The document outlines the process of creating a bot named "PizzaPro24" using Amazon Lex. It describes the bot configuration settings, including naming the bot, setting IAM permissions, defining session timeouts, and selecting language options. Key components include the definition of intents—specifically, the "PizzaOrder" intent that captures user requests related to pizza ordering. The intent includes slots for capturing user information such as name, email, phone number, city, street name, and postal code. The document emphasizes the importance of sample utterances for intent recognition and includes details on session management and voice interaction settings. Overall, it serves as a guide for setting up a functional pizza ordering bot with the necessary backend configurations.

The purpose of the bot named **PizzaPro24** is to facilitate pizza ordering and potentially other snack orders. It is designed to interact with users by capturing specific information such as their name, email, phone number, and address details necessary for processing pizza orders. The bot aims to enhance user experience by guiding them through the ordering process while ensuring that all required information is collected for fulfillment.

The key features of Amazon Lex used in the creation of a bot, such as **PizzaPro24**, include:

1. **Intent Recognition**

- **Intents** represent specific actions that the bot can perform in response to user requests. For example, the **"PizzaOrder"** intent captures user queries related to ordering pizza.

2. **Slot Types and Slots**

- **Slots** are used within intents to capture variable information from users, such as their name, email, phone number, address, and preferences regarding the pizza order (e.g., size, crust, toppings). Each slot can have a specific **slot type** (e.g., 'AMAZON.FirstName', 'AMAZON.EmailAddress', 'AMAZON.City') that defines what kind of data it can hold.

3. **Sample Utterances**

- These are predefined phrases that the bot uses to understand different ways users might express the same intent. For example, phrases like "I want to order a pizza" are aligned with the **PizzaOrder** intent.

4. **Voice Interaction**

- Amazon Lex supports voice interaction by providing text-to-speech (TTS) capabilities, allowing users to interact with the bot using voice inputs.

5. **Session Management**

- Lex allows configuration of session timeouts, which dictate how long a session is maintained without user input. This feature aids in retaining context when the user is interacting with the bot.

6. **IAM Permissions**

- The bot requires specific IAM roles for accessing other AWS services. This includes setting permissions that the bot needs to function correctly, such as logging outputs to Amazon CloudWatch.

7. **Conversation Flow Management**

- Amazon Lex enables the designer to create and manage complex conversation flows, defining how the bot acknowledges user input, handles errors, and guides users through a series of questions until all necessary information is collected.

8. **Integration with AWS Services**

- Lex can be combined with AWS Lambda for fulfilling intents, processing data, and responding to users based on the backend functionalities enabled through Lambda.

These features together make Amazon Lex a powerful tool for developing conversational interfaces like

PizzaPro24, enhancing user interaction quality through structured dialogue management, data capture, and multitasking capabilities.

Intents and slots can be configured effectively for user interaction in the "PizzaPro24" bot using Amazon Lex by following these steps:

1. Define Intents

- **Intent Creation**: An intent represents a specific action that fulfills a user's request. For instance, the **"PizzaOrder"** intent is created specifically for handling pizza ordering requests.
- **Intent Details**: Each intent can have a name (e.g., "PizzaOrder"), a maximum of 100 characters, and valid characters including A-Z, a-z, 0-9. You can also describe the intent's purpose for better understanding and utterance generation.

2. Configure Slots

Slots are used within intents to capture the necessary information to fulfill the user's request. Each slot has attributes such as:

- **Name**: The identifier for the slot (e.g., "name", "email", "phone number", "city", "street name", "postal code").
- **Slot Type**: This defines the kind of information that can be captured. For example, common types may include:
 - 'AMAZON.FirstName' for the user's first name
 - 'AMAZON.EmailAddress' for email addresses
 - 'AMAZON.PhoneNumber' for phone numbers
 - 'AMAZON.City' for city names
- **Prompts**: Custom prompts can be specified to ask the user for the required information. For instance, "May I know your first name to proceed further?".

3. Sample Utterances

- **Utterances Definition**: For each intent, sample utterances are defined to help the bot recognize various ways users might request the action. A few examples include:
 - "I would like to order pizza."
 - "Can I get a pizza?"
 - "Order a pizza for me.".

