

ShopAssist 2.0

1. Project Overview ::

ShopAssist 2.0 is an innovative chatbot which got developed to provide a good experience w.r.to online shopping. Here user is looking out for buying a laptop and our chatbot is going to help user in narrowing down on the different options present and provide recommendations.

This chatbot combines the power of LLMs(Large Language models) and rule base functions to get an accurate information.

2. Problem Statement

We are given a dataset (in the form of .csv file) which has all the details about different laptops having their configurations, usage issues, brand names, budget etc. We need to build a chatbot which provides recommendations to users based on their requirements.

3. Key Objectives

Here are the key objectives of this project ::

- User Interaction
- Parse given dataset and have relevant information
- Based on user inputs, query and get user requirements
- Provide recommended laptops

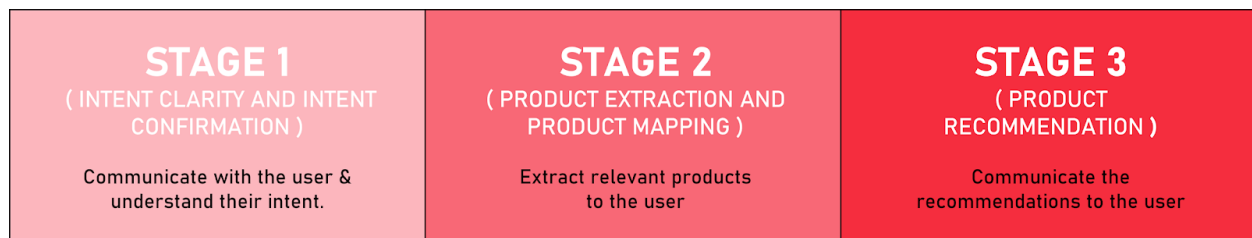
4. Approach

- Conversation and Information Gathering: The chatbot will utilize language models to understand and generate natural responses. Through a conversational flow, it will ask relevant questions to gather information about the user's requirements.
 - Determine the user's requirements:: For simplicity, we have used 6 features to encapsulate the user's needs.
 - The 6 features are as follows: -
 - GPU intensity
 - Display quality
 - Portability

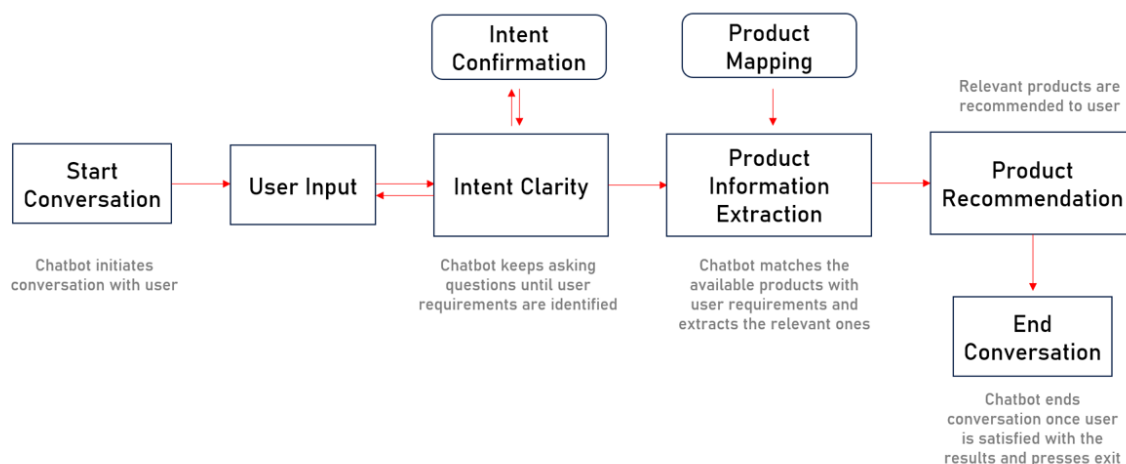
- Multitasking
- Processing speed
- Budget
- Information Extraction: Once the essential information is collected, rule-based functions come into play, extracting the top three laptops that best match the user's needs.
- Personalized Recommendation: Leveraging this extracted information, the chatbot engages in further dialogue with the user, efficiently addressing their queries and aiding them in finding the perfect laptop solution.

5. High Level System Design

ShopAssit 2.0 is built using client-server architecture. For user interaction chatbot is provided on web browser which will be interacting with OpenAI LLM for having conversations, moderations, and provides recommendations to users based on their requirements. Flask framework is used to host chatbot on web based platform



CHATBOT SYSTEM DESIGN



6. Project Stages

This project is divided into three stages:

- Stage 1: Intent Clarity and Confirmation
- Stage 2: Product Mapping and Information Extraction
- Stage 3: Product Recommendation

Stage 1: Intent Clarity and Confirmation ::

This stage involves initiating and managing the conversation between the user and the AI system.

Key Functions:

`initialize_conversation()`: Starts the conversation with the user.

`get_chat_completions()`: Continuously processes user inputs and generates LLM responses.

`moderation_check()`: Flags and halts conversations containing unsafe or sensitive content.

Stage 2: Product Mapping and Information Extraction

This stage filters laptops based on user requirements and identifies the top recommendations.

Key Functions:

`product_map_layer()`: Extracts and maps key features (e.g., GPU intensity, display quality) from the dataset.

`compare_laptops_with_user()`: Matches user requirements against the laptop features to calculate scores.

`recommendation_validation()`: Validates the recommendations to ensure they meet quality thresholds.

