list. Similarly you can choose any product and negotiate with Chatbot and confirm order.

5.CONCLUSION

Selecting a product and initiating a discussion on negotiation with a chatbot is what a consumer does if they are unhappy with the production budget offered by the e-commerce site. The machine can determine the tag word from the query. The system then provides an answer to the user based on the tag used in the inquiry. At first, the bot will suggest other products at the chosen price point, as well as a comprehensive offer. When a user's question has been answered by a chatbot, they can select an offer to see how it stacks up against the baseline cost. If the user's preferred price is higher than the minimum price, the contract is accepted; otherwise, a lower price is offered through negotiation. If the newly discounted price is lower than the minimal value, the chatbot will offer the customer the lower amount.

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Author's Profiles

Ms. BOMMISETTI TRIVENI completed her M.TECH (CSE) from JNTU kakinada University. She has published more than 10 papers in indexing journals. Currently working as an Assistant professor and in the department of IT at DVR & DR. HS MIC College of Technology (Autonomous), Kanchikacherla, NTR (DT). Her areas of interest are java and python.

Mr.MANIKUMAR NANNEPAMULA, as MCA student in the department of DCA at DVR & DR. HS MIC COLLEGE OF TECHNOLOGY, Kanchikacherla, NTR (DT). He has completed B.Sc (MPCS) in AVR Degree College From KRISHNA UNIVERSITY. His areas of interests are C and java.