

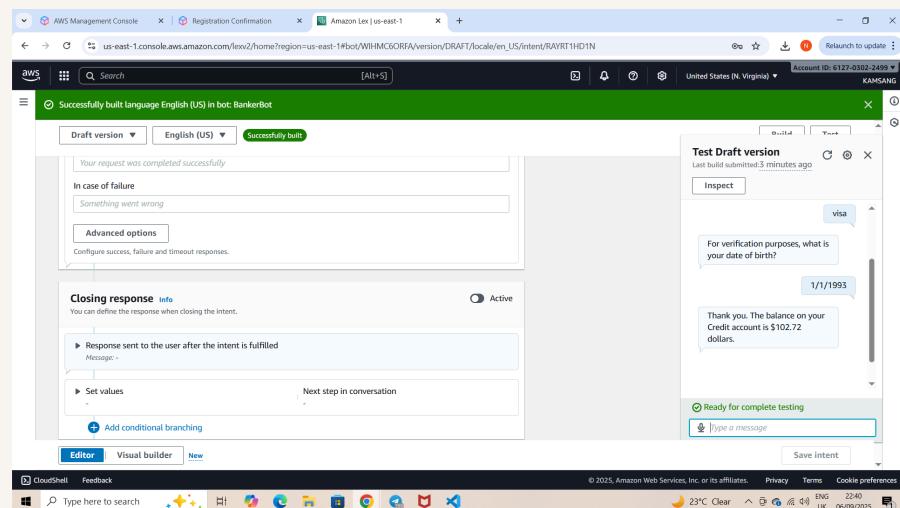


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# Connect Amazon Lex with Lambda



Nchindo Boris



# Introducing Today's Project!

## 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

## How I used Amazon Lex in this project

In today's project, I used Amazon Lex to return a random bank balance using a chatbot

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

One thing I didn't expect in this project was how easy it was to connect the chatbot with backend code using Lambda and have it respond with dynamic, random data like bank balances. It made the bot feel way more real than I thought it would!

## This project took me...

This project took me 45 minutes to complete

# AWS Lambda Functions

AWS Lambda is a service that lets you run code without having to manage servers

In this project, I created a Lambda function to generate a bank balance whenever a user asks for it through the chatbot

The screenshot shows the AWS Management Console interface for the Lambda service. The top navigation bar includes tabs for 'Info' and 'Tutorials'. The main content area displays the code for a Lambda function named 'lambda\_function.py'.

```
1  """
2      How does AWS Lambda cheer up Amazon Lex? By saying, "Don't worry, I've got your back(end)!"
3
4      - NextWork :)
5
6  import json
7  import random
8  import decimal
9
10 def random_num():
11     return(decimal.Decimal(random.randrange(1000, 50000))/100)
12
13 def get_slots(intent_request):
14     return intent_request['sessionState']['intent']['slots']
15
16 def get_slot(intent_request, slotName):
17     slots = get_slots(intent_request)
18     if slots is not None and slotName in slots and slots[slotName] is not None:
19         return slots[slotName]['value']['interpretedValue']
20     else:
21         return None
22
23 def get_session_attributes(intent_request):
24     sessionState = intent_request['sessionState']
25     if 'sessionAttributes' in sessionState:
26         return sessionState['sessionAttributes']
27
```

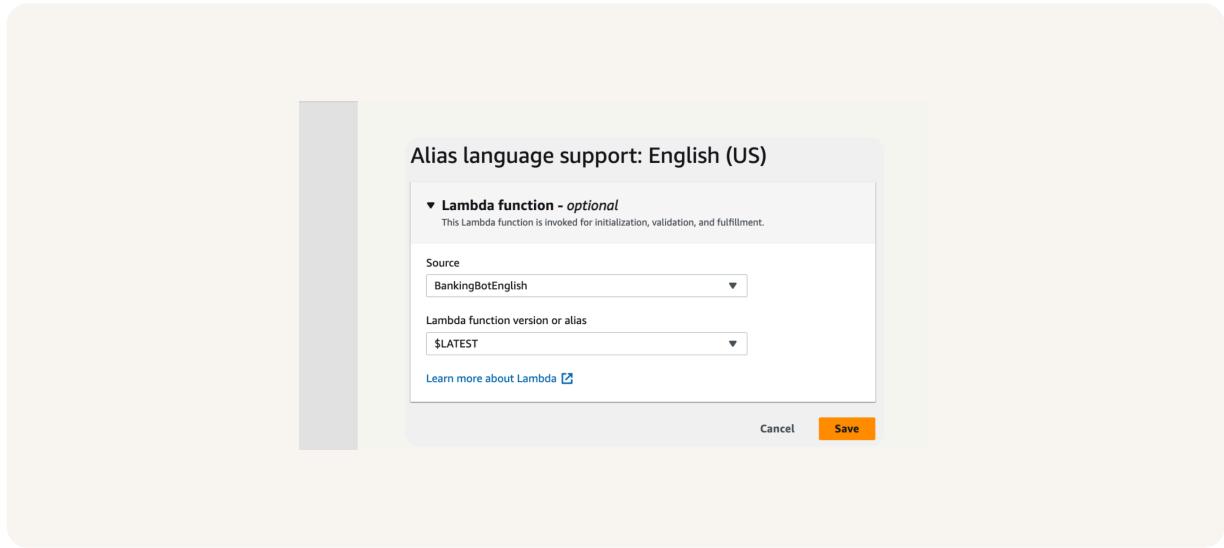
The code implements several functions: `random_num()`, `get_slots()`, `get_slot()`, and `get_session_attributes()`. It uses the `decimal` module for generating random numbers, `json` for parsing JSON, and `random` for generating random integers between 1000 and 50000. The `get_slot` function retrieves a specific slot value from the intent request's session state. The `get_session_attributes` function retrieves the session attributes from the intent request's session state.

