

Report

The prototype

The project is made by voiceflow. My project has eight main functions, namely order restaurants, order cooked food, play music, record bills, check air tickets, manage timetables, chat and order movie tickets.

In the restaurant reservation function, the user can book a specific restaurant, with a predetermined arrival date and specific time. After the reservation is successful, the voice robot will save the order in the google sheet. The user can check whether the order is completed or cancel the order through the voice robot. the order information saved in the google sheet will be deleted after the cancellation of the order is completed. Users can also query the business hours of each restaurant through the voice robot.

restaurant	time
KFC	from 8 o'clock to 22 o'clock
McDonald	from 7 o'clock to 21 o'clock
Pizza Hut	from 11 o'clock to 21 o'clock
Burger King	from 8 o'clock to 21 o'clock
Subway	from 7 o'clock to 22 o'clock

In the order cooked food function, users can order cooked food through the voice robot. The scheduled cooked food includes pizza and hamburgers. The user can choose the number, type and size of pizza according to the prompts, or the number and type of hamburgers. After the reservation is successful, the order will be imported into the google sheet and provided to the user's order number. Users can query and cancel related orders based on the order number. After the cancellation of the order is completed, the order information saved in the google sheet will be deleted. Users can also inquire about the restaurant's business hours and more information about the pizza or hamburger.

restaurant	time
Domino	from 11 o'clock to 21 o'clock
Burger King	from 8 o'clock to 21 o'clock

In the play music function, the user can order a song through the voice robot, and the user can also pause the song to select another song or continue to play the song at any time.

song
Because of you
Never Had A Dream Come True
Anyone of us
She
I want it that way
My happy ending

In the record bills function, the user can query the consumption records saved in the google

sheet through the voice robot or add a new consumption record in the google sheet, or query the total consumption of all the consumption records.

thing	cost	sum
water	3	1496
bag	200	
clothes	100	
computer	1000	
meat	10	
vegetable	8	
books	20	
bottle	5	
bed	150	

In the check air tickets function, users can book tickets through the voice robot, users can select the flight section to query the flight date and time for booking, or query more information about this flight. After the reservation is successful, the voice robot will save the order in the google sheet. The user can check whether the order is completed or cancel the order through the voice robot, and the order information saved in the google sheet will be deleted after the cancellation of the order is completed.

from to	date	time	flight number	information
from Nottingham to london	Saturday	08:00	55123	This flight will take 35 minutes. Take a medium-sized passenger plane, if there is no special weather, there will be no delay
from london to nottingham	Sunday	07:50	33122	This flight will take 35 minutes. Take a medium-sized passenger plane, if there is no special weather, there will be no delay
from Nottingham to Manchester	Monday	09:00	67342	This flight will take 30 minutes. Take a medium-sized passenger plane, if there is no special weather, there will be no delay
from Manchester to nottingham	Tuesday	10:00	42425	This flight will take 30 minutes. Take a medium-sized passenger plane, if there is no special weather, there will be no delay
from Nottingham to Glasgow	Thursday	09:30	64542	This flight will take an hour. Take a medium-sized passenger plane, if there is no special weather, there will be no delay
from Glasgow to nottingham	Friday	09:00	74632	This flight will take an hour. Take a medium-sized passenger plane, if there is no special weather, there will be no delay

In the timetables management function, the user can query what needs to be done today, and if the matter has been completed, the voice robot will provide the next task to be done. The user can also add a new task or modify a task in the google sheet through the voice robot.

task
go shopping
do housework
do homework
make launch

In the order movie tickets function, the user can select the movie they want to watch through the voice robot, choose the number of movie tickets to buy, select the viewing date and time, and finally the voice robot will give the total ticket price, and finally the user agrees to purchase to complete the order, No refund service will be provided after the normal movie ticket reservation. There is no refund service in the order movie ticket function, but users can also check the order in the google sheet through the voice robot.

movie	today	tomorrow	cost
Spiderman	10:00 13:00 16:30 19:30	9:40 14:30 19:00	10
The Matrix	9:50 14:00 18:00	10:20 15:10 19:30	11
iron Man	10:30 15:30 18:30	10:30 13:00 16:30 19:30	9

In the chat function, some simple questions and answers are set up, and the user can have some simple conversations with the voice robot to enrich the user's life.

Design process

sample dialogs

Meituan APP

Hi, Gao. Welcome to Meituan app. Do you want to order cooked food, query order or cancel order?

User

order cooked food

Meituan APP

Which restaurant do you want to choose?

