Final User Interface and Functionality Test Plan

Myma.ai- ChatGPT for Tourism & Hospitality

Prepared By:

Sandnya Patil
Prashant Goswami
Hetvi Shah
Sairamnath Krishnan
Rohit Abbireddi
Kangcheng Su

Introduction

The Myma ai chatbot project aims to enhance the guest experience in the hospitality industry by offering two key services:

1. Room Service Management: Simplifying food and beverage orders, concierge service, and housekeeping orders.
2. Event Planning Assistance: Helping users plan and book events.

The chatbot's design integrates natural language processing to provide seamless, intuitive interactions. It addresses core hospitality challenges such as timely service delivery, event customization, and user feedback collection, offering a highly interactive and efficient digital assistant.

Core Functionalities of Myma.ai

1. User Authentication and Personalization

- **Feature:** This feature ensures secure access to the chatbot and offers options for personalized user interactions. For instance, users can log in to access tailored services like saved bookings or preferred options.
- **Examples:**
    1. The Customers will log in using the unique QR code which will make it easier for the hotel staff to identify and authenticate the requests placed by the customers.
- **Importance:** This enhances security and provides a personalized user experience by remembering user preferences and prior interactions.

2. Real-Time Query Resolution

- **Feature:** The chatbot provides instant responses to user queries related to services such as room availability, event bookings, or shuttle schedules.
- **Examples:**
    1. A guest inquires, "Are there vegetarian options at the restaurant tonight?" The chatbot fetches the updated menu and highlights vegetarian dishes.
    2. A user queries, "Is the swimming pool open?" The chatbot checks real-time status updates and confirms the pool's availability and timings.
- **Importance:** Reduces wait times and increases user satisfaction by providing immediate, accurate answers tailored to user needs.

3. Interactive Service Assistance

- **Feature:** Facilitates seamless interaction for various services such as raising complaints, booking cabs, or making reservations, all through an intuitive and conversational chatbot interface.

- **Examples:**
    1. A guest types, "I need to report an issue with the cleanliness of my room." The chatbot collects details about the issue, such as room number and specific concerns, and escalates it to the housekeeping team for immediate resolution.
    2. A user asks, "Can I book a cab to the airport for 6 AM tomorrow?" The chatbot provides available options, confirms the booking, and sends a confirmation message.
    3. A guest complained, "The food I ordered was cold." The chatbot records the feedback, offers to replace the dish, and notifies the kitchen team to address the issue promptly.
- **Importance:** This feature ensures a streamlined process for resolving user concerns and fulfilling service requests, enhancing the overall user experience and operational efficiency.

  By reducing dependency on human staff for routine inquiries and actions, the system delivers faster responses and maintains service & quality.

4. Backend Integration for Reliability and Security

- **Feature:** The chatbot integrates with Myma.ai's backend systems to handle room service requests and complaints efficiently. It ensures data is securely transmitted and stored using encryption and secure API communication.
- **Examples:**
    1. When a user reports an issue, such as "The air conditioning in my room isn't working," the chatbot securely transmits the details to the backend, where the maintenance team is notified immediately.
    2. For room service, a user requests "I'd like some towels delivered to Room 405." The chatbot updates the backend in real time to ensure the request is logged and fulfilled promptly.
- **Importance:** This ensures the system delivers accurate, secure, and reliable communication between the user and service teams. It minimizes delays, prevents data breaches, and maintains operational transparency for service-related actions.

5. Multi-Purpose Options

- **Feature:** The chatbot provides users with a variety of functions such as reporting issues with their room or food services, scheduling housekeeping, and booking cabs for airport transfers or city tours through an intuitive interface.
- **Examples:**
    1. A user clicks on "Complaints" to report an issue such as "The room is too cold, and the heater isn't working." The chatbot captures the details and forwards them to the appropriate service team.
    2. A user selects "Shuttle Service" to schedule a cab for an airport drop-off, inputs the flight time, and confirms the pickup request directly through the chatbot.

