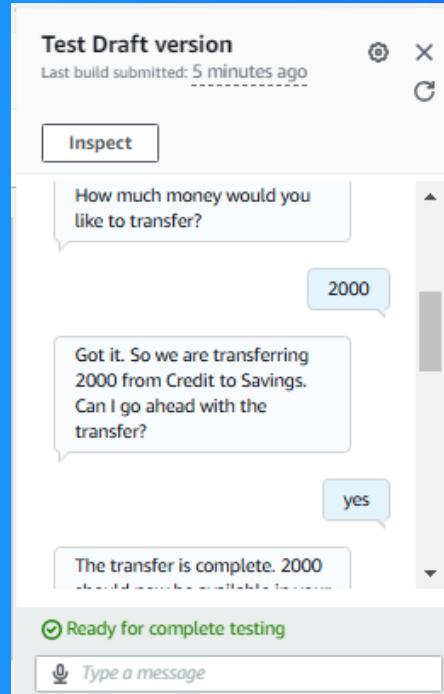




Build a Chatbot with Multiple Slots

G Gloria





Introducing Today's Project!

What is Amazon Lex?

Amazon Lex is a powerful AWS service that lets you build smart chatbots and conversational interfaces with ease. It uses AI to understand user intent, supports voice and text interactions, and simplifies creating intelligent communication tools

How I used Amazon Lex in this project

I used Amazon Lex and CloudFormation to deploy an intelligent chatbot. CloudFormation automated resource setup, including the Lex bot with intents like `CheckBalance` and `TransferFunds`, slots for input collection, and Lambda for fulfillment.

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

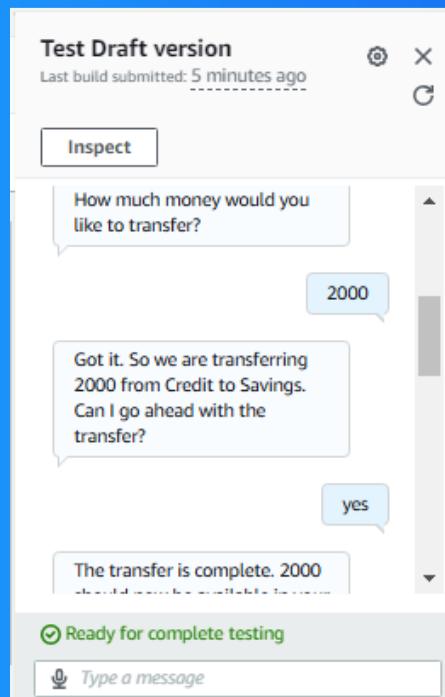
One thing I didn't expect in this project was how seamlessly CloudFormation automated deploying Lex bots, Lambda functions, and IAM roles. However, I faced issues with IAM permissions, which caused errors and required troubleshooting to resolve them

This project took me...

This project took me 60 minutes to complete. Using CloudFormation and Amazon Lex streamlined the process significantly, allowing me to deploy resources like the Lex bot, Lambda functions, and IAM roles efficiently within the timeframe.

TransferFunds

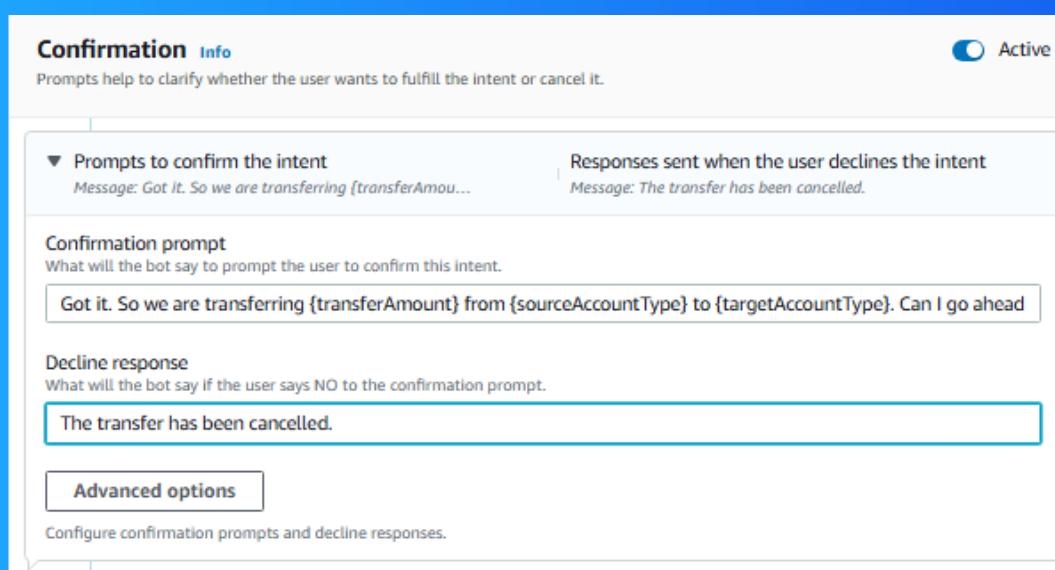
An intent I created for my chatbot was TransferFunds, which facilitates secure money transfers by recognizing queries about amounts, source/destination accounts, and recipients. It validates inputs, confirms details, and ensures seamless transactions



Using multiple slots

For this intent, I had to use the same slot type twice. This is because the intent required inputs for both the source and destination accounts, which share the same data structure.