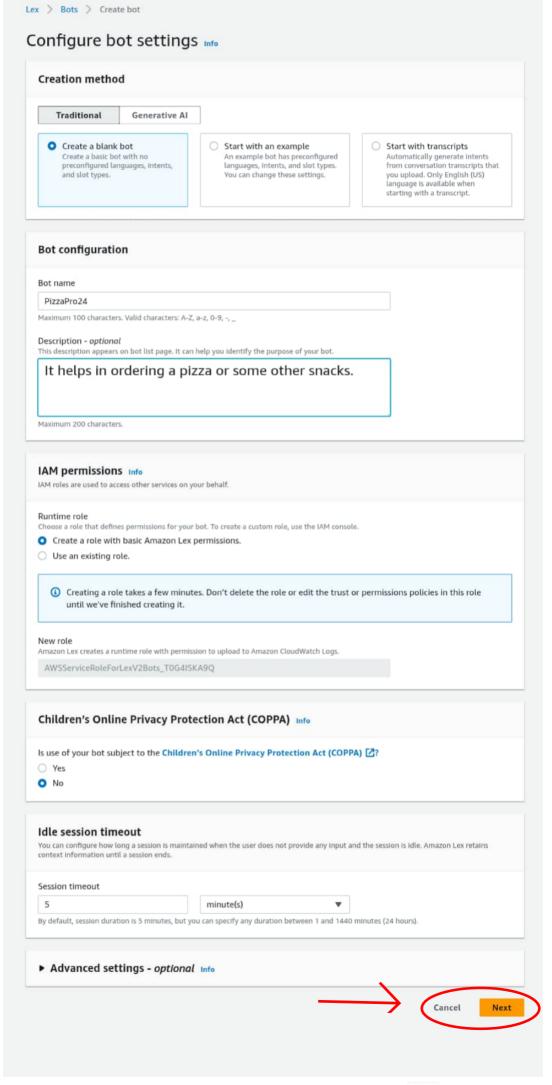
4. Conversation Flow

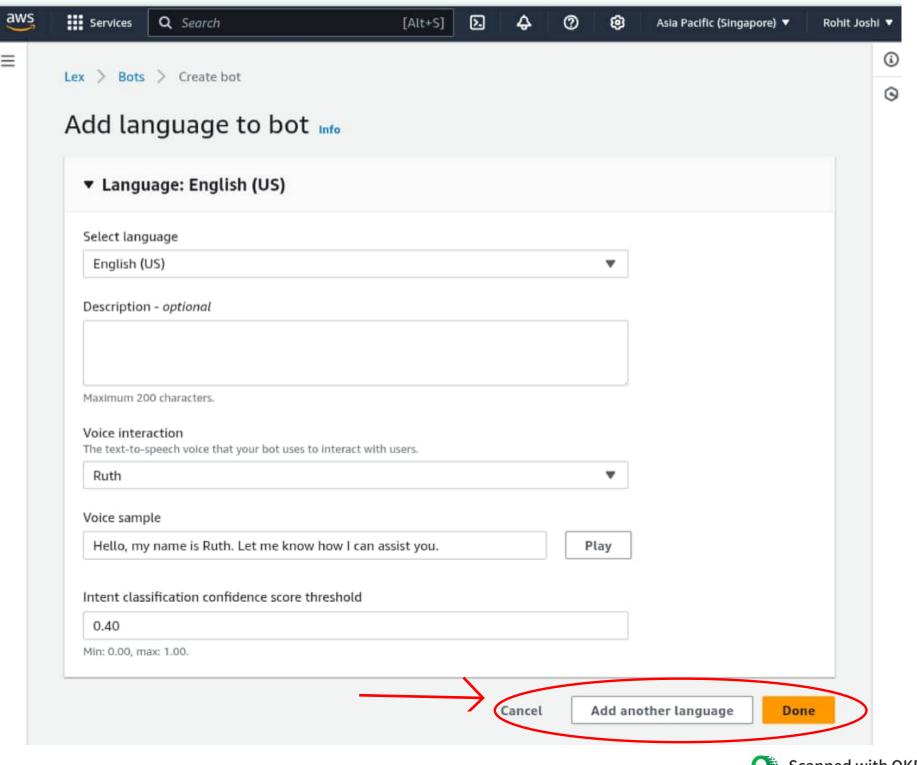
- **Initial Responses**: The bot can provide an initial greeting or acknowledgment when the user begins interaction (e.g., "Hello, welcome to PizzaPro24").
- **Slot Filling**: The bot will sequentially prompt the user to fill the slots based on the defined order. For example, after initializing the conversation, the bot might ask for the user's name, followed by email, phone number, and so on.

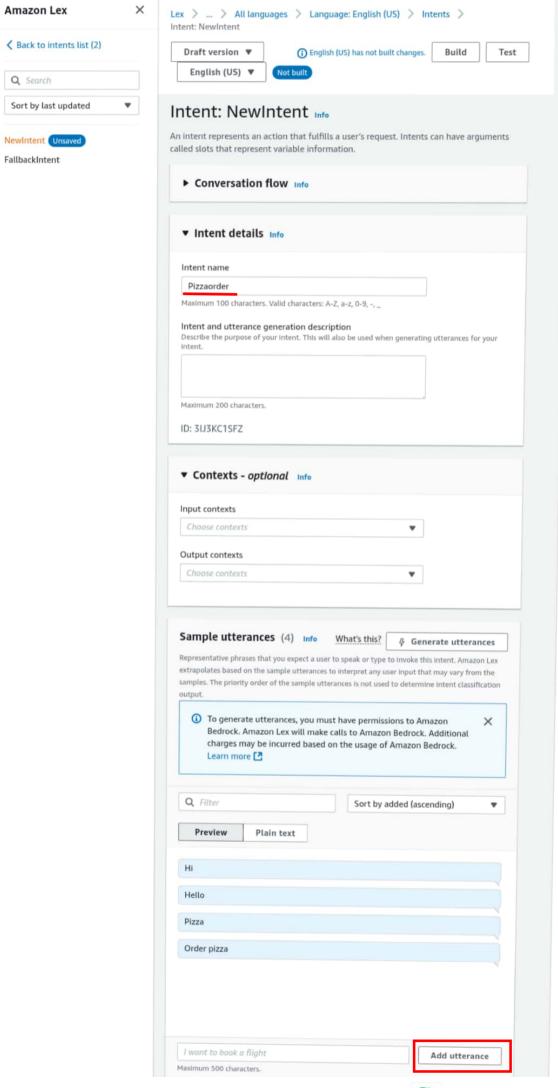
5. Confirmation and Fulfillment

- **Confirmation**: Before finalizing the order, the bot may summarize the details and prompt the user for confirmation. If the user agrees, the order can be processed and confirmed.
- **Fulfillment**: On successful completion, the bot can provide a closing response confirming the order (e.g., "Thank you, your order will be delivered by [time]").

Using these structured configurations, the bot can provide a smooth and interactive experience for users as they place their pizza orders. This structured approach not only enhances user engagement but also ensures that all necessary information is captured efficiently for order processing.







Initial response Info

You can provide messages to acknowledge the user's initial request. You can also configure next step in the conversation and branch based on conditions.

Response to acknowledge the user's request

Message: Hello, welcome to the Pizzapro24

▼ Message group Info

You can define a text message group to respond using plain text.

Message - optional

Hello, welcome to the Pizzapro24

Variations - optional

Advanced options

Configure user request acknowledgement response, dialog code hook and conditional branches.

▼ Slots (0) - optional Info

Add slot

Information that a bot needs to fulfill the intent. The bot prompts for slots required for intent fulfillment, in priority order below.

Q Filter

You haven't added any slots yet.

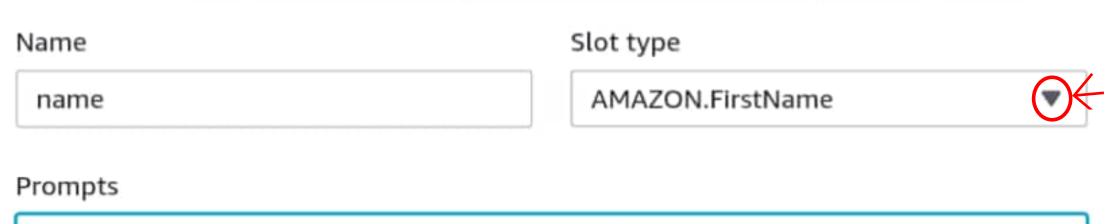


X

A slot is used to capture information from the user to fulfill the intent.