- **Importance:** By offering these diverse options in a single interface, the chatbot streamlines user interactions, ensuring convenience and efficiency in addressing various customer needs.

6. Conversational and Human-Like Interactions

- **Feature:** Powered by advanced AI, the chatbot communicates in a conversational and friendly tone, creating a human-like interaction experience that feels natural and intuitive for users.
- **Examples:** It understands natural language inputs such as "What's on the menu today?" or "Can I book a shuttle for 10 AM?" and provides clear, actionable responses, including follow-up questions for more details when necessary.
- **Importance:** This feature enhances user engagement by mimicking natural human interactions, making the chatbot approachable and reducing the learning curve for first-time users while efficiently addressing their needs.

7. Room Service and Event Planning Assistance

- **Feature:** The chatbot provides comprehensive support for event planning and room-related queries. It assists with tasks such as organizing events like weddings, corporate meetings, or social gatherings, and handling room service-related needs like requesting amenities or arranging housekeeping.
- **Examples:**
    1. A customer planning to host a wedding can inquire about available packages, view suggested dates, and explore options for customization, such as selecting a menu or decor preferences, all seamlessly guided by the chatbot.
    2. For room service, a guest can request additional pillows or report an issue such as faulty air conditioning, and the chatbot ensures the request is promptly logged and addressed.
- **Importance:** This feature simplifies the complex processes involved in event coordination and room-related services by presenting all necessary information cohesively, ensuring a seamless and accessible experience for customers.

Backend Integration

Feature: The chatbot integrates with Myma.ai's robust backend system, enabling seamless data retrieval and updates. It utilizes Node.js APIs for query routing, secure API communication, and real-time processing of user interactions.

1. **Query Routing:** User queries are processed through a Node.js backend that orchestrates data flow between the frontend chatbot and backend services, ensuring quick and accurate responses.

2. **Database Operations:**

    - **Microsoft Azure Cosmos DB:** The primary database handling all dynamic and non-structured data, including user complaints, service requests, predefined service options (e.g., dining schedules, shuttle availability), and event details. Its global distribution capabilities ensure consistent and high-performance data retrieval.

3. **Integration with Platforms and Services:**

    - **OpenAI Models (GPT-4 and GPT-4o):** These models are utilized for generating conversational responses and processing user queries. The chatbot retrieves contextually relevant data by leveraging embeddings and knowledge files stored in Azure.
    - **Embedding Process for Knowledge Hub:**
        - Hotel-specific information (e.g., shuttle services, room details, or dining options) is added through a dashboard and processed into embeddings using OpenAI's API.
        - The embeddings are stored in Cosmos DB, enabling vector-based searches to provide accurate and relevant answers to user queries.

4. **Error Handling and Fallback Mechanisms:**

    - Fallback messages are provided for cases where data is unavailable or incomplete. For example, if a user asks about a service that is not listed in the Knowledge Hub, the chatbot politely redirects them to contact hotel staff for further assistance.

5. **Scalability:** The system is optimized to handle peak traffic during high-demand periods, ensuring consistent performance and response times without degradation in user experience.

6. **Functionality and Slot Filling:** The chatbot dynamically collects missing data from users (e.g., pick-up time for shuttle bookings or the number of guests for room service) and generates structured queries for API calls. For example:

    - **User Query:** "Can I get a cab to the airport tomorrow?"
    - **Chatbot Response:** "What time would you like to leave?"
    - After collecting all required parameters, the system executes the request using backend APIs.

Examples:

- When a user reports an issue with housekeeping, the chatbot logs the complaint into Cosmos DB and generates a unique tracking ID and conversation ID for follow-up.
- For a request to book a cab to the airport, the chatbot gathers details like pick-up time and location and retrieves available options in real time using backend services.

