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Add Custom Slots to a Lex Chatbot



VE

vedikagangil@gmail.com

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Inspect

check my balance

For which account would you like your balance?

amex

For verification purposes, what is your date of birth?

12/12/1992

Thank you. The balance on your Credit account is \$114.59 dollars.

Introducing Today's Project!

In today's project, I used Amazon Lex to: 1. Build a banking chatbot with intents like CheckBalance and TransferFunds. 2. Train slots to extract user inputs. 3. Test conversations in the Lex console before deploying to a web demo.

What is Amazon Lex?

Amazon Lex is an AWS service for building conversational AI chatbots using voice/text. It's useful because it has a pre-built NLP which understands intents/slots and it is highly scalable.

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

Lex occasionally misclassified niche slot values despite training. I refined the slot samples and added synonyms to improve accuracy highlighting how real-world phrasing can diverge from training data.

This project took me...

This project took me around 60 minutes.

Slots

Slots are pieces of information that a chatbot needs to complete a user's request. Like 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.

Custom slots means my users can speak freely with natural conversations, the chatbot can correctly extract niche terms with accuracy and can have fewer errors.

I set up a custom slot type to handle specific, dynamic inputs that standard slots couldn't cover. It improved accuracy by training Lex to recognize niche vocabulary and extract structured data from user phrases.

VE

vedikagangil@gmail.com

NextWork Student

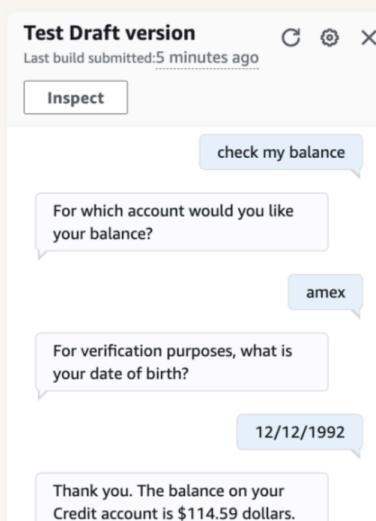
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The screenshot shows the 'Slot type values' configuration page in the Amazon Lex console. The slot type is 'accountType'. The page displays a list of values: 'Checking', 'Savings', and 'Credit'. Under 'Credit', there are sub-values: 'credit card', 'visa', 'mastercard', 'amex', and 'american express'. A search bar at the top right is empty. A note at the bottom left says 'Maximum 140 characters. Valid characters: A-Z, a-z, 0-9, @, #, \$'. A checkbox 'Use slot values as custom vocabulary' is checked. A 'Save Slot type' button is located at the bottom right.

Connecting slots with intents

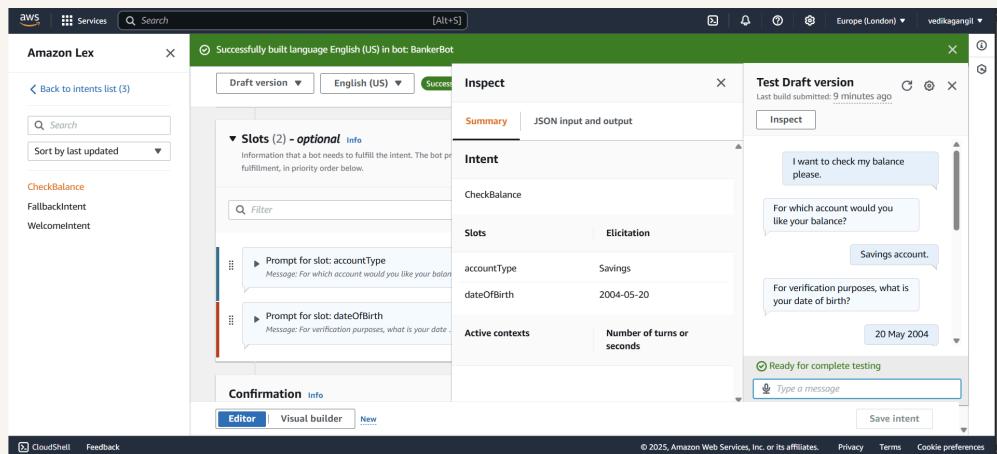
The Restrict to slot values setting forces Lex to only accept inputs that exactly match your predefined slot options. If enabled, deviations trigger a reprompt; if disabled, Lex accepts unrecognized values and passes them for validation elsewhere.

The CheckBalance intent handles user requests to view account balances (e.g., "What's my savings balance?"). It triggers on certain phrases, it extracts account types and it fulfills by calling backend services.



Slot values in utterances

I included slot values in CheckBalance's utterances by embedding the slot name (e.g., {AccountType}) in sample phrases like: 1. "What's my {AccountType} balance?" 2. "Show {AccountType} funds."





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