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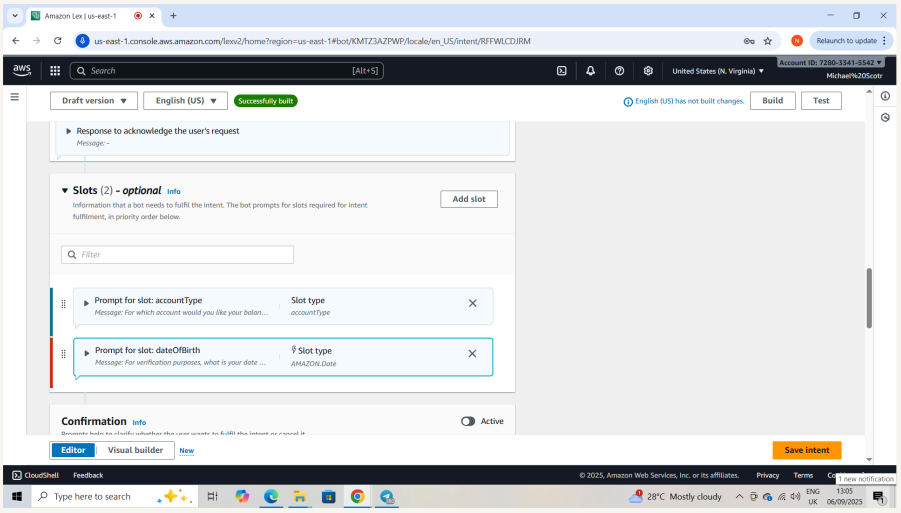
Add Custom Slots to a Lex Chatbot

Nchindo Boris



Nchindo Boris
NextWork Student

Introducing Today's Project!

In this project, I used Amazon Lex to set up an intent that helps your users check their account balance!

What is Amazon Lex?

Amazon Lex is a service for building chatbots and voice assistants using natural language understanding and speech recognition. It's useful because it simplifies bot development, handles scaling, integrates with AWS, and allows seamless interactions with users in real-time.

One thing I didn't expect in this project was...

One thing I didn't expect in this project was that a ChatBot is easily customizable.

This project took me...

This project took me 40 minutes to complete

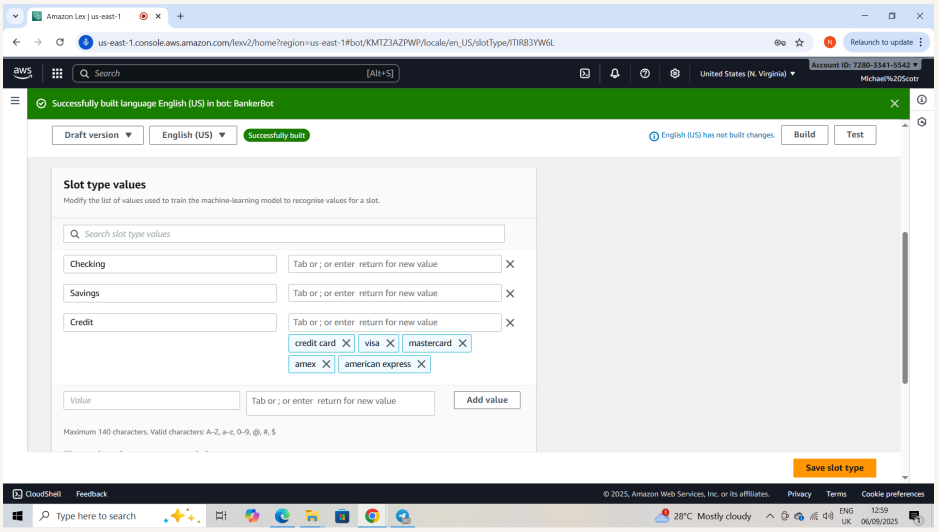
Nchindo Boris
NextWork Student

Slots

Slots are are pieces of information that a chatbot needs to complete a user's request. Think of them as blanks that need to be filled in a form. For example, if the intent is to book a table at a restaurant, the chatbot needs specific details like: restaurant name, date, time, number of people.

By adding custom slots in utterances, my chatbot's users follow Amazon Lex's prompts and enter an account type and birth date.

In this project, I created a custom slot type to fit specific needs for my chatbot like; types of bank accounts (checking or savings). Since Lex's built-in slot types don't cover this kind of info, I needed to define my own list so the bot knows what to expect when a user mentions their account type.