Importance: This integration ensures secure, reliable, and efficient handling of user requests, delivering a seamless and personalized experience. Hotel staff can update information dynamically, ensuring chatbot responses remain current and accurate.

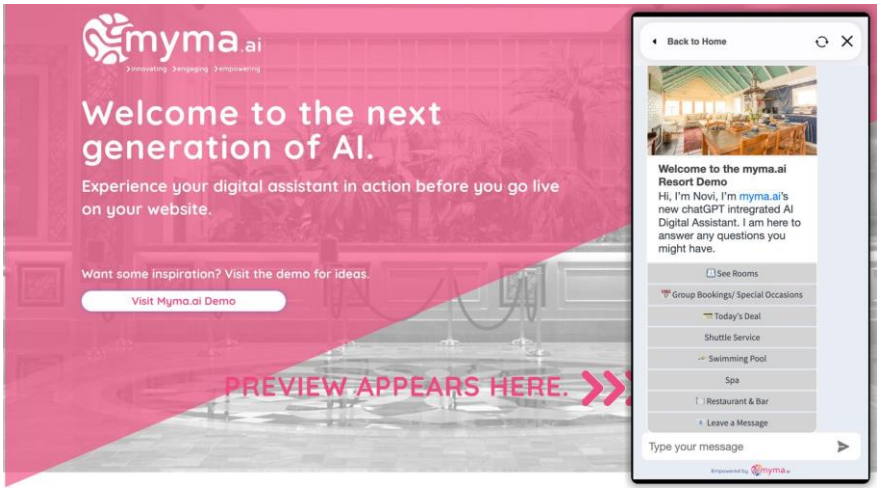
UI/UX Elements for Myma.ai

1. **Interactive and Intuitive Interface**

    - **Feature:** The chatbot interface is designed with user-centric functionality, providing clear navigation options through a conversational interface. It prominently displays categories such as "Shuttle Service," "Swimming Pool," and "Restaurant & Bar" for quick access.

    - **Examples:** A user can interact with the chatbot by selecting "Shuttle Service" to inquire about airport transfers or city tours. The chatbot guides the user through the available options and processes their requests conversationally.

    - **Importance:** Simplifies interaction by reducing typing effort, making the platform approachable for all users, including first-timers.

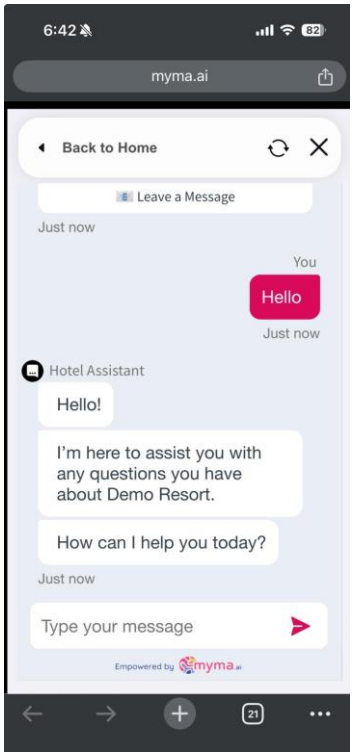


2. Responsive Design Across Devices

- **Feature:** Myma.ai ensures seamless usability across various devices, including smartphones, tablets, and desktops. The responsive design dynamically adjusts the layout for optimal user experience.

- **Examples:** Whether accessed from a smartphone while traveling or a desktop at home, the chatbot retains functionality and aesthetic consistency, allowing users to book services or ask queries without interface disruptions.

- **Importance:** Enhances accessibility and ensures a consistent user experience regardless of the device used.