Required for this intent

The bot will prompt for this slot during the conversation if a value is not provided by the user.



May I know your first name to proceed further ?



×

A slot is used to capture information from the user to fulfill the intent.

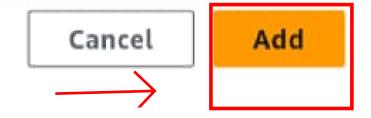
Required for this intent

The bot will prompt for this slot during the conversation if a value is not provided by the user.



Prompts

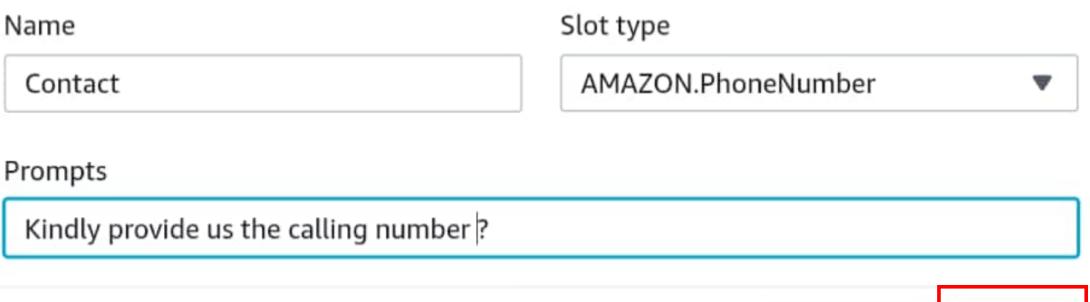
Dear {name}, kindly provide your email address?



X

A slot is used to capture information from the user to fulfill the intent.

Required for this intent





X

A slot is used to capture information from the user to fulfill the intent.

Required for this intent

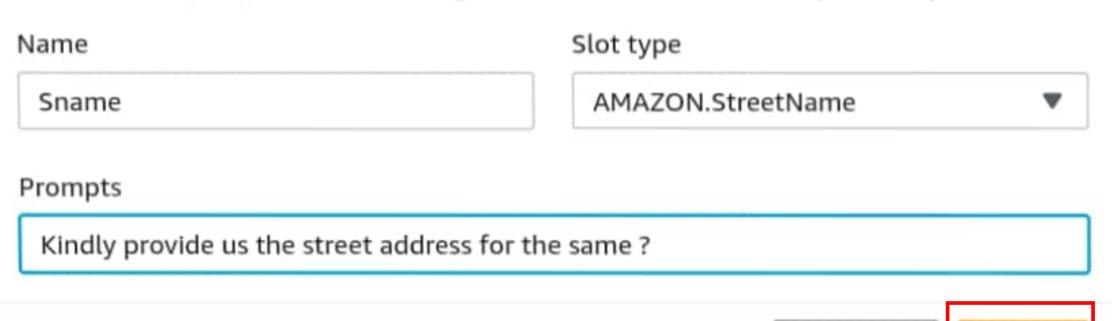




×

A slot is used to capture information from the user to fulfill the intent.

Required for this intent





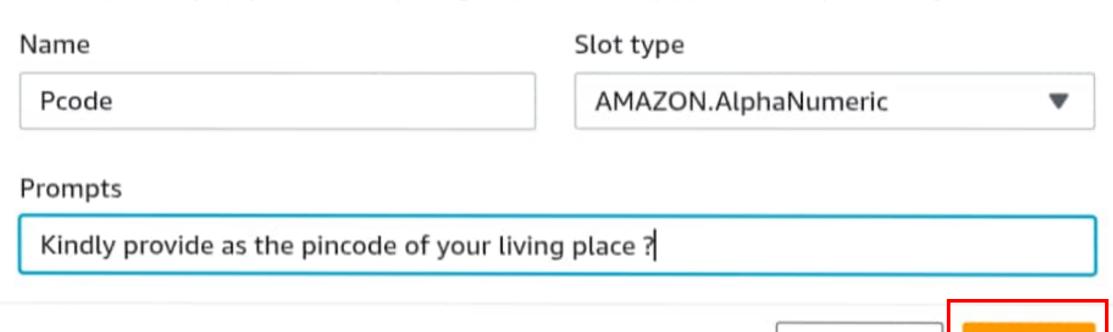
×

Add

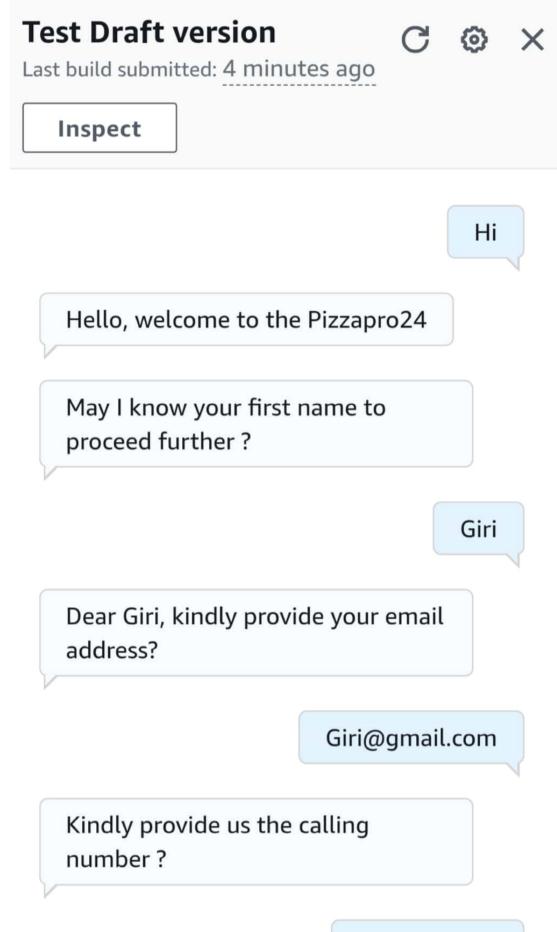
Cancel

A slot is used to capture information from the user to fulfill the intent.