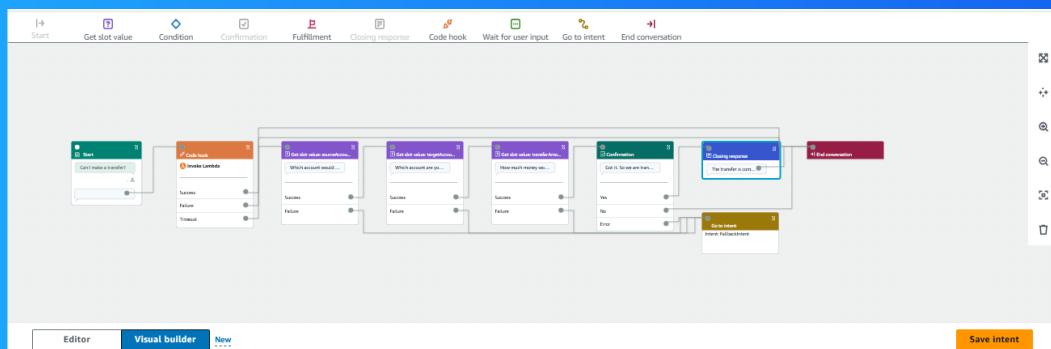
I also learnt how to create confirmation prompts, which are questions or statements designed to verify a user's intent before finalizing an action. They ensure accuracy by asking for confirmation, like "Can I go ahead with the transfer?"



Exploring Lex features

Lex also has a special conversation flow feature that visually maps chatbot interactions, showing how intents, slots, prompts, and confirmations connect. It helps design, test, and refine user experiences, ensuring smooth conversations.

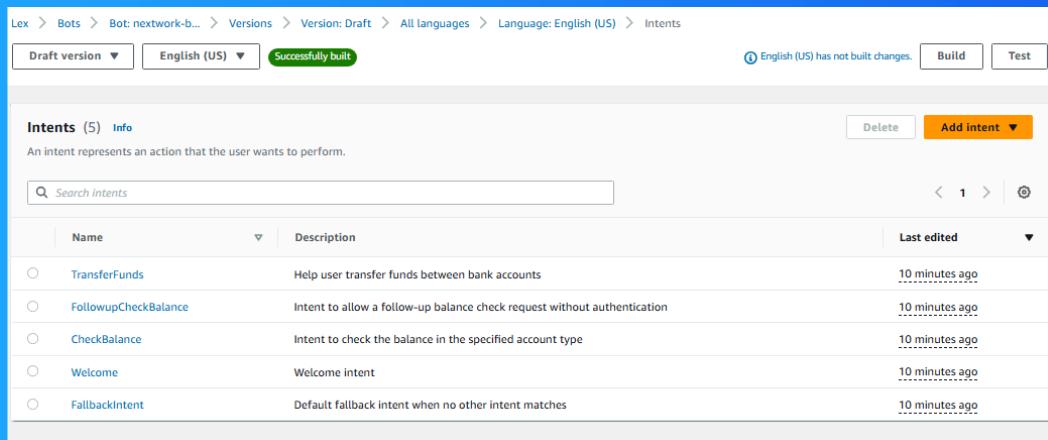
You could also set up your intent using a visual builder! A visual builder simplifies chatbot design by providing a drag-and-drop interface to define intents, slots, prompts, and conversation flows. It makes the process intuitive and easy to manage.



AWS CloudFormation

AWS CloudFormation is a service that simplifies the process of managing AWS resources by enabling you to define your infrastructure as code. Using templates written in JSON or YAML, you can create, update, or delete entire stacks of resources.

I used CloudFormation to automate deploying the project's infrastructure, including defining the Lex bot, its intents, Lambda functions, and IAM roles. This streamlined resource creation and ensured consistency.



The final result!

Re-building my bot with CloudFormation took me 10 minutes after defining the template. The automation streamlined the setup of resources like the Lex bot, intents, Lambda functions, and IAM roles, significantly reducing manual effort.

There was an error after I deployed my bot! The issue was incorrect IAM permissions, preventing the Lex bot from invoking the Lambda function. I fixed this by updating the Lambda policy.

The screenshot shows the AWS Lambda policy configuration page. At the top, there are three radio button options: 'AWS account' (disabled), 'AWS service' (selected), and 'Function URL'. Below this, the 'Service' field is set to 'Other' (dropdown). The 'Statement ID' field contains 'my-custom-permission-newalias'. The 'Principal' field is set to 'lexv2.amazonaws.com'. The 'Source ARN' field contains 'arn:aws:lex:us-east-1:123456789012:bot:alias/*'. The 'Action' field is set to 'lambda:InvokeFunction'. The entire form is set against a large blue rectangular background.



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