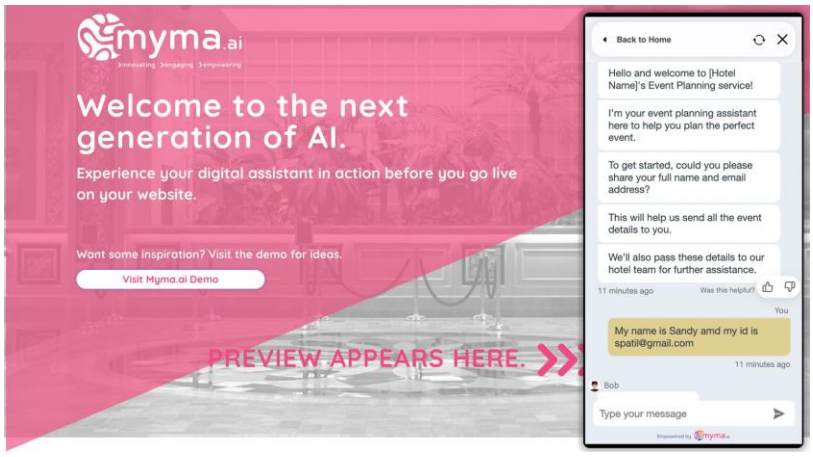


3. **Quick Action Suggestions**

    - **Feature:** The chatbot offers pre-filled suggestions to expedite user interactions, providing buttons for common services like "Leave a Message" or "Book an Event."

    - **Examples:** A user selecting "Book an Event" is prompted with details such as event type, date, and requirements. This streamlined interaction reduces the cognitive load for users unfamiliar with digital assistants.

    - **Importance:** Saves time, particularly during high-pressure scenarios like last-minute event planning or urgent complaints.

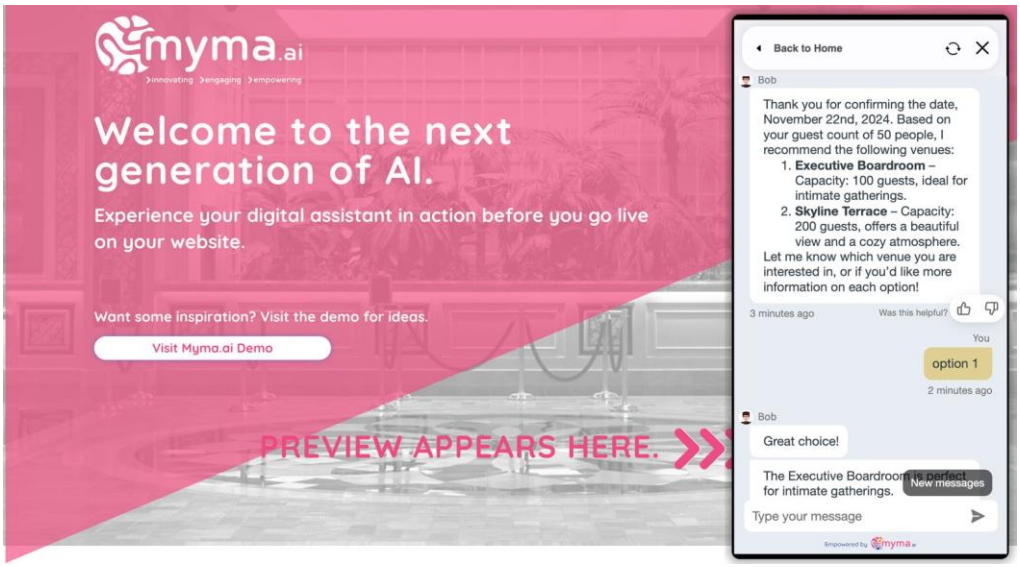


4. **Seamless Chat Interaction**

    - **Feature:** Enables smooth, uninterrupted conversations by maintaining context across multiple queries and eliminating delays between user input and responses.

    - **Examples:** A user starts by asking about the availability of event spaces for a wedding and then follows up with questions about catering services and decoration options. The chatbot retains the context of the wedding event and provides relevant answers for each follow-up query without requiring the user to restate that they are inquiring about a wedding.

