Gaia

A Conversation User Interface For Hotels

Interaction Design Studio 2 - Assignment 1
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Executive Summary

For this assignment, we were instructed to develop a conversational user interface (CUI) that satisfies an unmet need in one of the four service contexts: interacting with a driverless car, communicating with a hotel agent, trying on outfits in a retail store dressing room, or ordering a meal. After several iterations, our team developed Gaia, a CUI that bundles several hotel touchpoints into one seamless service. Gaia recommends and creates travel plans for hotel guests based on each guest's itinerary, preferences, and demographics and integrates with the hotel for a seamless experience. Gaia will add value to hotels by reducing the time that hotel staff spend responding to simple requests (e.g. "Can I get some more towels?") while enhancing the guests' experience through a simplified interface and highly consistent, personalized recommendations.

Research

We began by conducting an exhaustive exploration of a few of the different services that interested us. We examined the way in which the services currently operate, paying special attention to any current CUI trends. We identified the pros and cons of each context and chose to focus on hotels because we believed they had the widest range of explorable opportunities.

In analyzing at the current state of the hospitality industry, we examined various voice interfaces that exist today in the home and the ways in which they are used in upscale hotels, our target demographic. We also looked at the amenities provided across many hotels.

Current Hotel Amenities:
*   Concierge
*   On-call butlers
*   Spa & services (massage, waxing, manicure/pedicure, etc.)
*   Laundry and dry cleaning services
*   Room service
*   Restaurants
*   Automated lighting and HVAC systems
*   Television (cable & Pay Per View)

VUIs in Hotels:
The Wynn at Las Vegas: provides each hotel room with an Amazon Echo; controls in-room temperature, lighting, drapes, and television; does not contain any personal information.

The Henn Na Hotel in Japan is staffed with conversational robots who aid in guest services and travel recommendations.

In most hotels, the various amenities need to be accessed through numerous avenues with phones containing a multitude of buttons and reliance on human knowledge. Our goal was to provide a streamlined, personalized experience leveraging the advantages of modern technology.

Exploratory Scenarios

1. James wants to order room service, but isn't sure what to get. He asks his in-room VUI what today's specials to which it replies with salmon, steak, and chicken. James tells the VUI to place an order for the steak to be delivered to his room.

2. Stella has just arrived at her hotel in Phoenix and wants to see some sights before her conference. She asks her in-room VUI what there is to do in the vicinity. Based on her previously indicated preferences, the VUI recommends a few activities along with transportation methods.

3. Esteban woke up late and needs to get to a meeting fast. He uses his VUI to order an Uber while getting dressed, which saves him time, and the VUI gives regular updates about how far his driver is. By the time Esteban is downstairs, the Uber is waiting and he can get to his meeting on time.

4. Dana is feeling nauseous and needs to lie down. Thanks to her in-room VUI, she can control the lights, temperature, and curtains from her bed without having to get up. The VUI also offers to call room service and order some hot tea and medication.

5. Jake is in town to attend a friend's wedding. He books a room at the hotel where the reception will be held since he also wants to do some exploring while he's there. While dressing up to go to the party, he realized that he didn't get the name of the room that he needs to go to so he asks his in-room VUI to search for his friend's name in the list of events that are happening on the hotel.

6. While spending the night at a hotel, Maggie's daughter lost her teddy bear from all the walking around they did while checking in. Maggie uses their in-room VUI to send a message to the front desk asking them to keep an eye out for any teddy bears they may find lying around. Having put the initial request down, she can now periodically ask the VUI if their teddy bear has been found.

7. Arriving tired from his late night flight, Steve thought of getting a massage first time in the morning to ease up the tension in his muscles. Since the hotel he's staying in is famous for being a relaxation center, massage appointments within the day can get filled up by walk-in guests pretty quickly. Since he's an in-house guest, he leveraged his in-house VUI to book a reservation even when the relaxation center is closed – a perk offered only to in-house guests such as him.

8. Carol has been staying at a hotel for the past several days on a business trip. She needs to be at the airport by 8am and would like a wake-up call to ensure that she can leave on-time. She asks her room's VUI to set a wake-up call at this time. The next morning, the VUI wakes her up and asks her if she would like to have the lights on. It then turns on her lights for her, making her feel more awake. She checks out and arrives at the airport in time for her flight.

9. Erin works in housekeeping doing the regular room cleanings. While in one guest's room, she notices the guest's minibar is running low. She asks the room's VUI to put in a work order to restock the minibar.

