HW1 Part2: Alexa Skill for Multi-Turn Pizza Ordering System
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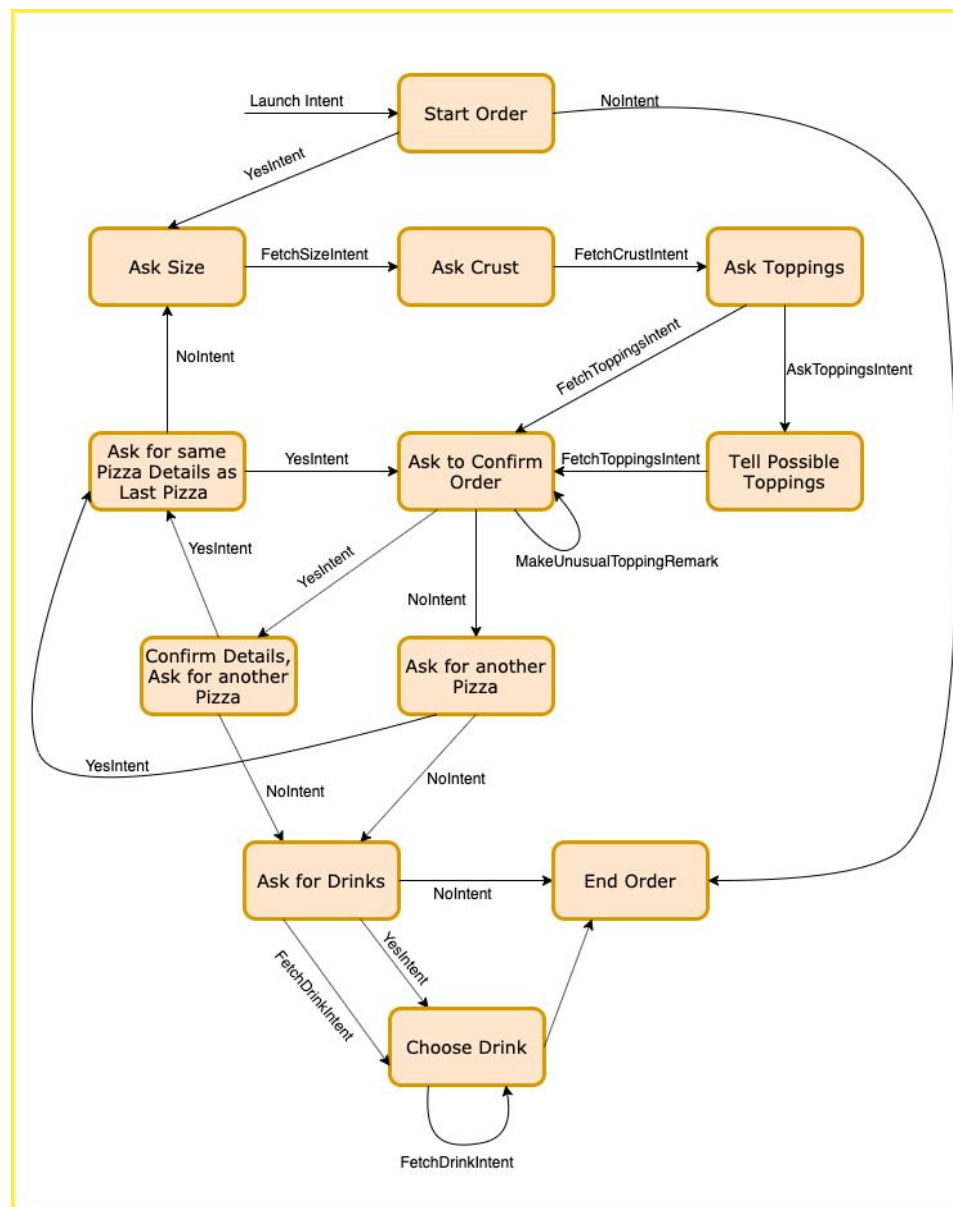October 11th, 2019

The sample demo video for this skill can be found at:
https://drive.google.com/open?id=1JN9M0hJX7rcVfkl2fKBimQwXjAR96orV
In addition to the basic pizza ordering task, I have included drink ordering capability
as well as a cool thing to comment if somebody orders unusual pizza toppings like
pineapple or watermelon!

1. **State Diagram of the skill:**

2. **Sample Utterances used:**
   - **LaunchIntent:** "start my pizza order"
   - **BeginPizzaIntent:**
     - i want some pizza
     - i want to order pizza
     - i wanted to order a pizza
     - I would like to order a pizza
     - yeah i would like to order a pizza
     - yeah I would like to order some pizzas
   - **FetchSizeIntent:** {size} is a custom slot for pizza size. It can take "regular", "medium", "large" as values. Sample utterances for this intent are:
     - i'd like {size} please
     - i want {size} please
     - i would like {size}
     - i'd like {size}
     - {size} please
     - {size} pizza should be good
     - {size} pizza
     - {size}
     - I want a {size} pizza
   - **FetchCrustIntent:** {crust} is a custom slot for pizza crust type. It can take "focaccia", "thin", "thick" and "cheese filled" as values. Sample utterances for this intent are:
     - {crust} please
     - {crust} crust please
     - {crust} crust
     - {crust}
     - I want {crust} crust
     - I would like to have {crust} crust
   - **FetchToppingsIntent:** It is used to capture the toppings of the pizza that user provides. {first}, {second}, {third}, {fourth} are four string slots to capture upto 4 allowed toppings. Sample utterances for this intent are:
     - no toppings
     - no toppings please
     - no topping
     - no i dont want any topping
     - no i dont want any toppings
     - i dont want any toppings
     - i dont want any topping
     - {first} {second} {third} {fourth}
     - {first} {second} {third} and {fourth}