    - **Importance:** Increases user satisfaction by mimicking a natural conversational flow and avoiding repetitive queries, making the interaction more human-like and efficient.

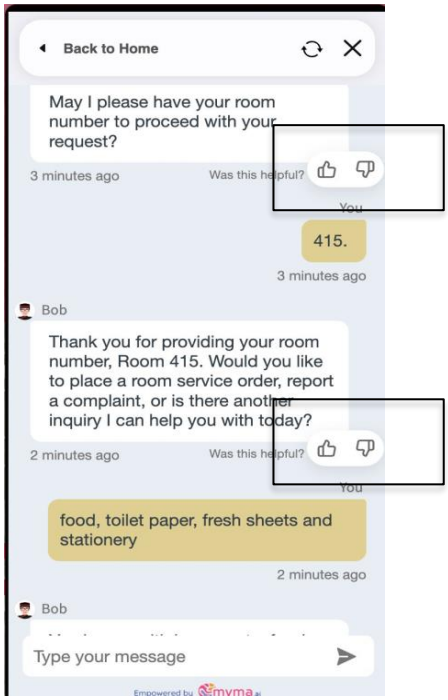


5. User Feedback Integration

- **Feature:** Thumbs-up and thumbs-down feedback buttons are integrated into the chatbot to gather real-time user satisfaction insights.

- **Examples:** After receiving assistance on a restaurant booking query, users can rate their satisfaction. If negative feedback is provided, the chatbot prompts for additional comments to improve service.

- **Importance:** Ensures continuous improvement by incorporating user input into system enhancements.



Use Cases

Use Case 1: Event Planning Use Case

Objective: Facilitate customers in exploring venue options, customizing services, and booking hotel resources for events.

Example User Input:
"I want to book a hall for a wedding reception with 100 guests."

Process:

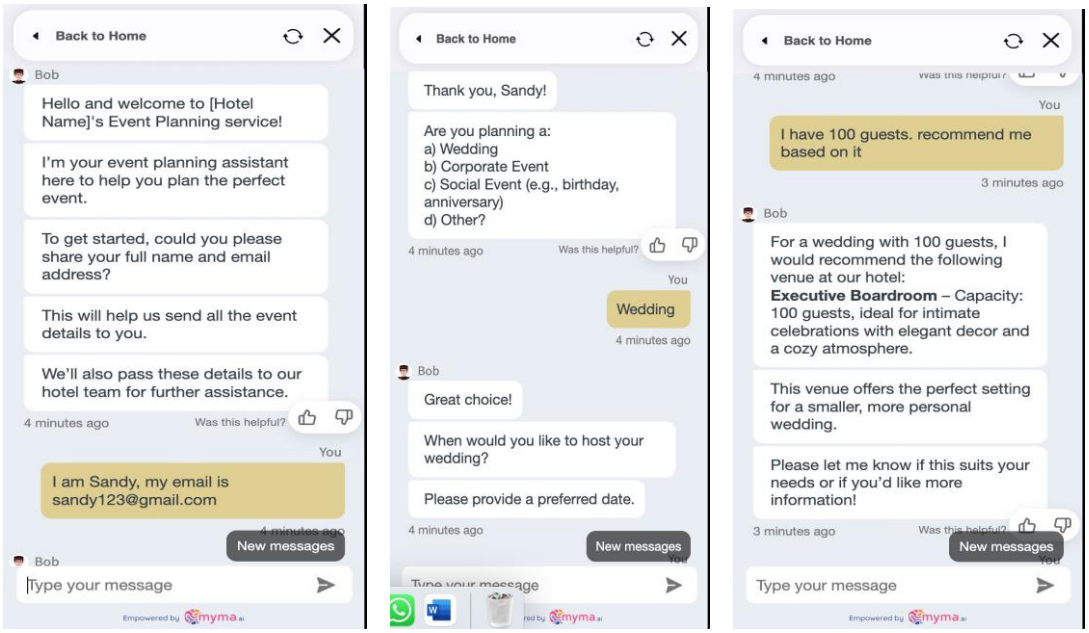
1. **Initial Interaction:**
    - The chatbot welcomes the user to the event planning service and requests their name and email for further communication and hotel staff coordination.
2. **Event Type Identification:**
    - The chatbot asks the user to select the event type (e.g., Wedding, Corporate Event, Social Event).
    - The user selects "Wedding."
3. **Date Selection:**
    - The chatbot requests the preferred event date.
    - The user provides the date, e.g., "December 1, 2024."
4. **Venue Suggestions:**
    - Based on the event type, guest count, and available options, the chatbot recommends suitable venues with capacities, amenities, and features.
    - For example, for 100 guests, the chatbot suggests:
        - Executive Boardroom: Capacity of 100 guests, intimate and elegant decor.
5. **Catering Options:**
    - The chatbot inquiries about catering preferences, offerings:
        - Buffet-style meals
        - Plated dinners
        - Custom menus (tailored to preferences)
    - The user selects a custom vegan Indian cuisine menu.