Required for this intent



ID: 3IJ3KC1SFZ



9865321472



Kindly provide us the current living place?

Pune

Kindly provide us the street address for the same?

C28

Kindly provide as the pincode of your living place?

111045

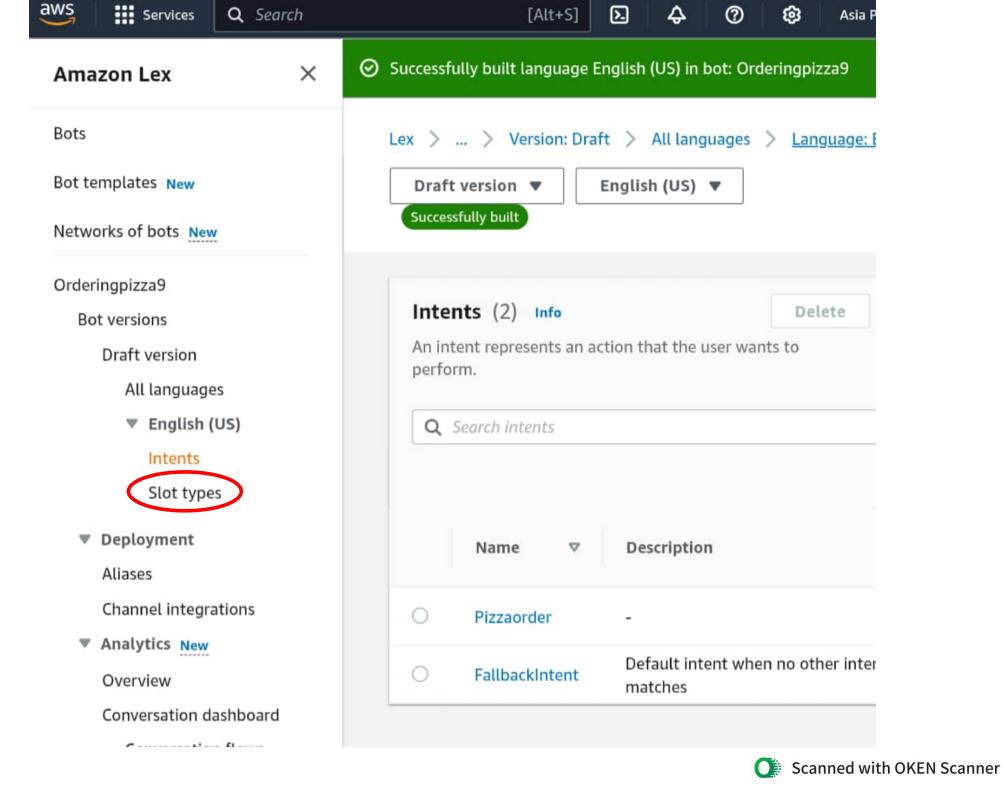
Intent Pizzaorder is fulfilled



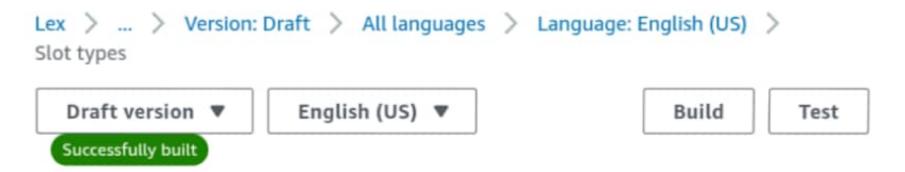


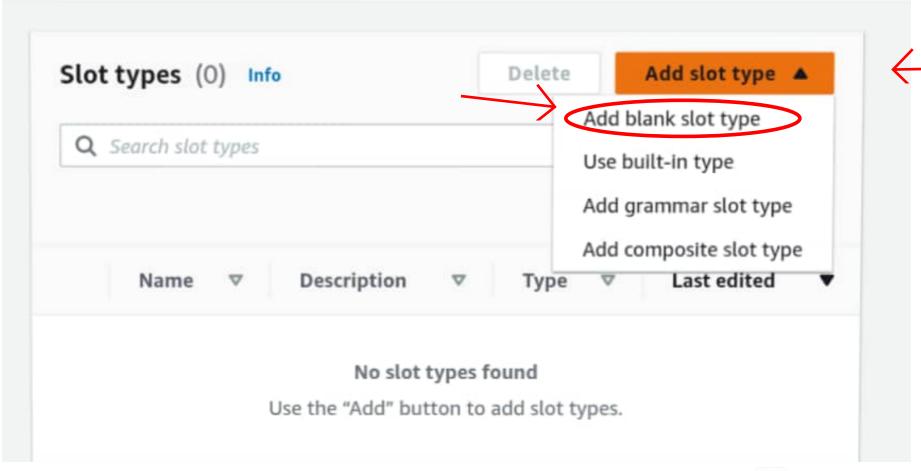
Type a message











X

Create a custom slot type for your bot.

Slot type name

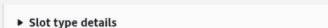
Pizzacat

Maximum 100 characters. Valid characters: A-Z, a-z, 0-9, -, _



Slot type: Pizzacat Info

A slot type is a list of values used to capture values for a slot.



Slot value resolution

Amazon Lex resolves the slot values in an utterance to only the values you provide, or it expands the resolution to related or similar values.

Restrict to slot

Expand values (default)

(default) values
Values used as Use only values
training data. provided.

Slot type values

Modify the list of values used to train the machine learning model to recognize values for a slot.

/eg	Tab or; or enter return for new va
	Vegetarian pizza 🗶
×	
Non veg	Tab or; or enter return for ne Add value
Non vegetarian pizza	×



Create a custom slot type for your bot.



Pizzatype

Maximum 100 characters. Valid characters: A-Z, a-z, 0-9, -, _





Slot type: Pizzatype Info

A slot type is a list of values used to capture values for a slot.

▶ Slot type details

Slot value resolution

Amazon Lex resolves the slot values in an utterance to only the values you provide, or it expands the resolution to related or similar values.