User

Domino

Meituan APP

Welcome to Domino, what do you want to order?

User

pizza

Meituan APP

How many do you want?

User

2

Meituan APP

What size do you want

User

Large

Meituan APP

What type do you want

User

Beef

Meituan APP

Sorry! We only have New Orleans Grilled Chicken, BBQ and cheese pizza. Which one do you want?

User

Cheese

Meituan APP

Very good! Are you sure you want to order 2 large cheese pizza?

User

Yes

Meituan APP

Please tell me your phone number.

User

07312443235

Meituan APP

Please tell me your address.

User

Nottingham two

Meituan APP

Great, I have order you two large cheese pizza to Nottingham two, The order number is 1.

Meituan APP

Do you have anything else you want to order?

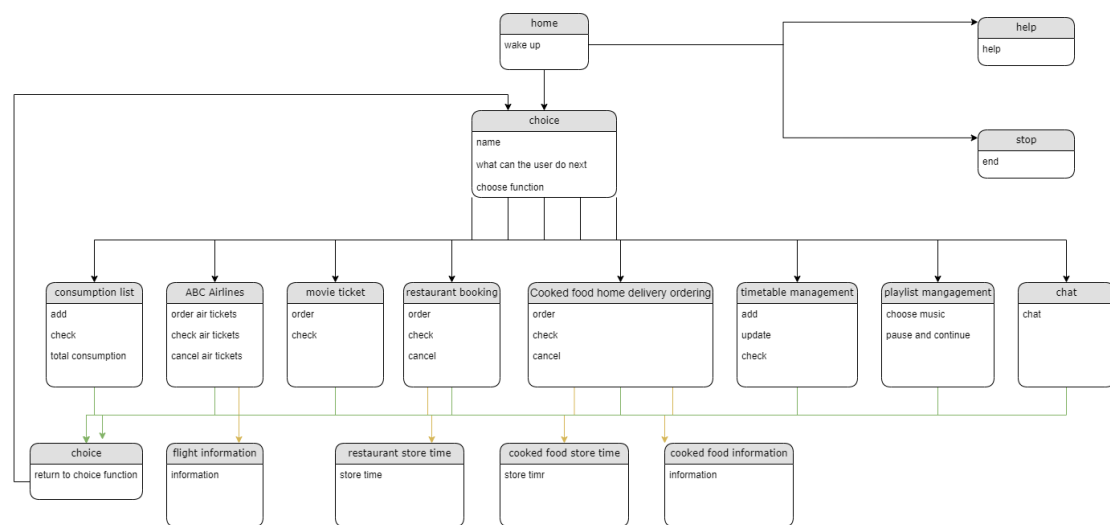
User

No

Meituan APP

Thank you for your patronage. Looking forward to your visit to Domino's again.

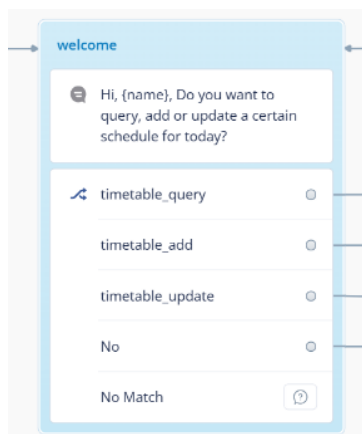
flow diagrams



VUI Design principles

Prompt design

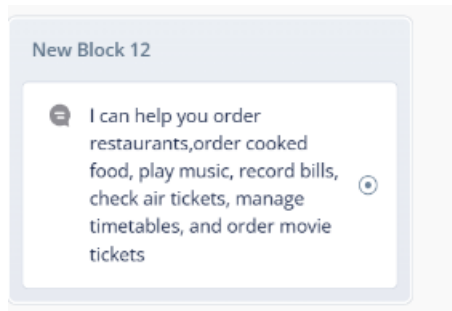
I have specific tips on each question to help users understand what they should reply to. For example, in the timetable management function:



"Do you want to query, add or update a certain schedule for today?" When the user first enters this function, the voice robot will give such a question to let the user know the function he can choose next, such as adding a task or querying a task . If the user does not answer the information that the voice robot can check, the voice robot will give an error prompt: "Please say add tasks, update tasks or query tasks." This time the prompt information will let the user know the options they can enter more directly .