10. Linda and Jerry are staying at a hotel on vacation. The night before, they decide that they want to have room service for breakfast. They ask their VUI to order one waffle dish, a spinach omelette with toast, two orange juices, and a side of bacon for breakfast the next morning at 9am. When they wake up, they see room service has just delivered their food and immediately enjoy a hot breakfast before starting their day.

11. Jason is staying in Orlando and had tickets to see the fireworks show at Disney. The morning of the show, his VUI informs him that there is a 90% chance of thunderstorms at the time of the event. He asks the VUI to move his reservation to a different night. His VUI informs him that unfortunately no tickets are available for the rest of his stay. However, it suggests alternate events and shows that he might enjoy. He picks one and asks the VUI to make a reservation.

In-Class Ideation

Our next step was to generate a concept from our research and scenarios. In class, we started by sketching out our knowledge in several different ways. We mapped out the different functions of a hotel and then started a customer journey map to understand how guests might experience the different services from check-in to check-out.

Then we narrowed in on a specific need we were interested in solving and started role playing how a CUI would solve this need.
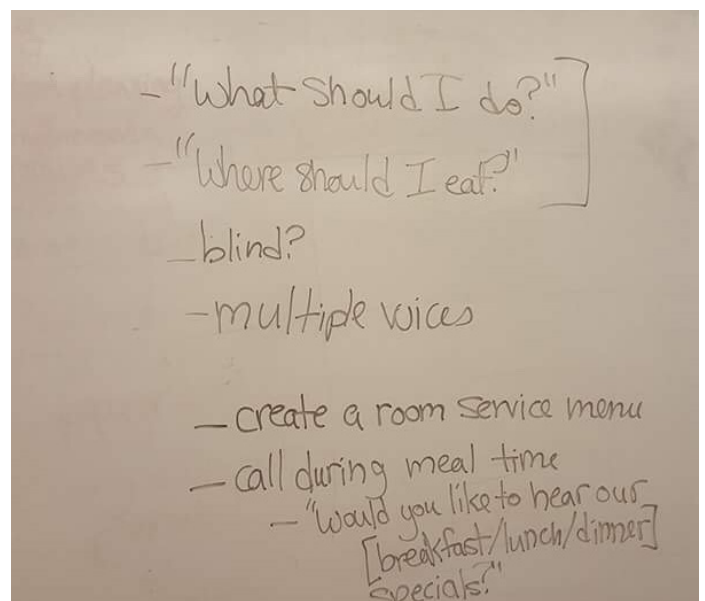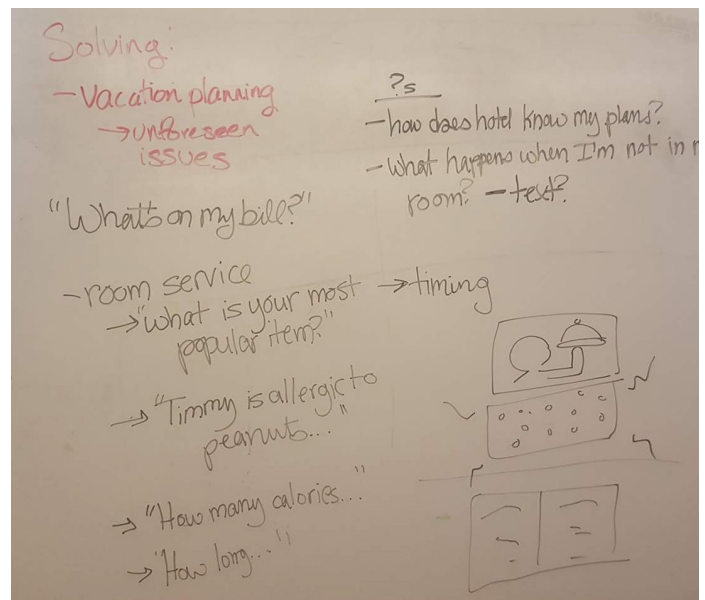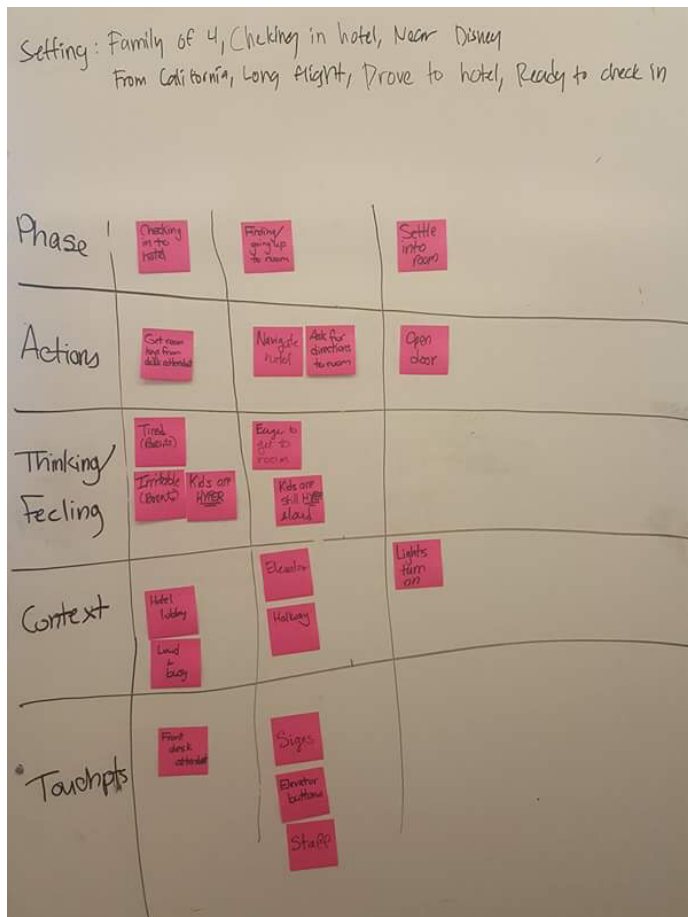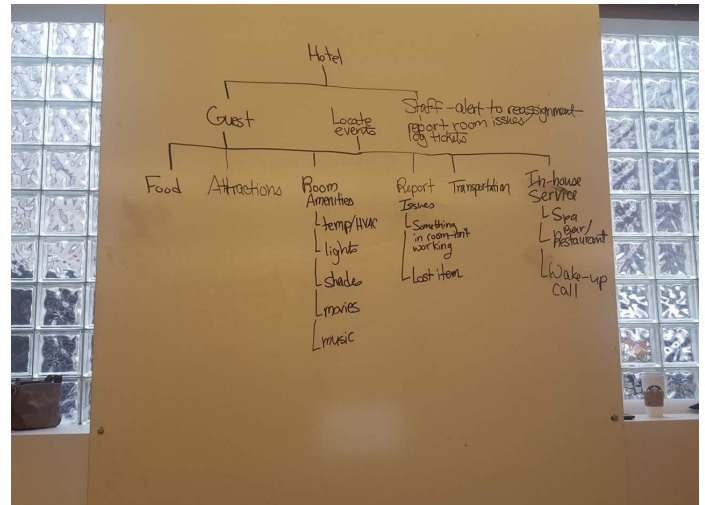
First Prototype and Feedback