Stage 3: Product Recommendation

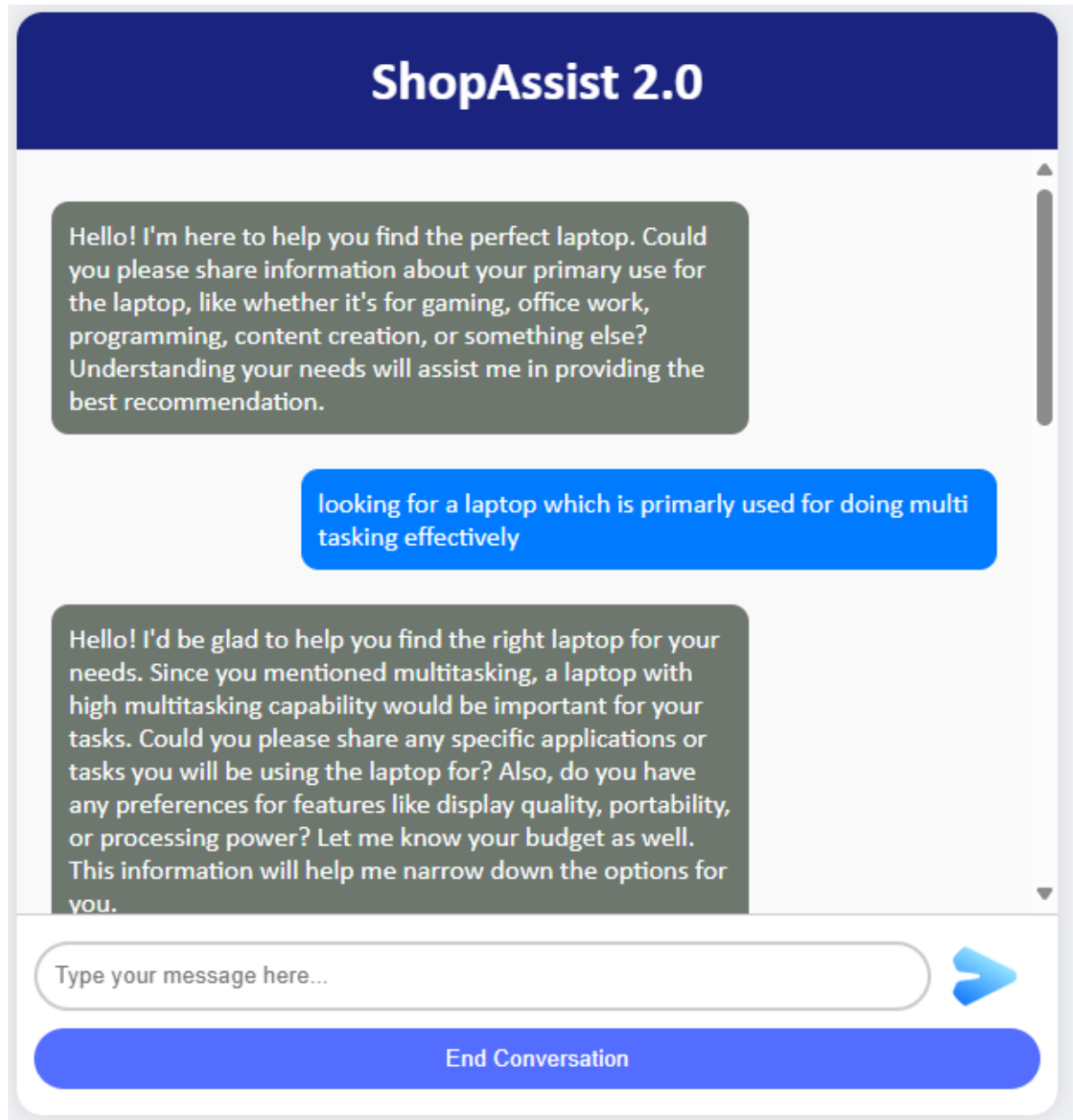
This stage delivers recommendations and engages in further conversation.

Key Functions:

`initialize_conv_reco()`: Generates a structured conversation with summarized laptop recommendations.

`get_chat_completions()`: Facilitates follow-up queries and detailed discussions about the recommended laptops.

7. Screenshots



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This information will help me narrow down the options for you.

no preferences on display quality, portability and processing side.

Thank you for sharing that information. Based on your response, I will consider display quality, portability, and processing speed to be of medium importance, given there are no specific preferences. Could you also specify your budget for the laptop? This will help me in recommending options that fit your requirements while staying within your price range.

70000

Thank you for providing all the information. Kindly wait, while I fetch the products:

Type your message here...



End Conversation

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Certainly! Here are brief summaries of each laptop from the catalogue, listed in decreasing order of price: 1.

****Lenovo ThinkPad****: Equipped with an AMD Ryzen 7 processor at 3.0 GHz, 16GB RAM, SSD storage, a 14" IPS display with a 2560x1440 resolution, and NVIDIA GTX graphics. Features a backlit keyboard. Lightweight at 1.6 kg, with a battery life of up to 6 hours. Runs on Linux. Priced at Rs 60,000. 2. ****MSI GL65****: Powered by an Intel Core i7 processor at 2.6 GHz, with 16GB RAM, a combination of HDD+SSD storage, a 15.6" IPS display with 1920x1080 resolution, and NVIDIA GTX graphics. Comes with an RGB keyboard. Weighs 2.3 kg with a battery life of up to 4 hours. Runs on Windows 10. Priced at Rs 55,000. 3. ****Acer Swift 3****: Features an AMD Ryzen 5 processor at 2.3 GHz, 8GB RAM, SSD storage, a 14" IPS display with 1920x1080 resolution, and AMD Radeon integrated graphics. Includes a fingerprint reader for security. Extremely lightweight at 1.2 kg, with a long battery life of up to 9 hours. Runs on Windows 11. Priced at Rs 50,000.

Type your message here...



End Conversation