Discoverability

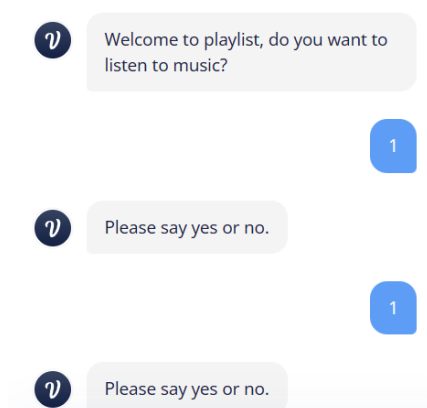
Users can understand the functions that the voice robot can achieve, for example, in the choice function:



The voice robot will tell the user the functions he can choose: "I can help you order restaurants, order cooked food, play music, record bills, check air tickets, manage timetables, chat and order movie tickets." Let the user know that the following can be done What things.

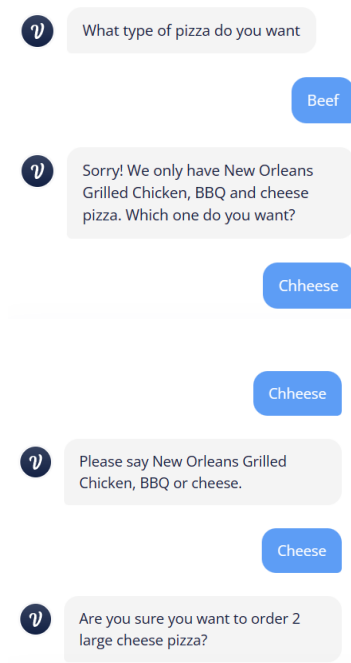
Error handling

When the user's answer cannot be matched with the voice robot, it is speech detected, but nothing recognized. The voice robot will tell the user a more direct answer for the user to respond effectively. Some error feedback is progressively step by step according to the number of errors. Some are giving the same error feedback, because this is already the best way to solve the error that the voice robot can provide, for example, in the process of canceling an order in the order cooked food function:



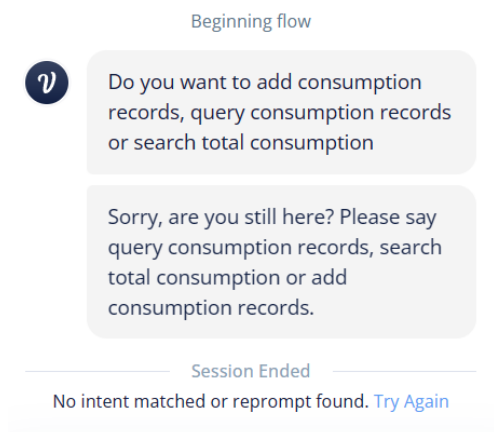
If the user's answer does not match the voice robot, the voice robot will clearly tell the user what to answer.

For another example, in the order cooked food function, select the size of the pizza:



The first time the user's answer is not recognized by the system, it will give a first-level error prompt, and the second time the user's answer is not recognized by the system, it will give a more accurate error response.

In some locations, if the user does not reply for a long time, that is, no speech detected, the voice robot will ask, and if there is no reply, it will end the conversation. For example, in the consumption list function:

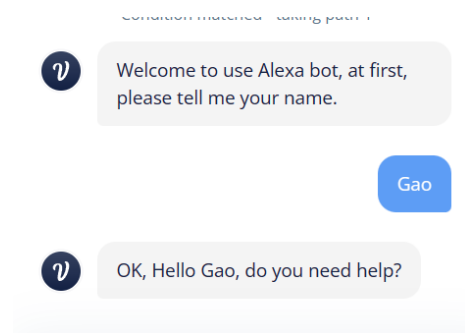


If the user doesn't answer for a long time, the voice robot will ask: "Sorry, are you still here? Please say query consumption records, search total consumption or add consumption records." dialogue.

Personalisation

In the choice module, the voice robot will first ask your name and save it in a variable, which can be used in other functions in the future, and if the user does not exit this chat

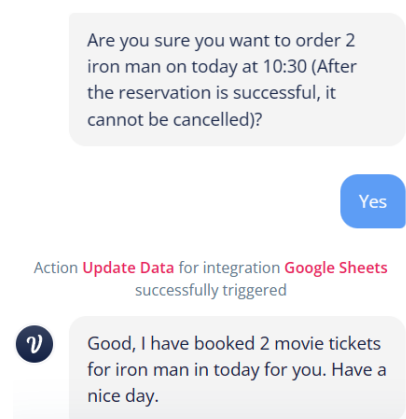
and re-enters the module, it will not ask the user name again .