 Expand values (default)

(default) Values used as training data. Restrict to slot
values
Use only values

provided.

Slot type values

Modify the list of values used to train the machine learning model to recognize values for a slot.

Margherita pizza	
×	
Pepperoni pizza	
×	
Mushroom pizza	
×	
Farmhouse pizza	
×	
Seafood pizza	
Value	Add
aximum 140 characters. Valid characters: A-Z, a-z, 0-9, @, #, \$	value



Save Slot type

Create a custom slot type for your bot.

Slot type name

Toppingtype

Maximum 100 characters. Valid characters: A-Z, a-z, 0-9, -, _



Slot type: Toppingtype Info A slot type is a list of values used to capture values for a slot. Slot type details Slot value resolution Amazon Lex resolves the slot values in an utterance to only the values you provide, or it expands the resolution to related or similar values. Expand values Restrict to slot (default) values Values used as Use only values training data. provided. Slot type values Modify the list of values used to train the machine learning model to recognize values for a slot. Q Search slot type values Tab or; or enter return for new va... Pepperoni Pepperoni X × Extra cheese Tab or; or enter return for new va... Extra cheese X X Onions Tab or; or enter return for new va... Onions X × Value Add Tab or; or enter return for ne... value Maximum 140 characters. Valid characters: A-Z, a-z, 0-9, @, #, \$ Use slot values as custom vocabulary Info

Create a custom slot type for your bot.

Slot type name

Slottype

Maximum 100 characters. Valid characters: A-Z, a-z, 0-9, -, _



Slot type: Slottype Info A slot type is a list of values used to capture values for a slot. Slot type details Slot value resolution Amazon Lex resolves the slot values in an utterance to only the values you provide, or it expands the resolution to related or similar values. Expand values Restrict to slot (default) values Values used as Use only values training data. provided. Slot type values Modify the list of values used to train the machine learning model to recognize values for a slot. Q Search slot type values Small Tab or; or enter return for new va... Small X X Medium Tab or; or enter return for new va... Medium X X Large Tab or; or enter return for new va... Medium X Large X × Value Tab or; or enter return for ne... Add value Maximum 140 characters. Valid characters: A-Z, a-z, 0-9, @, #, \$ Use slot values as custom vocabulary Info

×

Create a custom slot type for your bot.

Slot type name

Pizzacrust

Maximum 100 characters. Valid characters: A-Z, a-z, 0-9, -, _



Slot type: Pizzacrust Info

A slot type is a list of values used to capture values for a slot.

▶ Slot type details

Slot value resolution

Amazon Lex resolves the slot values in an utterance to only the values you provide, or it expands the resolution to related or similar values.

Expand values (default) Values used as training data. Restrict to slot values Use only values provided.

Slot type values

Modify the list of values used to train the machine learning model to recognize values for a slot.

Thick	Tab or; or enter return for new va
	Thick X
<	
Thin	Tab or ; or enter return for new va
	Thin X
<	
Value .	Tab or; or enter return for ne Add valu



Create a custom slot type for your bot.



Pizzaquan

Maximum 100 characters. Valid characters: A-Z, a-z, 0-9, -, _

Cancel

X

Slot type: Pizzaquan Info

A slot type is a list of values used to capture values for a slot.

▶ Slot type details

Slot value resolution

Amazon Lex resolves the slot values in an utterance to only the values you provide, or it expands the resolution to related or similar values.

 Expand values (default)
 Values used as

training data.

 Restrict to slot values
 Use only values provided.

Slot type values

Modify the list of values used to train the machine learning model to recognize values for a slot.

Add
value



Create a custom slot type for your bot.

Slot type name

Softdrink

Maximum 100 characters. Valid characters: A-Z, a-z, 0-9, -, _

Cancel

Create a custom slot type for your bot.



Cake

Maximum 100 characters. Valid characters: A-Z, a-z, 0-9, -, _

Cancel

Slot type: Cake Info

A slot type is a list of values used to capture values for a slot.

Slot type details

Slot value resolution

Amazon Lex resolves the slot values in an utterance to only the values you provide, or it expands the resolution to related or similar values.

Expand values (default)

Values used as training data.

Restrict to slot values

Use only values provided.

Slot type values

Modify the list of values used to train the machine learning model to recognize values for a slot.

Q Search slot type values Pineapple Tab or; or enter return for new va... Pineapple cake X × Butterscotch Tab or; or enter return for new va... Butterscotch cake X × Add Choco Tab or; or enter return for ne... value Chocolate cake X Maximum 140 characters. Valid characters: A-Z, a-z, 0-9, @, #, \$ Use slot values as custom vocabulary Info



Slot type details		
Slot value resolution mazon Lex resolves the slot va he resolution to related or sim	alues in an utterance to only the values you provide, or it expan	ds
Expand values (default) Values used as training data.	O Restrict to slot values Use only values provided.	
The state of the s	o train the machine learning model to recognize values for a slo	ot.
odify the list of values used to		ot.
odify the list of values used to		ot.
Q Search slot type value		ot.
Q Search slot type value 1		ot.
Q Search slot type value 1 X)
Q Search slot type value 1 X)
Q Search slot type value 1 X 2		ot.
Q Search slot type value		ot.

Slot type: Drinktype Info

A slot type is a list of values used to capture values for a slot.

Slot type details

Slot value resolution

Amazon Lex resolves the slot values in an utterance to only the values you provide, or it expands the resolution to related or similar values.

 Expand values (default)

> Values used as training data.

 Restrict to slot values
 Use only values

provided.

Slot type values

Modify the list of values used to train the machine learning model to recognize values for a slot.

Q Search slot type values Pepsi Tab or; or enter return for new va... Pepsi X × Coke Tab or : or enter return for new va... Coke X × Fanta Tab or; or enter return for new va... Fanta X × Tab or; or enter return for ne... Add value Maximum 140 characters. Valid characters: A-Z, a-z, 0-9, @, #, \$ Use slot values as custom vocabulary Info



Create a custom slot type for your bot.



Drinktype

Maximum

aracters. Valid characters: A-Z, a-z, 0-9, -, _

Cancel

Add blank slot type

Create a custom slot type for your bot.

