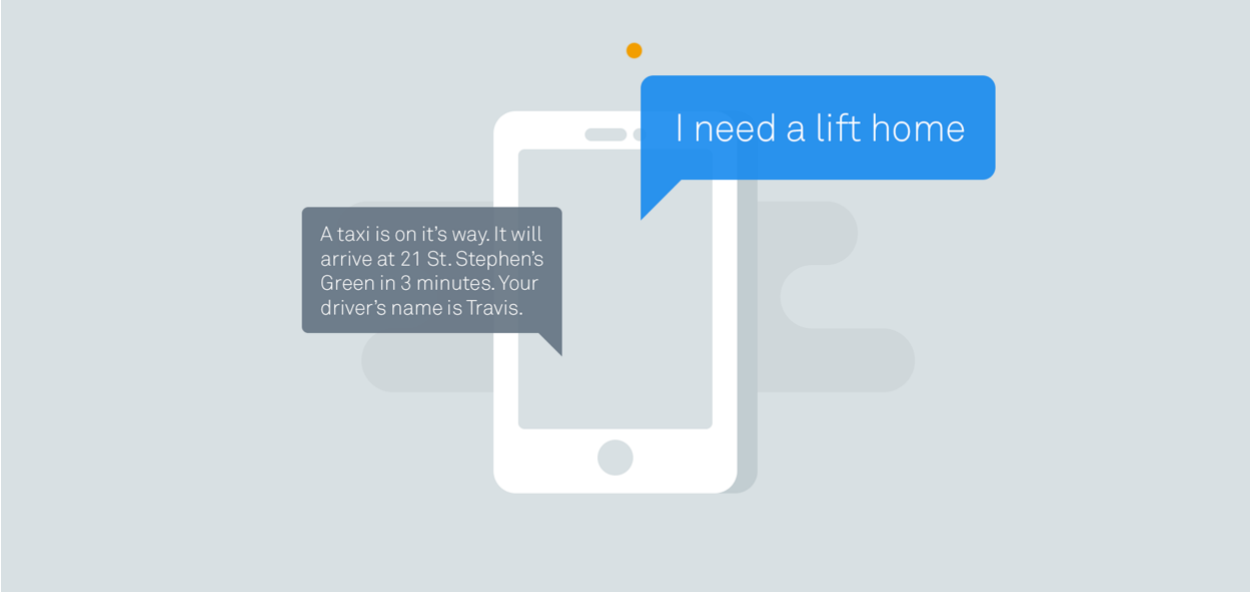
CS-639 Building User Interfaces, Fall 2019, Professor Mutlu

Assignments — Week 13 | Design Experience Prototyping Conversational Interactions



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In this assignment, you will start your work toward designing and developing your Module 3 deliverable. We discussed in class that designing conversational interfaces has unique challenges and that ideation and prototyping methods that work very well in other design problems do not work well here. The good news is that we are also subject matter experts in conversation, but the bad news is that our expertise is locked into brain mechanisms and is not readily available for us to use, what we called *tacit knowledge*. This is where *experience prototyping* comes into the picture: by simulating the social and/or the physical setting for the interaction and acting out the interactions using methods such as *bodystorming*, we unlock our expert knowledge and apply it to the design problem. In the first part of the assignment, you will engage in experience prototyping of a *conversational shopping assistant*, which will serve as the basis for developing the intents and entities for the first prototype of your Dialogflow implementation.

Part 1. Experience Prototyping. In this step, you will follow a process very similar to the process we followed for the in-class activity on experience prototyping, paying particular attention to *bodystorming* for idea generation. In the context of designing a shopping assistant robot, follow the steps below:

1. *Define context* — This is given to you: users interacting with a conversational shopping assistant embedded within a clothing retail website.

2. *Develop scenarios* — Think about how the shopping assistant will help users. What are some tasks the shopping assistant can help users with? Develop 2-3 scenarios.
3. *Identify design goals* — Determine what the shopping assistants can do to assist in these tasks. Consider aspects of the task where the assistant can bring added value. Our goal is not designing a fully autonomous assistant that could take care of everything with minimal input from the user, but what is called a *mixed-initiative design* where the assistant does what it's good at and the user does what the user is good at.
4. *Set up environment* — You can use the retail store provided with Module 3 starter code and/or another clothing retail store as your environment.
5. *Act out interaction* — Ask a friend, family member, or another student in class to help you bodystorm user interactions with the shopping assistant to develop ideas and to more concrete define user and system behavior and interactions with the environment. Act out at least one interaction for each scenario.
6. *Develop insight* — Capture the conversations from your bodystorming session and any other insight you have gained from the previous step in notes and translate them into a flowchart representation of the interaction.

Your deliverables will be the scenarios and design goals you have focused on, the transcripts of the bodystorming sessions, and a flowchart representation of the conversational capabilities suggested by your experience prototyping. Your flowcharts can be in the form of a graph where the nodes are system behaviors and arrows are user behaviors. You can use a flowcharting application such as Smart Draw.

Scenarios:

- The shopping assistant could help users browse for items under a specific category (size, color, type).
    - Design goal: When the user says that he/she is interested in a certain item, the assistant should identify the type, and the category (if applicable) of the item, and provide suggestions. The assistant should give the user a link which would redirect them to the correct search result.
- The shopping assistant could provide information about shipping to the user's location (price, time, returns).
    - Design goal: If the user asks for the cost of shipping, the assistant can answer with different price points (standard, premium). Furthermore, the assistant can answer about the speed of delivery, as well as return options.
- The shopping assistant could help the user edit his/her account information (email, payment methods, change password).
    - Design goal: If the user wants to update a field in his/her profile (address, phone number, payment methods, etc.), the shopping assistant should allow them to do so in the message window, or redirect them to a different page.