Confirmation

Before the final reservation, the voice robot will perform an explicit confirmation, asking the user whether the order is confirmed, if confirmed, the order is completed, if not confirmed, the order will be cancelled.

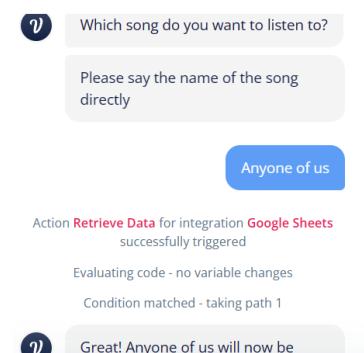
For example, at the end of movie ticket reservation:



The voice robot will ask the user to confirm the order. The order will not be completed until the confirmation is completed.

However, in some other functions, Explicit confirmation is not required, and relevant user requirements can be completed through Implicit confirmation.

For example, play a song in the playlist function:

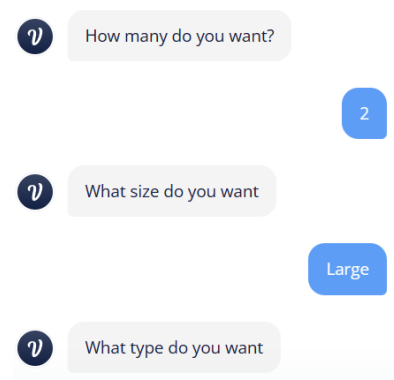


When the user tells the voice robot the name of the song to be listened to, the user can be confident in the answer. All voice robots will automatically play the song without confirming it again, but the voice robot will also give a relevant response. I think these confirmation policies are very necessary and effective.

Context

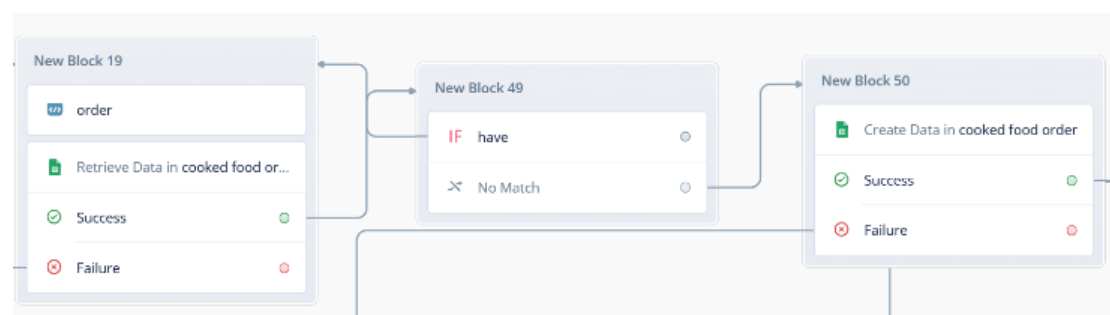
I think the context tracking is used effectively.

For example, in the order cooked food function, when the user selects pizza, even if the user does not have the term pizza in the answer, the voice robot will still know that the user is replying to pizza and finally complete the order.



Integration

Each function of the voice robot has a corresponding Google sheet table, allowing users to query, add, delete, or update the data in the table, so as to achieve related functions.



Advanced features

If there is no reply for a long time, the chat bot will not be closed automatically, and the user can wake up the chat bot through 'Alexa' to continue chatting at any time.

When booking air tickets, cooked food, etc., after the reservation is successful, a non-repetitive order number will be provided. The user can use the order number to query and cancel the function. The order number is discharged after the existing

order number, which will not cause duplicate order numbers, and improve the accuracy of query and cancellation.

In the movie ticket reservation function, Google sheet will automatically generate and output the total ticket price.

When entering the choice module again, the voice robot will not ask for the name again, but will directly enter the function selection.

In the playlist function, a pause function is added during music playback, and the user can switch songs or continue playing the song.

Conclusion

I think my project requirements have been completed well, the project requirements have been met, and the results have been good. Because the most widespread use of voice robots is product reservation, so there are many product reservation functions in my project, but they are different. This project can realize product reservation, query and cancellation functions, task list addition, update and query functions, song search and playback functions, consumption record query and addition functions, and simple chat functions basically meet the basic requirements of a voice robot.

Due to time constraints, there are relatively few functional data in the voice robot, which I think is a shortcoming of the voice robot I designed.

I think that to be a truly successful voice robot requires a real connection to an app or webpage, but this will have technical and privacy issues, and it will take a lot of time to design models and dialogues.

If I have more time, I will continue to add functions and data in the functions to make my voice robot more widely used.