Slot type name

Drinkquan

Maximum 100 characters. Valid characters: A-Z, a-z, 0-9, -, _

Cancel

Slot type: Drinkquan Info

A slot type is a list of values used to capture values for a slot.

▶ Slot type details

Slot value resolution

Amazon Lex resolves the slot values in an utterance to only the values you provide, or it expands the resolution to related or similar values.

Expand values (default)

Values used as training data.

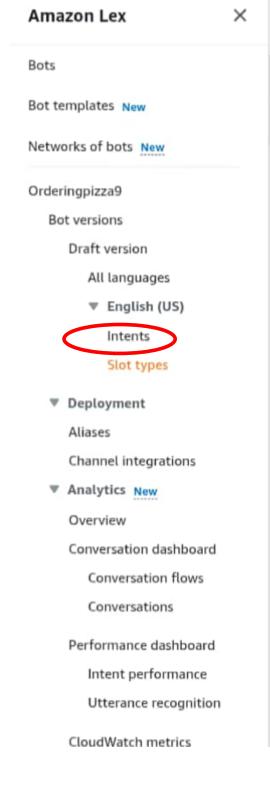
Restrict to slot
values
Use only values
provided.

Slot type values

Modify the list of values used to train the machine learning model to recognize values for a slot.

Q Search slot type values	
1	
×	
2	
×	
3	
×	
Value	Add
faximum 140 characters. Valid characters: A-Z, a-z, 0-9, @, #, \$	valı

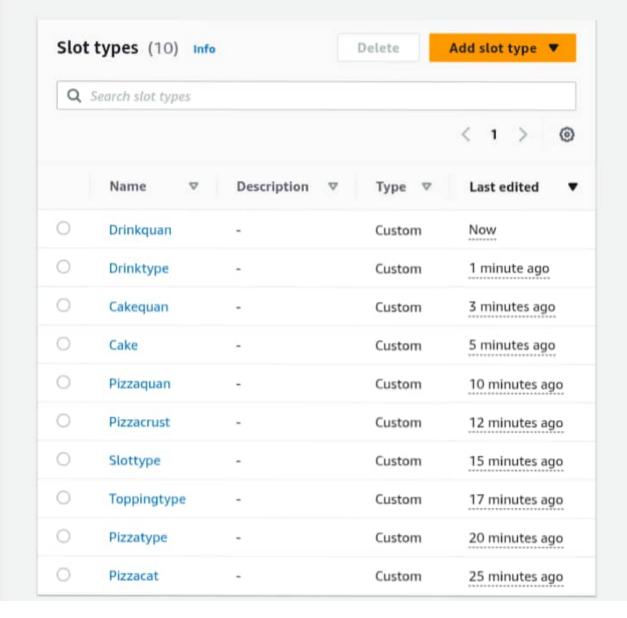






(1)

0



×

A slot is used to capture information from the user to fulfill the intent.

Required for this intent

The bot will prompt for this slot during the conversation if a value is not provided by the user.



Prompts

elcome to Pizzapro24. {Name}. Which Pizza would you prefer today (veg or non veg) ?

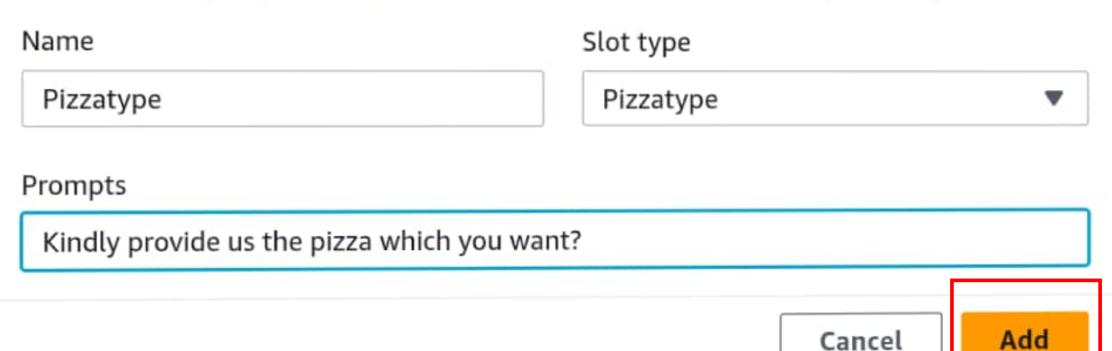


X

A slot is used to capture information from the user to fulfill the intent.

Required for this intent

The bot will prompt for this slot during the conversation if a value is not provided by the user.



×

A slot is used to capture information from the user to fulfill the intent.

Required for this intent

The bot will prompt for this slot during the conversation if a value is not provided by the user.



Prompts

What topping would you like on your pizza (pepperoni, black olives, onions)?

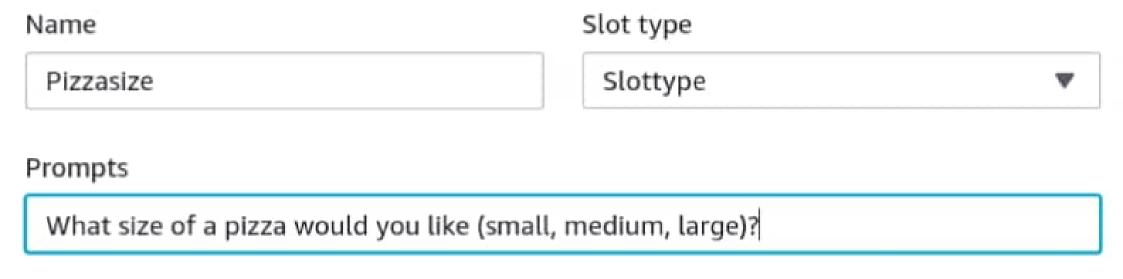


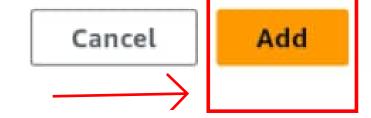
X

A slot is used to capture information from the user to fulfill the intent.

Required for this intent

The bot will prompt for this slot during the conversation if a value is not provided by the user.





