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**CS 510: Voice Assistants**

**Homework 3**

**DialogFlow/Google Actions- Event Scheduler**

**Web demo link:** <https://bot.dialogflow.com/82e8dac4-445d-4aac-b2c5-85af01945c49>

**Step 1- UseCaseName**

Add a Calendar Event

**Agent Name: Event Scheduler**

**Step 2 – Intents**

**1. Intent:**

ScheduleEventIntent

**Description:**

This intent will help with scheduling any event on the calendar for the user by asking the details such as date, time, and name of the event.

## **2. Intent:**

CancelEventIntent

### **Description:**

This intent will cancel an existing event that the user might have on his/her calendar by asking for the date, time, and name of the event.

## **3. Intent:**

LookupCalendar

### **Description:**

This intent will look up the user's calendar for the requested date and time and respond back accordingly if the slot is free or busy.

## **Step 3 – Training Phrases**

### **Intent 1:**

ScheduleEventIntent

### Training Phrases:

1. Schedule my calendar for {EventName} on {EventDate} at {EventTime}
2. Please schedule my calendar for {EventTime} {EventDate}
3. I would like to schedule my calendar for {EventName} on {EventDate} at {EventTime}
4. Please make an appointment on my calendar for {EventName} on {EventDate} at {EventTime}
5. I would like to make an appointment on my calendar for {EventName} on {EventDate} at {EventTime}
6. Schedule an appointment on my calendar for {EventName} on {EventTime} at {EventDate}
7. I want to go for a {EventName} on {EventDate} at {EventDate}
8. Please reserve my calendar for {EventName} on {EventDate} at {EventTime}
9. Can you please reserve my calendar for {EventName} on {EventDate} at {EventTime}
10. I would like to reserve my calendar for {EventName} on {EventDate} at {EventTime}
11. Can you book an appointment on my calendar for {EventName} on {EventDate} at {EventTime}
12. Please book an appointment on my calendar for {EventName} on {EventDate} at {EventTime}
13. Schedule a dental cleaning at {EventTime} on {EventDate}
14. Book an appointment for hair cut at {EventTime} on {EventDate}

## **Intent 2:**

DeleteEventIntent

### **Training Phrases:**

1. Can you delete the {EventName} I have on {EventDate} at {EventTime}
2. Can you cancel the {EventName} I have on {EventDate} at {EventTime}
3. Cancel the appointment for {EventName} on {EventDate} at {EventTime}
4. I would like to cancel the {EventName} on {EventDate} at {EventTime}
5. I need to delete the {EventName} on {EventDate} at {EventTime}
6. Please delete the {EventName} on {EventDate} at {EventTime}
7. Please remove the event {EventName} on {EventDate} at {EventTime}
8. Could you please delete the {EventName} on {EventDate} at {EventTime} from my calendar
9. Can you remove {EventName} on {EventDate} at {EventTime}
10. Can you please discard the {EventName} I have on {EventDate} at {EventTime}
11. Discard from my calendar the {EventName} I have on {EventDate} at {EventTime}
12. Cancel the house cleaning at {EventTime} on {EventDate}
13. Please delete the wedding event I have on {EventDate} at {EventTime}

### **Intent 3:**

LookupCalendar

#### **Training Phrases**

1. Can I know if my calendar is free on {EventDate} at {EventTime}
2. How is my calendar looking on {EventDate} at {EventTime}
3. Please check my calendar for {EventDate} at {EventTime}
4. Can you please check my calendar on {EventDate} at {EventTime}
5. Am I free on the {EventDate} at {EventTime}
6. How does my calendar look like on {EventDate} at {EventTime}
7. Please lookup my calendar for {EventDate} at {EventTime}
8. Am I available on the {EventDate} at {EventTime}
9. Can you look up my calendar for {EventDate} at {EventTime}
10. Am I available on {EventDate} at {EventTime}
11. Is my calendar free on {EventDate} at {EventTime}

## **Step 4 – Parameters and Entities**

### **Built-in Entity**

1. "name": "EventDate"  
"type": @sys.date-time
2. "name": "EventTime"  
"type": @sys.date-time