- {first} {second} {third}
- {first} {second} and {third}
- {first} {second}
- {first}
- {first} and {second}
- only {first}
- only {first} and {second}
- i want {first} {second} {third} {fourth}
- i want {first} {second} {third} and {fourth}
- i want {first} {second} {third} {fourth}
- i want {first} {second} {third} and {fourth}
- i want {first} {second} {third}
- i want {first} {second} and {third}
- i want {first} {second}
- i want {first} and {second}
- i want {first} only
- i want {first} and {second} only

- **AskToppingsIntent:** It is used to understand if user wants to know the list of possible toppings. The sample utterances are:
  - what do you offer
  - what all do you offer
  - what toppings do you have
  - is there a list of toppings
  - can u tell me the list of toppings
  - which toppings are available
  - What are my options

- **FetchDrinkIntent:** It is used to capture the user's drink choice. {drink} is the a custom slot. Optionally someone can say {number} glasses of the drink. {number} is a slot of type AMAZON.NUMBER. The sample utterances are:
  - i'd like {number} glasses of {drink}
  - {number} glasses of {drink}
  - i'd like {number} glasses of {drink} please
  - {number} glasses of {drink} please
  - {drink} would be nice
  - i'd like {drink} please
  - yes i want {drink}
  - ok i want {drink}
  - yes {drink}
  - i'd like some {drink}
  - {drink} should be good
  - could you add {drink}
  - {drink} it is
  - i'll order {drink}

- i want {drink}
- {drink} would be great
- {drink}
- i'd like {drink}
- **YesIntent:** The sample utterances are:
    - yes i want drink
    - yes i want it
    - yes i want a drink
    - yes i want another pizza
    - yes i want to order a pizza
    - yes i'd like a pizza
    - yes i want some pizza
    - yes i want pizza
    - yes that would be great
    - that would be great
    - yes please
    - yes i would like to know
    - Ya
    - Yep
    - Yeah
    - Yes
    - yes that would be nice
    - yeah sure
    - yes could you tell it again
    - Yes could you please repeat it
- **NoIntent**: It is used for multiple states during the order. The sample utterances are:
    - uhh no
    - no that would be all
    - na
    - no
    - no i dont want anything more
    - no its fine
    - no i trust you
    - no i dont want
    - no i dont want another pizza
    - No i dont want it
    - No i dont want pizza
    - No i dont want a pizza
    - no i dont want any drink
    - nope

3. **Custom Slots:**

- **PIZZA_TOPPINGS:** {tofu, capsicum, capsicums, meatball, broccoli, spinach, jalapeno, jalapenos, olive, olives, pepperoni, onion, onions, tomato, tomatoes, ham, sausage, sausages, mushroom, mushrooms, steak, shrimp, shrimps, paneer, bacon, pineapple, pineapples, watermelon, watermelons, apple, apples, kiwi, kiwis, cashew, cashews, fries, chocolate, raisin, raisins}
- **PIZZA_CRUST:** {focaccia, thick, thin, cheese}
- **PIZZA_SIZE:** {regular, medium, large}
- **SIDE_DRINKS:** {coke, lemonade}

4. **Intents:**
   - **LaunchIntent:** It is used to invoke the pizza order skill and ask if user wants to order a pizza.
   - **FetchSizeIntent:** It is used to capture the size of the pizza that user provides.
   - **FetchCrustIntent:** It is used to capture the crust of the pizza that user provides.
   - **FetchToppingsIntent:** It is used to capture the toppings of the pizza that user provides. It also remarks on user's choice of toppings if the toppings are unusual.
   - **AskToppingsIntent:** It is used to understand if user wants to know the list of possible toppings.
   - **FetchDrinkIntent**: It is used to capture user's choice of drink and it confirms the drink as well.
   - **YesIntent:** It is used for multiple actions depending on the state attribute stored in the session attributes-
     - To know if user wants the system to give the current order details.
     - To know if user wants to order another pizza.
     - To know if the user wants the same toppings, crust and size for the next pizza as the previous one.
     - To know if a user wants a drink.
   - **NoIntent**: Similar to YesIntent, it is also used for multiple actions depending on the state attribute stored in the session attributes-
     - To know if user wants the system to give the current order details.
     - To know if user wants to order another pizza.
     - To know if the user wants the same toppings, crust and size for the next pizza as the previous one.
     - To know if a user wants a drink.

5. **References**:
   - http://tts.speech.cs.cmu.edu/courses/11492/slides/alexa_skills.pdf
   - https://developer.amazon.com/blogs/post/Tx14R0IYYGH3SKT/flask-ask-a-new-python-framework-for-rapid-alexa-skills-kit-development
   - https://mineospizza.com/pizza.html for generic toppings and crust information.