×

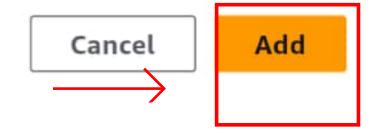
A slot is used to capture information from the user to fulfill the intent.

Required for this intent

The bot will prompt for this slot during the conversation if a value is not provided by the user.



What crust would you like on your pizza (thick or thin)?



×

A slot is used to capture information from the user to fulfill the intent.

Required for this intent

The bot will prompt for this slot during the conversation if a value is not provided by the user.



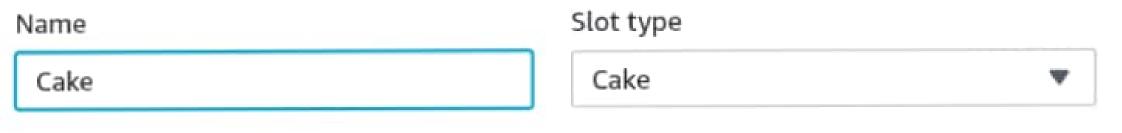


X

A slot is used to capture information from the user to fulfill the intent.

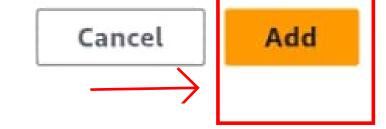
Required for this intent

The bot will prompt for this slot during the conversation if a value is not provided by the user.



Prompts

Would you like to order a cake(pineapple, butterscotch, choco)?



×

A slot is used to capture information from the user to fulfill the intent.

Required for this intent

The bot will prompt for this slot during the conversation if a value is not provided by the user.



Prompts

How many cake would you like to order?



×

A slot is used to capture information from the user to fulfill the intent.

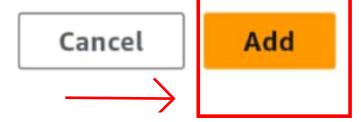
Required for this intent

The bot will prompt for this slot during the conversation if a value is not provided by the user.



Prompts

Which drink would you like to order(Pepsi, Coke, dew, fenta)?



A slot is used to capture information from the user to fulfill the intent.

Required for this intent

The bot will prompt for this slot during the conversation if a value is not provided by the user.

Slot type Name

Softdrinkquantity

Drinkquan



How many drinks would you like to order?



×

A slot is used to capture information from the user to fulfill the intent.

Required for this intent

The bot will prompt for this slot during the conversation if a value is not provided by the user.

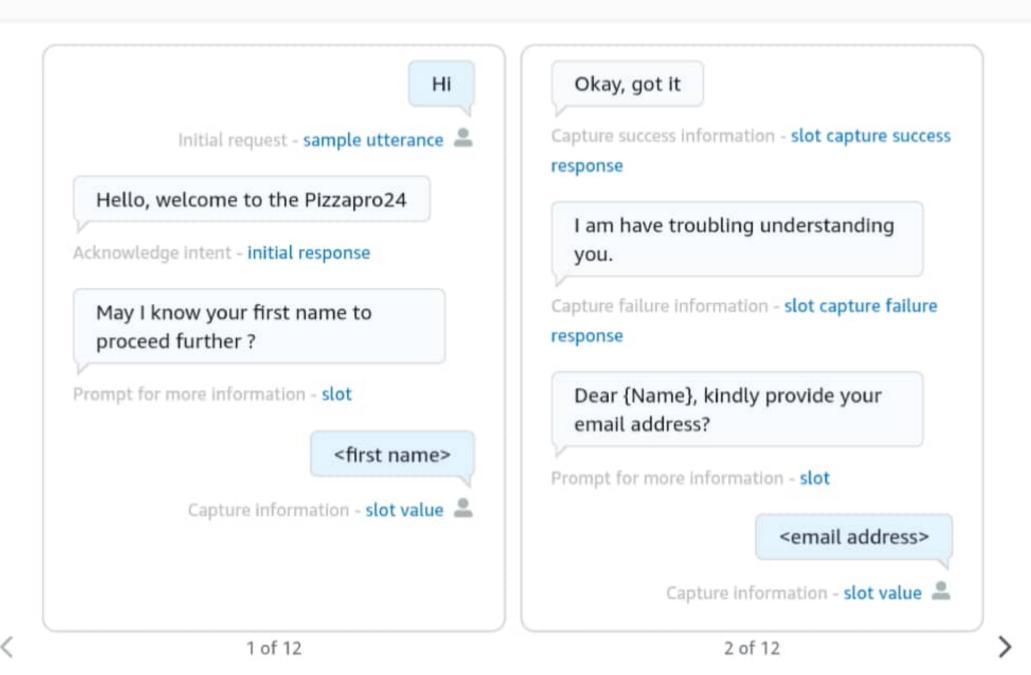


Prompts

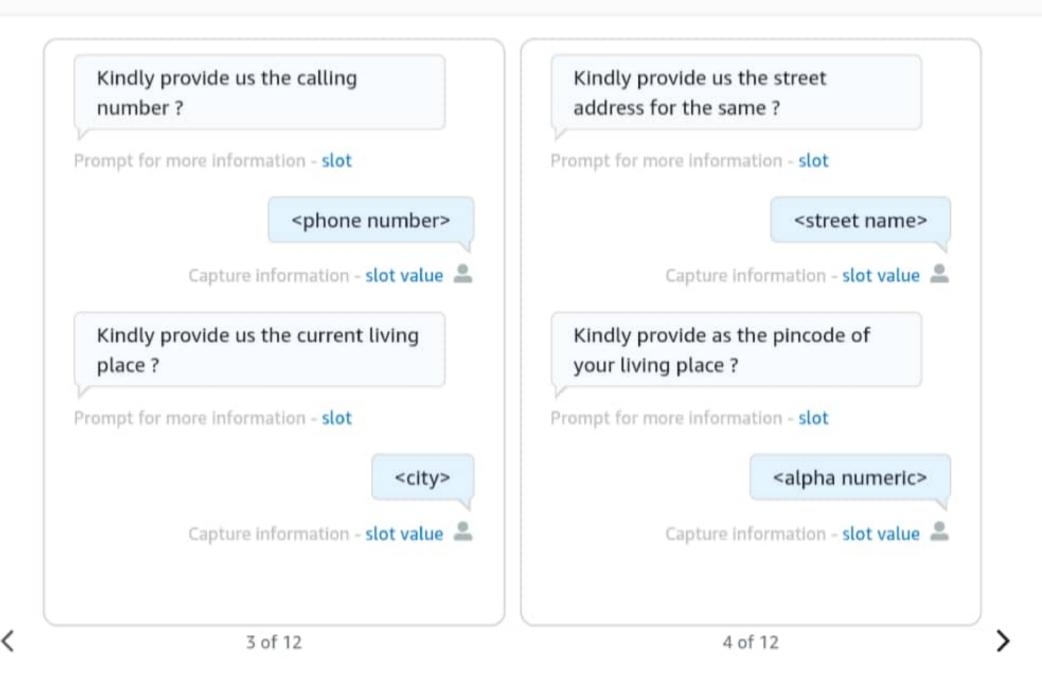
May I know your prefer time for delivery. {Name}?

