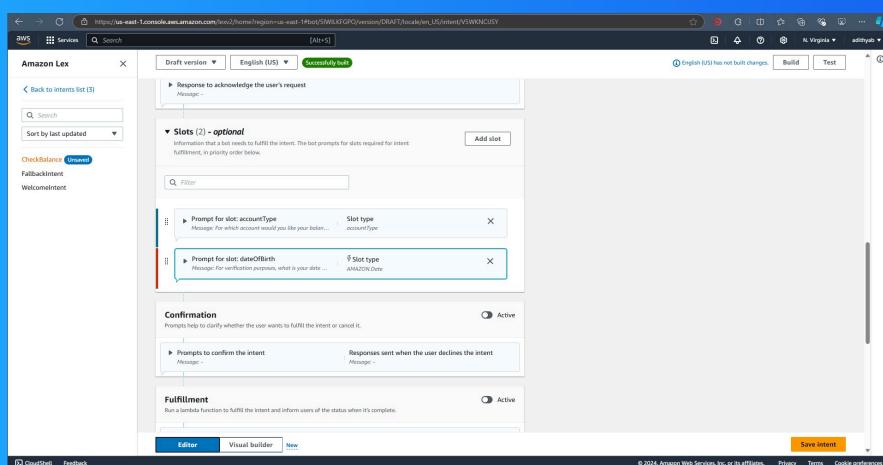




Build a Chatbot with Custom Slots



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Introducing Today's Project!

What is Amazon Lex?

Amazon Lex is a service for building conversational interfaces using voice and text. It's useful because it integrates with AWS, scales automatically, and leverages advanced natural language understanding (NLU) to create responsive, natural chatbots.

How I used Amazon Lex in this project

I used Amazon Lex to create a banker bot in 10 minutes. I configured intents like WelcomeIntent and FallbackIntent, created custom slots for specific inputs, and added response variations for a natural user experience. Total time was around 30 minute

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

One thing I didn't expect in this project was how quickly and smoothly Amazon Lex could be set up and customized, allowing me to create a fully functional banker bot with minimal effort.

This project took me...

This project took me about 30 minutes in total. This included setting up Amazon Lex, configuring intents, creating custom slots, and testing the banker bot.



Slots

Slots are data fields within an intent that capture specific pieces of information from the user's input. For example, in a banking bot, slots could capture details like account number, transaction date, or amount.

In this project, I created a custom slot type to capture and validate specific user inputs, such as account types or transaction categories, ensuring accurate and relevant responses from the banker bot.

This slot type has restricted slot values, which means the user can only provide inputs that match predefined values, ensuring data consistency and reducing errors.

The screenshot shows the AWS Lambda console interface for managing a Lex slot type. The slot type is named "accountType" and is currently unsaved. It contains four slot type values: "Checkings", "Savings", "Credit", and three card types: "Visa", "mastercard", and "american express". Each value has a corresponding "Return for new value" field next to it. There is also a "Save Slot type" button at the bottom right.



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Connecting slots with intents

I associated my custom slot with CheckBalance, which allows the banker bot to prompt users for specific account types and ensures accurate retrieval of balance information based on the provided input.

The screenshot shows the Amazon Lex Intent Builder interface for the 'CheckBalance' intent. The interface is divided into several sections:

- Message:** A text input field containing the message "Response to acknowledge the user's request".
- Slots (2) - optional:** A section for defining slots required for intent fulfillment. It contains two entries:
 - accountType:** A slot type defined as "account type".
 - dateOfBirth:** A slot type defined as "AMAZON.Date".
- Confirmation:** A section for prompting the user to confirm the intent. It includes a message template: "Prompts to confirm the intent" and "Responses sent when the user declines the intent".
- Fulfillment:** A section for running a lambda function to fulfill the intent. It includes a message template: "Run a lambda function to fulfill the intent and inform users of the status when it's complete".

At the bottom right, there is a "Save intent" button.



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Slot values in utterances

I included slot values in some of the utterances (i.e., user inputs) by providing sample phrases that incorporate these values. For example, users can say, "Check my savings account balance" or "What's the balance in my checking account?"

By adding custom slots in utterances, the chatbot can better understand and process specific user requests, leading to more accurate and contextually relevant responses.

The screenshot shows the Amazon Lex console interface. On the left, there's a sidebar with intents: CheckBalance, FallbackIntent, and WelcomeIntent. The main area is focused on the 'CheckBalance' intent. It shows sections for 'Fulfillment' (with options for 'On successful fulfillment' and 'In case of failure'), 'Closing response' (with options for 'Response sent to the user after the intent is fulfilled' and 'Set values'), and 'Code hooks - optional' (with a checkbox for 'Use a Lambda function for initialization and validation'). To the right, there's an 'Inspect' panel showing 'Summary' and 'JSON input and output' for the 'CheckBalance' intent. Below it, an 'Intent' panel shows details like 'accountType: Credit', 'dateOfBirth: 1993-03-03', and 'Active contexts: Number of turns or seconds'. A large window on the right displays a test transcript:

```
I want to check my balance please
For which account would you like your balance?
credit
For verification purposes, what is your date of birth?
03/03/1993
Intent CheckBalance is fulfilled
```

At the bottom, there are tabs for 'Editor', 'Visual builder', and 'New', along with a 'Save Intent' button. The URL in the browser is https://us-east-1.console.aws.amazon.com/lexv2/home?region=us-east-1#bot/5WILKFGO/version/DRAFT/locale/en_US/intent/VSWKNCJ5Y



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