Bodystorming:

Scenario 1 – Searching for a specific item

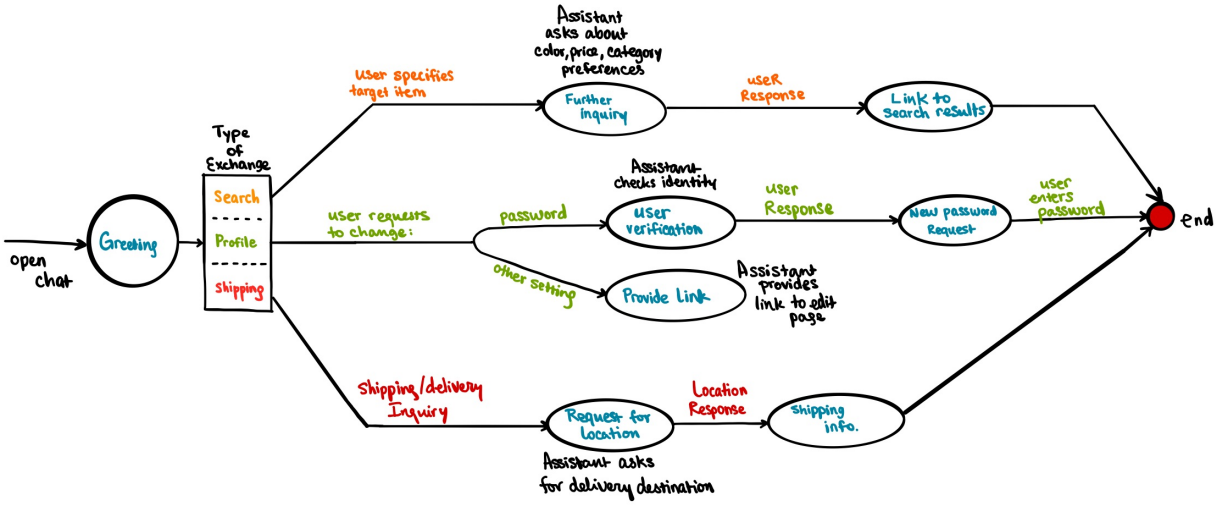
User	I am looking for a bag
Assistant	Do you have a color preference for your bag?
User	Brown or black
Assistant	Here is a link to all the brown or black bags we have: https://linktobags.com

Scenario 2 – Shipping

User	How much is the shipping cost?
Assistant	What is your address?
User	1234 City rd., Madison WI
Assistant	The standard shipping rate for US locations is $4.99.
User	How long will it take to get here?
Assistant	You can expect your package in 5-7 business days.
User	Is there a faster option?
Assistant	Yes! If you choose our express delivery option, you can expect your package in 2-3 days. The cost of this option is $14.99

Scenario 3 – Profile Settings

User	I want to change my password
Assistant	We sent a confirmation code to your email address. If you want to change your password, please enter the code below:
User	12345
Assistant	Great! Enter your new password below:
User	*****
Assistant	Your password must be at least 6 characters long. Try again:
User	******
Assistant	Your password has been changed successfully!



Part 2. Dialogflow Implementation. In this step, you will apply what you learned in your Experience Prototyping to the design of the agent you will be creating. More specifically, you will draw on the outcome of your bodystorming session to determine the intents and entities that your

agent will utilize in its conversation, and consider how you will use them and server data to provide responses. You will provide three main deliverables:

1. A list of all *intents* you will use (provide 10 training examples for each intent).
2. A list of all *entities* (provide 5 examples for each entity) you will be using with your agent.
3. For each *intent*, write a brief description of what the agent will *say in reply* and what it will *do* to change the GUI.

For a full description of what the GUI can do, and the requirements of the agent, see the Dialogflow Canvas Assignment and API readme.

Intents and Training Examples:

searchItem

Training Examples:

1. I want to buy a red shirt
2. I'm looking for a plush
3. I need to buy leggings
4. I want a hat
5. Search for black leggings
6. Find a white T-shirt
7. I'm searching for pants
8. Do you have a red hat?
9. How much is plush?
10. Can I get a sweatshirt?

actionCart

Training Examples:

1. How many items are in my cart?
2. What is my total?
3. Can I checkout?
4. I want to checkout
5. What's in my cart?
6. I want to remove an item from my cart
7. Add to cart
8. What's my most expensive item?
9. Can I remove an item from cart?
10. How much is my total?

actionProfile

Training Examples:

- I want to change my password
- I need to change my username
- Can I change my password?
- How do I change my username?
- Can I update my profile?
- I want to update my profile

- I wanna change my username
- How can I change my username?
- Can I update my name?
- I want to edit my profile

Entities:

- Color
    - Red
    - Blue
    - White
    - Black
    - Pink
- Profile Item
    - Username
    - Password
    - First name
    - Last name
    - Email address
- Item Type
    - Shirt
    - Pants
    - Leggings
    - Hat
    - Plush

Intent Responses

searchItem

- The agent will navigate to a filtered search result, that matches the user's specifications.
- "Here are the results for a red sweatshirt"

actionCart

- The agent will respond to the user's query, unless the user asks to checkout – then, the agent will navigate to the checkout page of the website
- "You have 5 items in your cart"
- "Navigating to your shopping cart"

actionProfile

- The agent will respond by navigating to the user's profile page, where he/she is allowed to perform the intent. If the request is a viewing action ("what's my username?"), the agent responds in the chat window.
- "Your username is alexyavni"
- "Navigating to your profile"