# Chatbot Alias

An alias is a pointer for a specific version of a bot. So when connecting Lex with other AWS services or custom applications, those external resources will connect to an alias, which will point to the specific version of the bot that is to be used.

TestBotAlias is a default version of a bot that's made for testing or development. This is the playground version of a bot that is used to make sure everything works smoothly before rolling out changes!

To connect Lambda with my BankerBot, I visited my bot's TestBotAlias and opened the settings for the CheckBalance intent. From there, I enabled the Lambda code hook and selected my Lambda function, making sure the version was set to \$LATEST. This setup allows Lex to trigger the Lambda function whenever a user asks to check their balance.

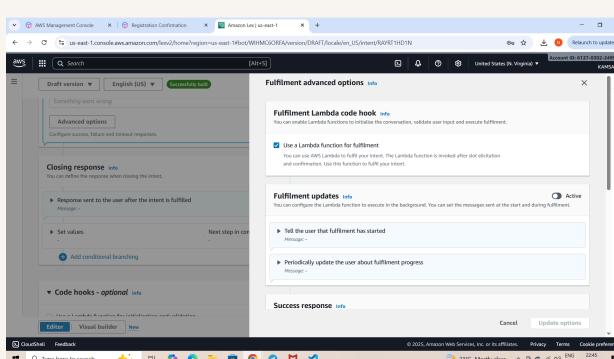


# Code Hooks

A code hook is a way to connect your Lex chatbot to a Lambda function, allowing it to run custom code during a conversation.

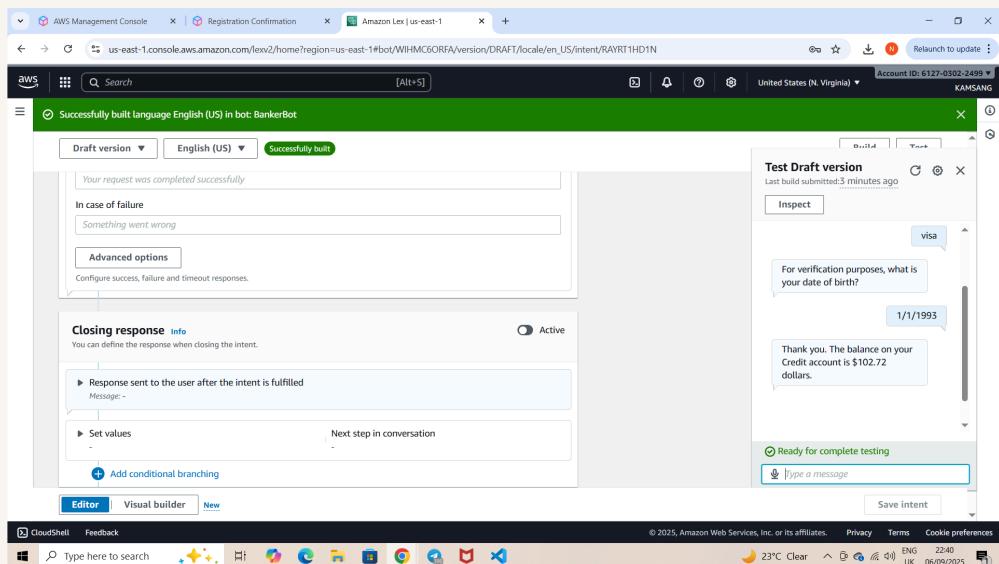
Even though I already connected my Lambda function with my chatbot's alias, I had to use code hooks because that's how I instruct Lex exactly when to run the Lambda function during a conversation.

I could find code hooks at the bottom of the CheckBalance intent, under the Fulfilment section in the advanced settings. That's where I enabled the option to use a Lambda function for fulfilment and selected my function to run when the intent is complete.



# The final result!

I've set up my chatbot to trigger Lambda and return a random dollar figure when a user activates the CheckBalance intent by asking for the balance of a specific account type and providing their birthday. Once Lex has that information, it uses the Lambda function during fulfilment to generate and return the balance amount.





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