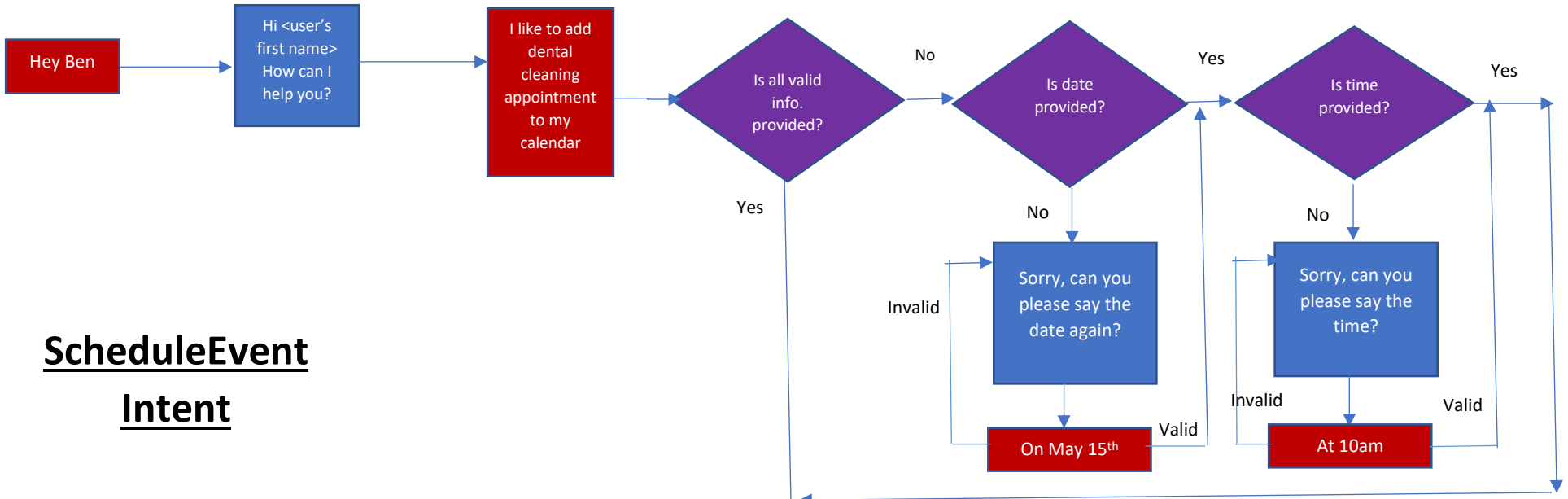
### **Custom Entity**

1. "name": "EventName"  
"type": @EventName

Examples for EventName:

Haircut, Doctor's appointment, Birthday party, Friend's wedding

## **Step 5 – Conversational Flow**



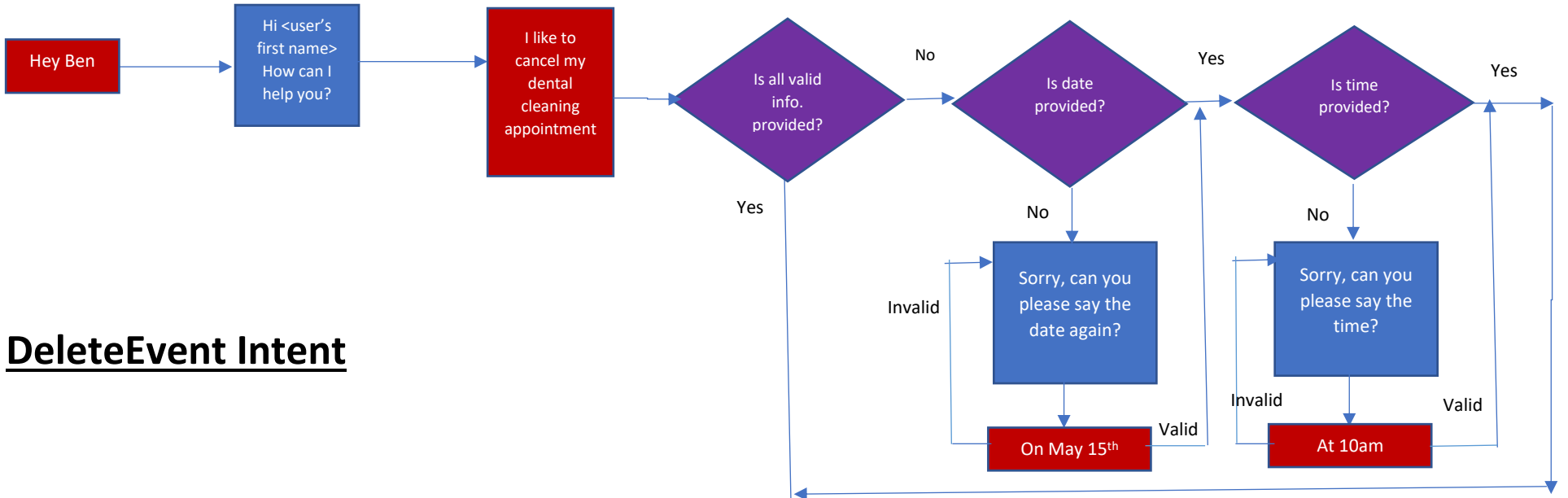
## ScheduleEvent Intent

Flow Chart Key:

User

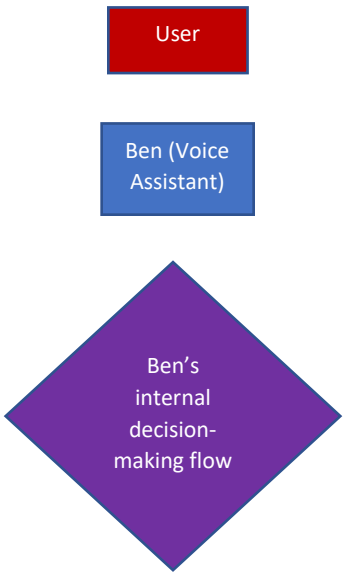
Ben (Voice  
Assistant)

Ben's  
internal  
decision-  
making flow

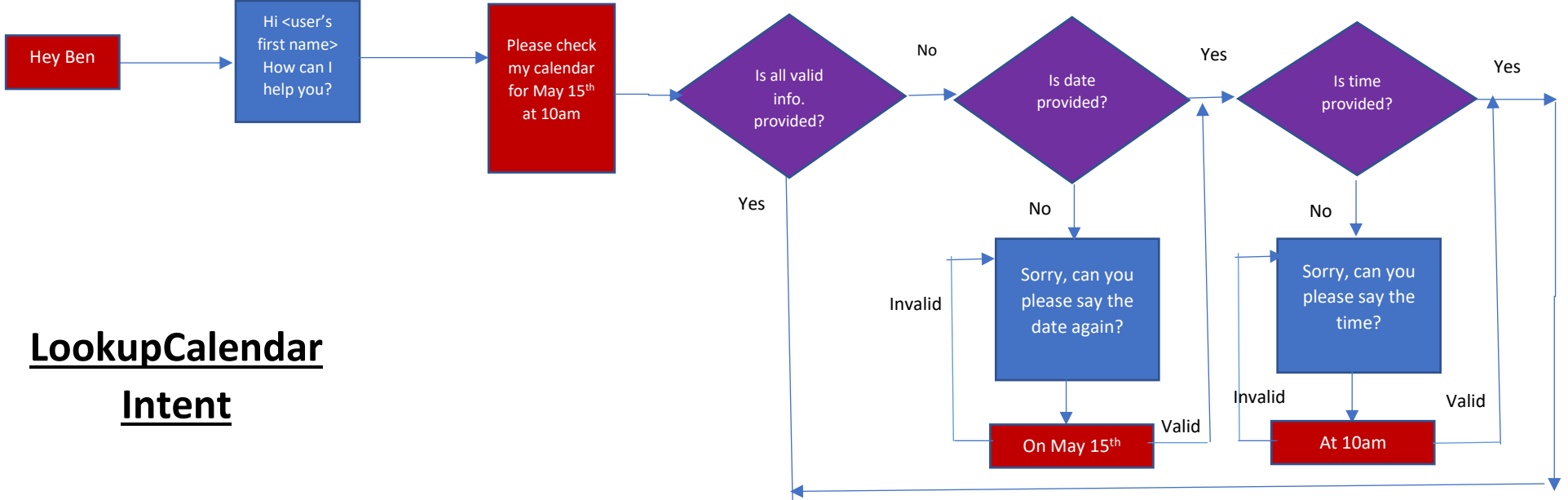


## DeleteEvent Intent

### Flow Chart Key:







## LookupCalendar Intent

Flow Chart Key:

User

Ben (Voice Assistant)

Ben's internal decision-making flow

## **Step 6 - Logic for Each Intent**

### **1. Schedule Event**

```
If (CurrentEvent (EventDate & EventTime) == BusyDatesTimes (EventDate & EventTime))  
{  
    ' Your calendar is booked for this slot, please try another slot'  
  
Else  
    ' Your event is scheduled, Have a good day!'  
  
}
```

### **2. Cancel Event**

```
If (CurrentEvent (EventDate & EventTime) == ExistingEvent (EventDate & EventTime))  
{  
    ' Your event is canceled, Have a good day!'  
  
Else  
    ' There is no such event in your calendar!'  
  
}
```

### 3. Calendar Lookup

If (LookupSlot(EventDate & EventTime) == ExistingEvent (EventDate & EventTime))

{

‘ Sorry, your calendar is already booked for this slot.’

Else

‘Yes, your calendar is free at this time!’

}

### **Step 7 - Build the Dialogflow agent**

Enclosed the zip file for interaction model and fulfilment for Dialogflow.

### **Step 8 - Test the Application:**

#### **Sample List of Phrases:**

1. Please make an appointment for haircut on August 25 at noon
2. Make an appointment for dental cleaning on August 15 2024 at 6pm

3. Create an appointment for birthday party on July 23 2023 at 6pm
4. Please cancel the appointment for haircut on October 1 at 10am
5. Cancel the cleaning appointment on September 1 at 11am
6. Book my calendar for doctor's appointment on September 10 at 10am
7. Cancel my doctor's appointment on September 1 at 11am
8. Schedule an appointment for car service on October 12 at noon
9. Cancel the car service appointment on October 12 at noon
10. Is my calendar free on September 1 at 11am
11. Am I available on February 3 at 4pm
12. Can you schedule a cleaning appointment on May 10 at 10am
13. How does my calendar look like for August 25 at 5pm
14. Is my calendar busy on January 15 at 4pm
15. Is there any event on my calendar on June 4 at 3pm

### **Step 9 – Review and Reflection:**

My overall impression of building a Dialogflow agent and testing it was positive. The Dialogflow platform was intuitive and easy to use. Having all the tabs such as Intent, Fulfillment, Integrations etc on home page and quick loading times was helpful. I however had two different tabs opened always on my browser, one for the Intent and the other for the Fulfillment, so I can have both viewable in parallel which helped with quicker deployments. I initially had some trouble passing the parameters from the intent to the fulfillment logic. The google actions support pages were not fully helpful for this specific issue. But referring to the online forums such as stackoverflow helped me get this working. I also had issues when I tried to use the @sys.date and @sys.time for my training phrases because the @sys.date would capture the right date given by the user but the @sys.time would capture the time and record it for today's date. So, I ended up using the @sys.date-time entity which correctly captures the date and time of the event. I like the storage of the date and time in the ISO 8601 format which is easy for data processing in the various intents.

Yes, this process was easier after working on Alexa platform. I felt that in Alexa I often had to invoke my agent in the middle of the conversation as Alexa will match with some other agent. But in Dialogflow (Google Actions platform), I did not have this issue. But the deployment time every time was much longer than what I saw on Alexa platform. I liked the drop-down option in test tab where I can pick my previous inputs easily to test again. I liked the intent name and parameter values being displayed once agent processes input. This is useful for quick

debug of why fulfillment logic did not work. The support documentation for Alexa was better than Google in my opinion. But there was no support from online forums for questions on Alexa. Whereas Google Actions platform had good number of discussions in online forums which was helpful. I would prefer working on Dialogflow/Google Actions platform than Alexa overall.

With regards to feedback received from homework 1, I incorporated all of them in this homework. I changed the use case from being specific for scheduling a haircut to more generically scheduling any event. I am creating a custom entity and parsing the event name. I also added new intents like 'Canceling an event' and 'Looking up calendar'. I added more training phrases for all the intents. Also, I used my learning and testing experience from Alexa homework in Dialogflow/Google Actions homework.