CS 466/566: Voice Assistants

Homework 2

Homework 2 - Alexa Skills

In this assignment, you will put together an Alexa Skill by creating the interaction model and the fulfillment needed to interact with the model. We will be using both the Alexa Developer Console and VS Code.

- ❏ **Step 1 - Invocation Name**
  - ❏ Identify the use case you will be using for this skill. This should be the same use case you used for HW 1.
  - ❏ Create an invocation name.
    - ❏ Note: Already published Alexa Skills may have already claimed that invocation name or a similar name. Once you start testing your skill, you may have to come back to this step and update the invocation name.
  - ❏ List of use cases:
    - ❏ Use Case 1: Create a food cart directory for your city
    - ❏ Use Case 2: Book a conference room in the different buildings at your university
    - ❏ Use Case 3: Create an inventory management and purchasing system for textbooks
  - ❏ Example - Sleep Tracker Skill:
    - ❏ Invocation Name: sleeper agent

- ❏ **Step 2 - Intents**

- ❏ Identify **one main intent** for your application, define it in this step, and describe what this intent entails.
- ❏ Example - Sleep Tracker Skill:
  - ❏ Intent: GetSleepQualityIntent
  - ❏ Description: This intent will calculate someone's sleep quality by asking about the number of hours slept and the type of sleep the user got or plans to get.

- ❏ **Step 3 - Slots and Slot Types**
  - ❏ In this step, you will come up with **two slots** for your sample utterances. One of the slots must be a custom slot type. The other can be built-in types.
  - ❏ Identify what information you need to receive from the user (i.e. names, numbers, event dates, recipe names, etc) and create slots for those as needed. You can have more than the two required slots in your intent.
  - ❏ Example - Sleep Tracker Skill:
    - ❏ Slot name: NumberOfHours
      - ❏ Slot type (built-in): AMAZON.NUMBER
    - ❏ Slot name: SleepQuality
      - ❏ Slot type (custom): SleepQuality

- ❏ **Step 4 - Sample Utterances**
  - ❏ Create **at least 15 sample utterances** that can be used by the user to fulfill the main intent.
  - ❏ The majority of your sample utterances should include at least one slot and some of the sample utterances should include both slots created in the previous step. You can also have some sample utterances without any slots. .
  - ❏ Example - Sleep Tracker Skill:

- ❏ Will I feel rested if I get {NumberOfHours} hours of {SleepQuality} sleep quality?
- ❏ Will I be tired if I got {NumberOfHours} hours of sleep and {SleepQuality} sleep quality?
- ❏ How rested will I be after {NumberOfHours} hours of sleep?

❏ **Step 5 - Logic for the Intent**

- ❏ What logic or algorithm is used in the intent? Define it using **pseudocode** in this section. Your logic should be based on the information received from the slots in this intent. Do not write any code in this section.
- ❏ The logic should include a happy path as well as edge cases and error states. There should be error checking in your pseudocode.

❏ **Step 6 - Build the Alexa Skill**

- ❏ Create a new Alexa Skill using the Alexa Developer Console.
- ❏ You will need to create the **interaction model**. This can be done with the different tabs in the UI or by populating the .json file in VS Code.
- ❏ The second part of the code is the **fulfillment**; you will need to update the index.js file (under the “Code” tab) with the back-end logic.
- ❏ You are expected to submit code that is properly formatted and does not contain errors.

❏ **Step 7 - Test the Alexa Skill**

- ❏ Create a list of phrases that someone can use to test your skill and write down your VA’s answers.
- ❏ Write a list of at least **3 testing phrases** that will test different permutations of the sample utterances. These testing phrases should include testing the slots.
- ❏ Go to the “Test” tab to test out each option.

- ❏ Document each testing phrase and the VA's answer in this step.
    - ❏ Do not use screenshots. Instead, copy and paste the text in your report.
- ❏ Testing for voice applications is often hard to do by yourself, since you are also the developer of the application. Because you know what you implemented, you will tend to test for that. That's why I would recommend asking another person to test out the application and write out potential testing phrases. They will be able to catch things you might have missed otherwise.

- ❏ **Step 8 - Review and Reflection**
    - ❏ In this step, you will need to answer the following questions thoughtfully and thoroughly. You are expected to show critical thinking and careful reflection in your answers.
        - ❏ **Impressions**: What was your overall impression of building with the Alexa Developer Console? Did you primarily use ADC or did you use VS Code? What parts of this development experience were the most enjoyable? What parts were the trickiest to figure out?
        - ❏ **Design vs Implementation:** What changes did you make from the VUI design exercise in the previous assignment to the code implementation in this one? Why did you make those changes?
        - ❏ **User Input:** How does your code account for errors in user input? Why did you decide to handle user input errors that way? Do you have plans to make any changes to this?
        - ❏ **Testing**: How long did you spend testing the skill? What did you learn through the testing process? Have you asked someone else to test the application? What did you learn from that testing session?

Grading Guidelines

- ❏ Your submission should be very well-organized and easy to follow.
- ❏ This assignment will primarily be graded on the thoughtful and thorough completion of the steps above.

Submission Guidelines

- ❏ Turn in a report in PDF format with the answers to each of the steps above + a zip file that contains all the code (interaction model and fulfillment). Upload everything in the Canvas assignment submission folder.
    - ❏ Make sure to export the entire Alexa Skill. Navigate to the "Code" tab in the Alexa console and click the "Download Skill" button.
- ❏ **Due Date:** Week 5, Monday at 5:00 pm.