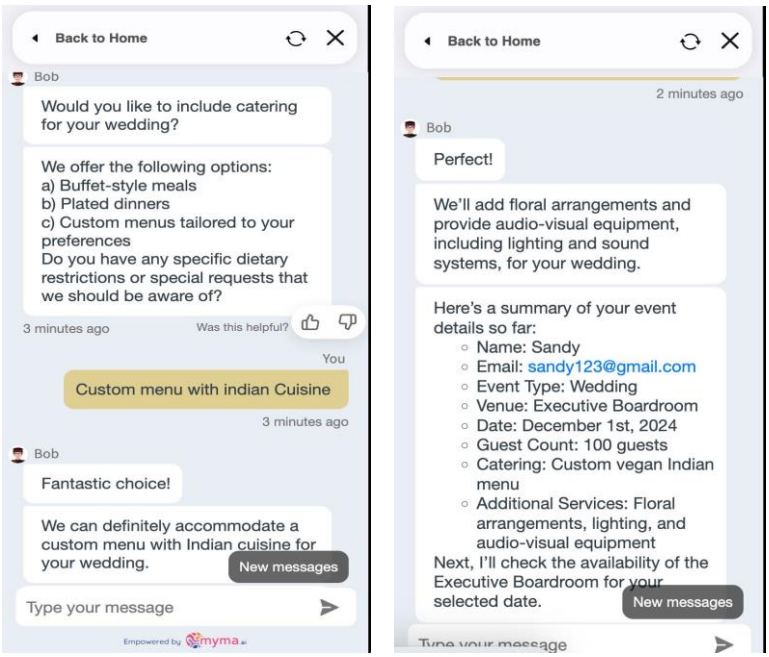
6. **Additional Services:**

    - The chatbot offers optional services, such as floral arrangements, audio-visual equipment, and customized decorations.
    - The user selects floral arrangements, lighting, and audio equipment.

7. **Booking Summary:**
    - The chatbot compiles a summary of event details:
        - Name: Sandy
        - Email: sandy123@gmail.com
        - Event Type: Wedding
        - Venue: Executive Boardroom
        - Date: December 1, 2024
        - Guest Count: 100 guests
        - Catering: Custom vegan Indian menu
        - Additional Services: Floral arrangements, lighting, and audio equipment.
    - The chatbot confirms availability and prepares to finalize the booking.

Expected Output:
"The Executive Boardroom is available on December 1st, 2024, for 100 guests. It includes elegant decor and a cozy atmosphere. Your catering choice of a custom vegan Indian menu is confirmed, along with floral arrangements, lighting, and audio systems. Would you like to proceed with the booking?"





Use Case 2: Event Planning Use Case - Edge Case

Objective: Assist customers in planning and booking resources for hosting a birthday party.

Example User Input:
"Hi, I want to host a birthday party."