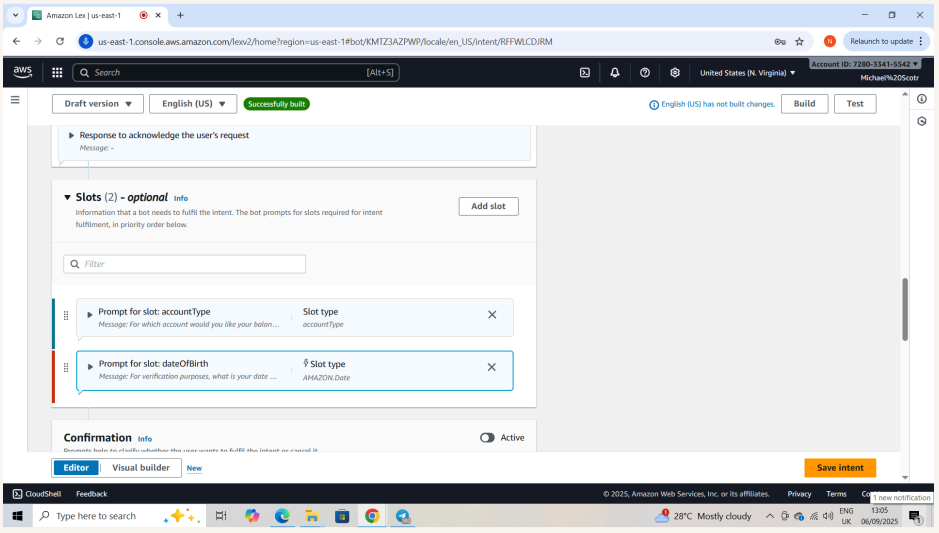

Amazon Lex | us-east-1
Successfully built language English (US) in bot: BankerBot
Draft version
English (US)
Successfully built
Build
Test
Slot type values
Modify the list of values used to train the machine-learning model to recognise values for a slot.
Search slot type values
Checking
Savings
Credit
Tab or ; or enter return for new value
credit card
visa
mastercard
amex
american express
Value
Add value
Maximum 140 characters. Valid characters: A-Z, a-z, 0-9, @, #, $
Save slot type
CloudShell
Feedback
Privacy
Terms
Cookie preferences
Type here to search
28°C Mostly cloudy

Nchindo Boris
NextWork Student

Connecting slots with intents

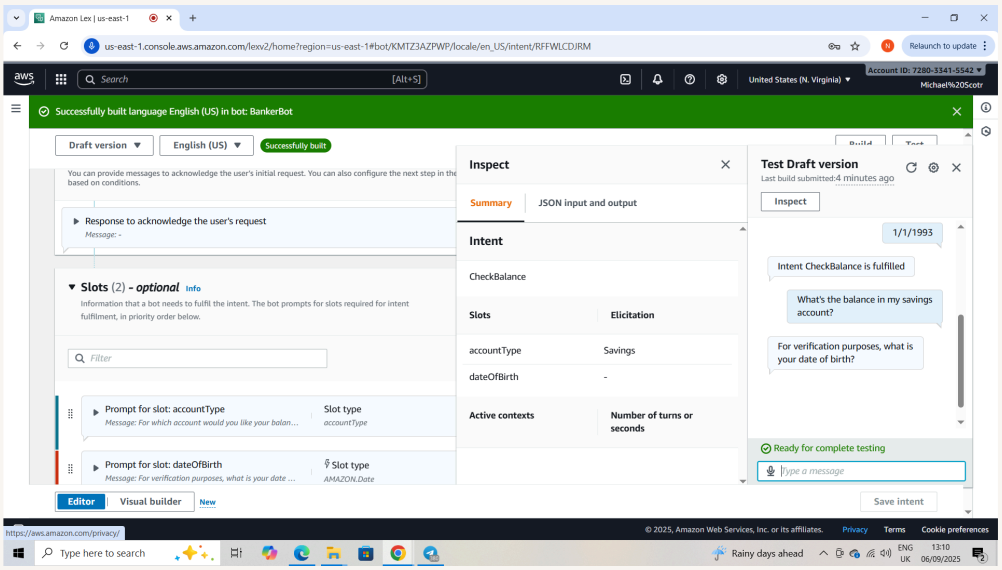
This slot type has restricted slot values, to make sure that only the values that I specify will count as a valid accountType! Otherwise, Amazon Lex might use machine learning to accept other values that it frequently encounters from users.

I associated my custom slot with CheckBalance, which is the intent that helps users check the balance of a specific bank account. By using the accountType slot, which I created and a built-in dateOfBirth slot, the bot can collect the necessary details to understand what account the user is asking about and verify their identity. This sets up the chatbot to eventually look up and return the user's actual account balance.



