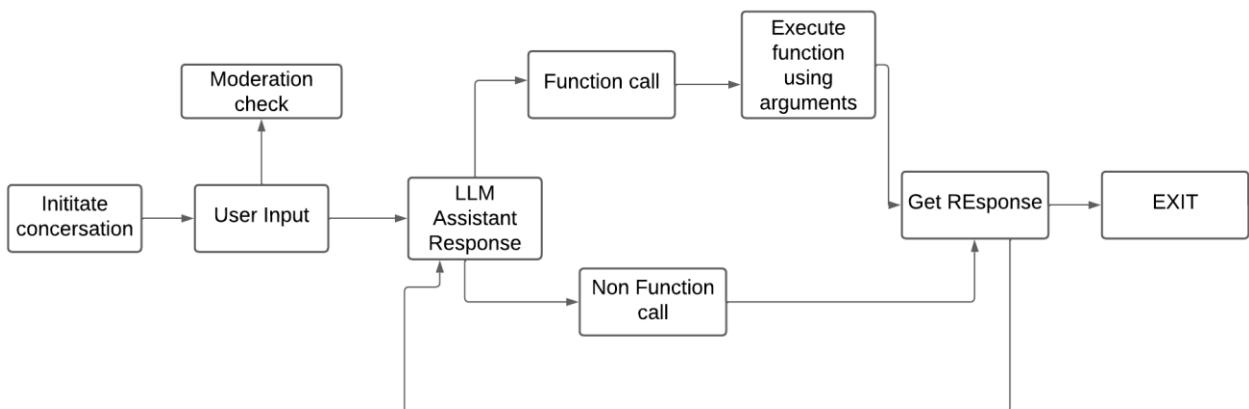


## ShopAssist 2.0 with function calling

ShopAssist AI is a laptop recommendation chatbot that interacts with users , understand their laptop requirements and recommend the most suitable laptops based on their use.

It uses Function calling that allows it to trigger specific functions based on the userInput.

### Flowchart



### Brief overview of functions used:

- `initialize_conversation()`: This initializes the variable conversation with the system message.
- `get_chat_completions()`: This takes the ongoing conversation as the input and returns the response by the assistant
- `moderation_check()`: This checks if the user's or the assistant's message is inappropriate. If any of these is inappropriate, it ends the conversation.
- `intent_confirmation_layer()`: This function takes the assistant's response and evaluates if the chatbot has captured the user's profile clearly. Specifically, this checks if the following properties for the user has been captured or not GPU intensity, Display quality, Portability, Multitasking, Processing speed, Budget
- `dictionary_present()`: This function checks if the final understanding of user's profile is returned by the chatbot as a python dictionary or not. If there is a dictionary, it extracts the information as a Python dictionary.
- `compare_laptops_with_user()`: This function compares the user's profile with the different laptops and come back with the top 3 recommendations.
- `initialize_conv_reco()`: Initializes the recommendations conversation
- `dialogue_mgmt()`: Contains the logic of how the different layers would interact with each other. This will be the function that we'll call to initiate the chatbot

## Step-by-Step Breakdown:

- Retrieves the user's input message using `input()`
- Calls `moderation_check(user_input)` to ensure the input is safe
- Appends user input to the conversation list along with a predefined prompt to instruct the bot  
(`conversation.append({"role": "user", "content": user_input + prompt})`).  
Adds user input to the `conversation_bot` for display purposes.
- Calls `get_chat_model_completions(conversation)` to pass the conversation to the chat model and get a response .
- Checks the response for unsafe content via `moderation_check()`, and if flagged, the conversation ends.
- If the GPT model responds with a `function_call` (a signal that the user provided all necessary info for a recommendation), it proceeds to fetch laptop recommendations.  
Calls `compare_laptops_with_user(function_args)` to extract the top three laptops based on user input. Validates recommendations using `recommendation_validation(top_3_laptops)`. If no suitable recommendations are found, the bot notifies the user.

## Conversation Snapshot:

```
→ Great! As a coder, you likely require a laptop that can handle demanding tasks. Hence, the laptop should have high multitasking capability. You would also need a medium display quality. May I am a developer Intent Confirmation Yes/No: No Thank you for providing that information. Working as a developer involves working with different programming languages, which will require high GPU. What type of languages do you work on? Un I need high processing power and high storage Intent Confirmation Yes/No: No Thank you for the information. Using Python and Javascript will require a good processor and high GPU. I think we have already determined earlier that you need a high GPU. To ensure I have a medium portability Intent Confirmation Yes/No: No Could you kindly let me know your budget for the laptop? This will help me find options that fit within your price range while meeting the specified requirements. 150000 Intent Confirmation Yes/No: Yes {"GPU intensity": "high", "Display quality": "medium", "Portability": "medium", "Multitasking": "high", "Processing speed": "high", "Budget": 150000} Variables extracted! Thank you for providing all the information. Kindly wait, while I fetch the products: top 3 laptops are [{"Brand": "Lenovo", "Model Name": "ThinkPad", "Core": "Ryzen 7", "CPU Manufacturer": "AMD", "Clock Speed": "3.0 GHz", "RAM Size": "16GB", "Storage Type": "SSD", "Display Type": "IPS", "Dimensions": "14.0 x 10.0 x 1.0", "Weight": "2.0 kg", "Processor": "AMD Ryzen 7 3700U", "GPU": "NVIDIA GeForce MX330", "OS": "Windows 10", "Battery Life": "Up to 10 hours", "Price": "Rs 60000"}, {"Brand": "Acer", "Model Name": "Predator Helios 300", "Core": "Intel Core i7", "CPU Manufacturer": "Intel", "Clock Speed": "2.8 GHz", "RAM Size": "16GB", "Storage Type": "SSD", "Display Type": "IPS", "Dimensions": "15.6 x 10.0 x 1.0", "Weight": "2.2 kg", "Processor": "Intel Core i7 10750H", "GPU": "NVIDIA GeForce RTX 2060", "OS": "Windows 10", "Battery Life": "Up to 8 hours", "Price": "Rs 80000"}, {"Brand": "MSI", "Model Name": "GL65", "Core": "Intel Core i7", "CPU Manufacturer": "Intel", "Clock Speed": "2.6 GHz", "RAM Size": "16GB", "Storage Type": "SSD", "Display Type": "IPS", "Dimensions": "15.6 x 10.0 x 1.0", "Weight": "2.3 kg", "Processor": "Intel Core i7 10750H", "GPU": "NVIDIA GeForce RTX 2070 Super", "OS": "Windows 10", "Battery Life": "Up to 7 hours", "Price": "Rs 55000"}] Based on your user profile with a high GPU intensity, high multitasking needs, and high processing speed, the Acer Predator would be the most suitable choice for you. It offers a powerful In Thanks for the suggestion You're welcome! If you have any more questions or need further assistance in the future, feel free to ask. Enjoy your new laptop!
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