Process:

1. **Initial Interaction:**

    - The chatbot welcomes the user and introduces its event planning service.
    - It identifies the query as related to a birthday party and requests the user's name and email address to begin the process.

2. **User Information Collection:**

    - The chatbot prompts the user for their name and email to send event details and coordinate with the hotel team.
    - The user responds, e.g., "Sandy, s123@gmail.com."

3. **Date Selection:**

    - The chatbot asks for the preferred date of the event.
    - The user provides a past date, e.g., "15 November."

4. **Date Validation and Correction:**

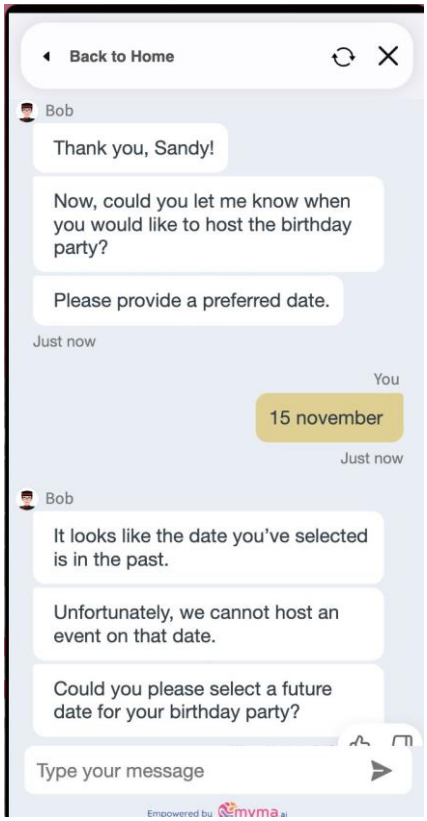
    - The chatbot identifies that the selected date is in the past.
    - It informs the user of the issue and requests them to choose a future date.

5. **Next Steps:**

    - Once a valid date is provided, the chatbot will proceed with suggesting suitable venues and gathering additional event details, such as guest count, menu preferences, and additional services required.

Expected Output:

"It looks like the date you've selected is in the past. Unfortunately, we cannot host an event on that date. Could you please select a future date for your birthday party?"



Use Case 3: Room Service

Objective: Assist hotel guests in fulfilling multiple room service requests efficiently in a single interaction.

Example User Input:
"Hi, I want a few things."

Process:

1. **Initial Interaction:**

    - The chatbot welcomes the user and introduces the Room Service feature.
    - It identifies the query as related to room service and asks for the user's room number to proceed.
    - The user provides their room number, e.g., "415."

2. **Request Collection:**

    - The chatbot acknowledges the room number and asks the user for specific service requests.
    - The user responds with multiple requests, e.g., "Food, toilet paper, fresh sheets, and stationery."

3. **Categorizing Requests:**

    - Food Order: The chatbot presents a detailed menu with categories, availability times, and prices.
        - The user specifies their selection, e.g., "Vegetarian Pasta in Olive Oil."
    - Toilet Paper: The chatbot confirms the request for toilet paper and schedules delivery to the room.
    - Fresh Sheets: The chatbot notes the request for fresh sheets and asks for a preferred delivery time.
    - Stationery: The chatbot asks for specific stationery items.
        - The user specifies, e.g., "Crayons and craft paper."