Slot values in utterances

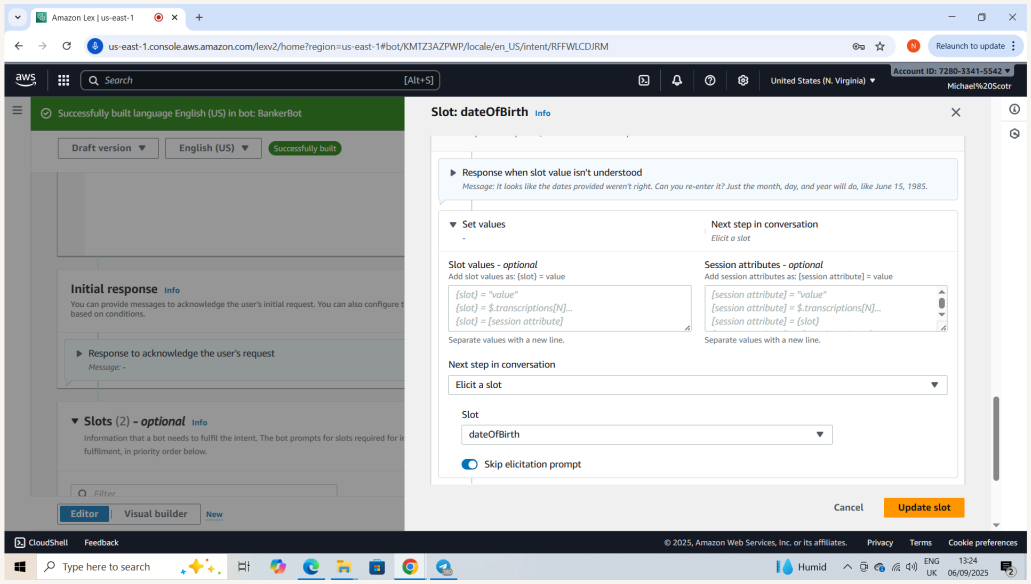
I included slot values in some of the utterances (i.e. user inputs) by using curly brackets {} to mark where the slot value should appear in the sentence. This tells Lex to listen for that specific type of information when the user speaks. For example, in the utterance “What’s the balance in my {accountType} account?”, Lex knows to look for a bank account type (like "Checking" or "Savings") and automatically fills the accountType slot if it finds a match.



Handling failures in slot values

I added variations for the dateOfBirth slot prompt, such as “Sorry, that wasn’t clear to me. What’s your date of birth?” and other messages I created myself. The messages play in order, so the end user will see the first prompt first, and if their response isn’t understood, the bot will follow up with the second message, then the third, guiding them gently to provide the correct information without sounding repetitive or random

I also used failure responses to guide users when they didn’t provide a valid date of birth. This helps the bot clearly explain what kind of input it's expecting and encourages users to try again. A default setting I changed was the one that sends users to the FallbackIntent after multiple failed attempts. Instead, I adjusted the settings so the bot stays in the CheckBalance intent and keeps asking for the correct information, making the conversation more consistent instead of going back to the FallbackIntent.


Amazon Lex | us-east-1
us-east-1.console.aws.amazon.com/lexv2/home?region=us-east-1#bot/KMTZ3AZPWP/locale/en_US/intent/RFFWLCDJRM
Relaunch to update
Search
[Alt+S]
United States (N. Virginia)
Account ID: 7280-3341-5542
Michael%20Scotr
Successfully built language English (US) in bot: BankerBot
Draft version
English (US)
Successfully built
Initial response Info
You can provide messages to acknowledge the user's initial request. You can also configure t
based on conditions.
Response to acknowledge the user's request
Message: -
Slots (2) - optional Info
Information that a bot needs to fulfil the intent. The bot prompts for slots required for ir
fulfilment, in priority order below.
Filter
Editor
Visual builder
New
Slot: dateOfBirth Info
Response when slot value isn't understood
Message: It looks like the dates provided weren't right. Can you re-enter it? Just the month, day, and year will do, like June 15, 1985.
Set values
-
Next step in conversation
Elicit a slot
Slot values - optional
Add slot values as: {slot} = value
{slot} = "value"
{slot} = $.transcriptions[N]...
{slot} = [session attribute]
Separate values with a new line.
Session attributes - optional
Add session attributes as: [session attribute] = value
[session attribute] = "value"
[session attribute] = $.transcriptions[N]...
[session attribute] = {slot}
Separate values with a new line.
Next step in conversation
Elicit a slot
Slot
dateOfBirth
Skip elicitation prompt
Cancel
Update slot
CloudShell
Feedback
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Privacy
Terms
Cookie preferences
Type here to search
Humid
ENG
UK
13:24
06/09/2025

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