Our first prototype was a CUI that provided recommendations on popular things to do in the vicinity including food, shopping, shows, attractions, and nightlife. Our interface consisted of a screen with images of these recommendations and a conversational bot that would provide more details about each item. The screen would also contain relevant information such as the address, hours of operation, and ratings. Users could select from one of the options or ask for more suggestions based on additional parameters.

Example Conversation:
  User: "Hey Gaia, what is there to do?"
  CUI: "Would you like to see a show, visit an attraction, grab food, or something else?"
  User: "I think I'll get dinner!"
  CUI: "Ok. What do you think about these restaurants?" (GUI displays list of restaurants)

The feedback we received indicated that this would not be a very useful product. People wanted to be told where to go instead of given options, especially if they were travelling to an unfamiliar place. They were also confused about the role of the CUI in the system.
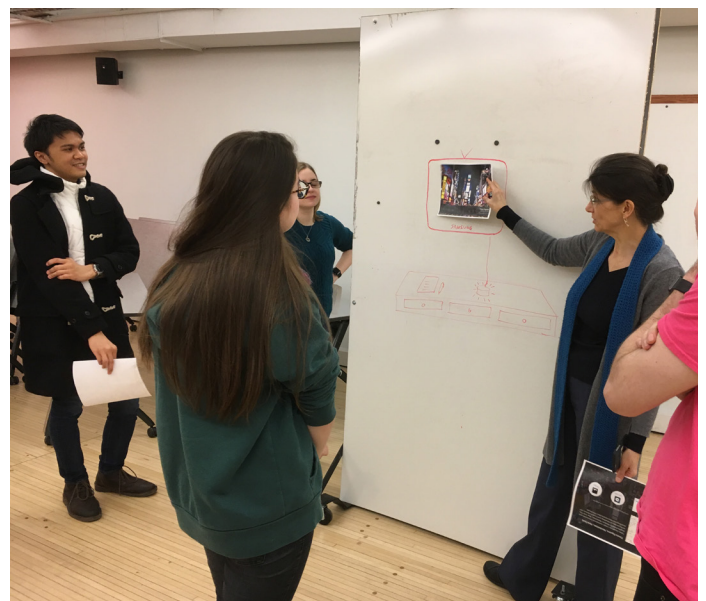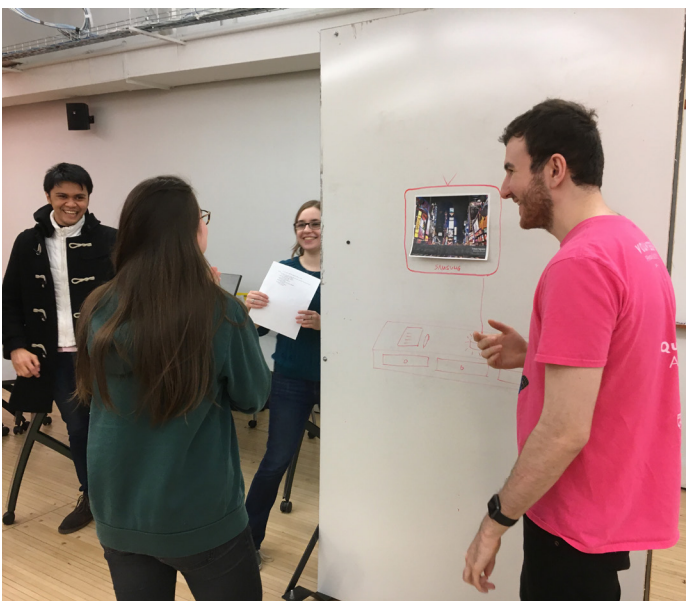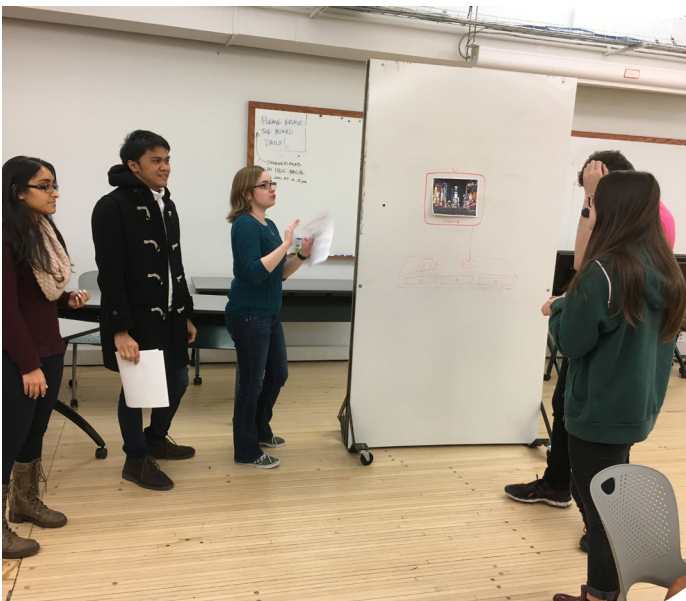
Second Prototype and Feedback

To improve our second prototype, we made our GUI more visual and removed all of the text. Instead, we allowed users to refer to each option with a provided number and selecting an option would bring up a photo feed of that option.

Example Conversation:
    User: "Hey Gaia, I'm hungry."
    CUI: "Ok, why don't you try one of these restaurants?"
    User: "No, I want Chinese food."
    CUI: "Ok, what about this restaurant that is half a

mile away?"

Our users felt that the GUI distracted from the conversational elements and that the product could be replaced by something on a phone or laptop. They did not see much value in voice recommendations if it would be easier to filter through a list visually. Since this prototype did not seem to capitalize on the idea of a CUI, we decided to pivot and focus on a more personalized experience.

Final Prototype

Our final prototype is a personal hotel assistant that integrates all hotel services and delivers personalized recommendations. It learns from preset preferences, demographic data, and the choices a user makes during their stay to deliver a truly unique experience for each guest; additionally, it saves information across visits, which is especially advantageous for frequent

travellers. By being a part of the hotel, Gaia can deliver targeted marketing of hotel services to specific guests and conveniently make reservations, call for room service, or request other support. Moreover, Gaia has full access to the Internet from which it can draw travel recommendations based on the guest's desires and preferences.