6. **Summary and Confirmation:**

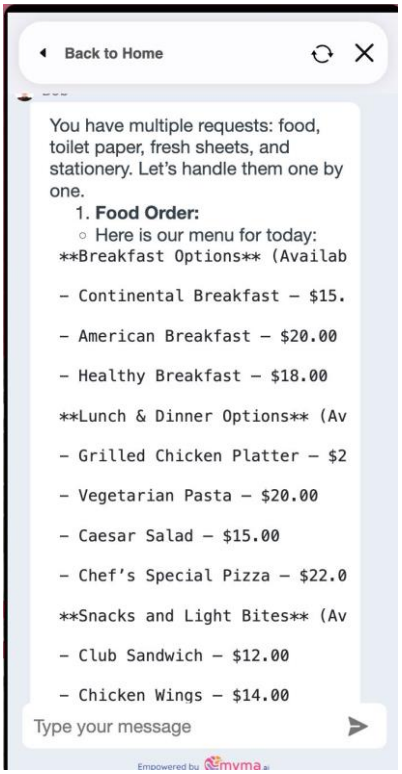
    - The chatbot summarizes all requests:
        - Food: Vegetarian Pasta with Olive Oil – $20.00
        - Amenities: Toilet paper, fresh sheets, crayons, and craft paper.
    - The user confirms, e.g., "Send everything with the food order."
    - The chatbot schedules all items to be delivered together.

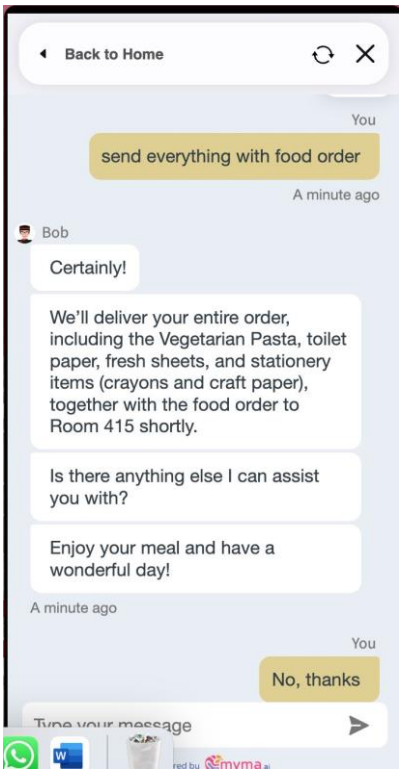
7. **Final Interaction:**

    - The chatbot confirms the combined delivery and ensures all requests are processed promptly.
    - The chatbot thanks the user and wishes them a pleasant stay.

Expected Output:

"We'll deliver your entire order, including the Vegetarian Pasta, toilet paper, fresh sheets, and stationery items (crayons and craft paper), together with the food order to Room 415 shortly. Is there anything else I can assist you with?"





Use Case 4: Room Service - Edge Case
Objective: Assist hotel guests in selecting and ordering beverages seamlessly through room service

Example User Input:
"Hi, I want to place an order."

Process:

1. **Initial Interaction:**
    - The chatbot welcomes the user and introduces the Room Service feature.
    - It identifies the query as related to room service and asks for the user's room number to proceed.
    - The user provides their room number, e.g., "415."

2. **Request Type Identification:**
    - The chatbot acknowledges the room number and asks for the type of service the user needs.
    - The user specifies, e.g., "Beverages."

3. **Menu Presentation:**
    - The chatbot presents the beverage options along with prices and availability, e.g.:
        - Coffee/Tea – $5.00
        - Fresh Juice – $6.00
        - Soda/Soft Drinks – $4.00
        - Bottled Water – $3.00

4. **User Selection:**
    - The user requests a beverage not listed, e.g., "I want Kombucha."

5. **Handling Unavailable Items:**
    - The chatbot informs the user that Kombucha is not available and provides suggestions from the available menu, e.g.:
        - *"I'm sorry, but Kombucha is not available on our menu. Would you like to try fresh juice or herbal tea?"*

6. **Alternative Support:**
    - The chatbot offers additional support for special requests by directing the user to the front desk, e.g., *"If you have any special requests, feel free to contact the front desk at 234789 for further assistance."*

Expected Output:

"I'm sorry, but Kombucha is not available on our menu. Would you like to try fresh juice or herbal tea? If you have any special requests, feel free to contact the front desk at 234789 for further assistance."