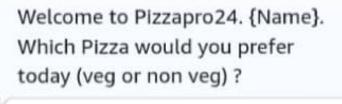


Conversation flow Info



Conversation flow Info





Prompt for more information - slot

Veg

Capture information - slot value 🚢



Kindly provide us the pizza which you want?

Prompt for more information - slot

Margherita pizza

Capture information - slot value 🏯



What topping would you like on your pizza (pepperoni, black olives, onions)?

Prompt for more information - slot

Pepperoni

Capture information - slot value 🏯



What size of a pizza would you like (small, medium, large)?

Prompt for more information - slot

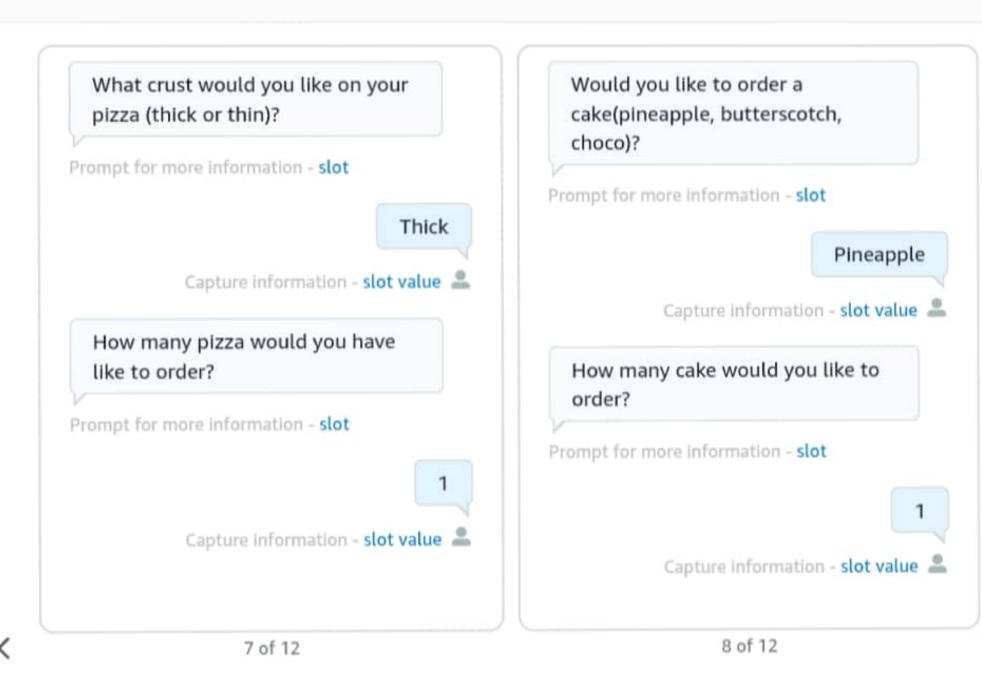
Small

Capture information - slot value 🚢

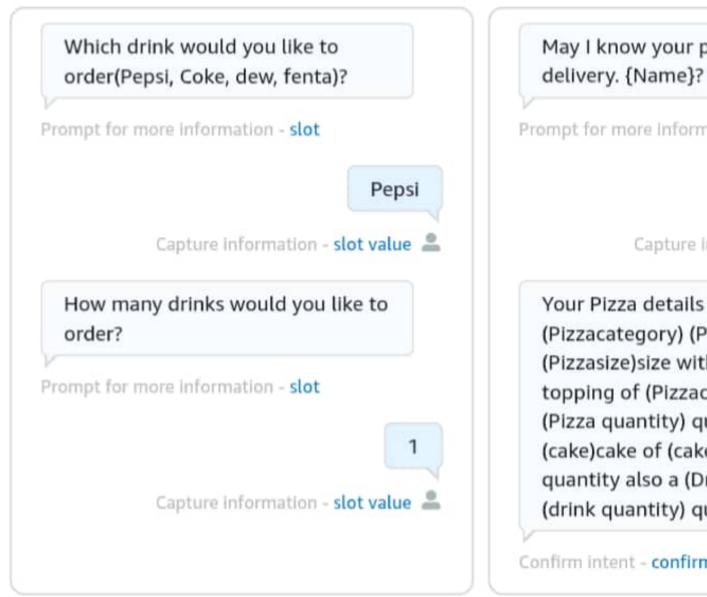


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Conversation flow Info



▼ Conversation flow Info



9 of 12

May I know your prefer time for delivery. {Name}? Prompt for more information - slot <time> Capture information - slot value Your Pizza details are: (Pizzacategory) (Pizzatype) (Pizzasize)size with (Pizzatopping) topping of (Pizzacrust) crust is (Pizza quantity) quantity and a (cake)cake of (cake quantity) quantity also a (Drinktype) of (drink quantity) quantity. Confirm intent - confirmation prompt

▼ Conversation flow Info

The process is completed, thank you

Provide fulfillment status - fulfillment updates

Your request completed successful.

Fulfillment completed successfully - success response

Sorry, something went wrong. We will get back to you.

Fulfillment failed to complete - failure response

Sorry, we are having issues with the process. We will get back to you.

Fulfillment timed out - timeout response

Thank you {Name}. Your order was confirmed and will be delivered by (Deliverytime).

Send final response - closing response

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