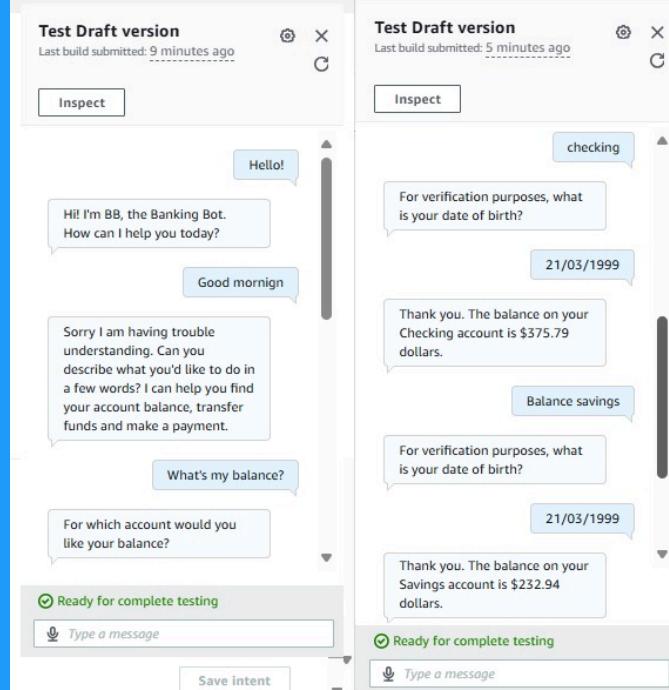




# Connect a Chatbot with Lambda



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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 enables chatbots to understand and respond to natural language, making it useful for automating interactions like customer service and other user queries."

## How I used Amazon Lex in this project

In today's step, I used Amazon Lex to handle user requests for account balances and connected it to AWS Lambda to return a random balance. Lex processed the input and triggered Lambda to fulfill the request, making the chatbot more dynamic.

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

One thing I didn't expect in this project was how seamless the integration between Amazon Lex and AWS Lambda would be. It was surprising how quickly I could set up a code hook to retrieve and display a random balance through the chatbot.

## This project took me...

This project took me about an hour to complete, including setting up the Lambda function, connecting it with Amazon Lex, configuring the code hooks, and testing the chatbot's ability to return random bank balance figures.



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# AWS Lambda Functions

AWS Lambda is a serverless compute service that automatically runs code in response to events. It scales automatically, eliminating the need to manage servers. Lambda is ideal for running backend services, including API requests and data processing.

In this project, I created a Lambda function to simulate retrieving a user's account balance. The function generates a random balance number and sends it to Amazon Lex, which then delivers the balance information to the user through the chatbot.

The screenshot shows the AWS Lambda function editor interface. The tab 'Code source' is selected. The code editor displays the following Python script:

```
Code source Info
File Edit Find View Go Tools Window Test Deploy Changes not deployed
lambda_function Environment Var X
Go to Anything (Ctrl+P)
Environment BankingBotEnglish lambda_function.py
1 import json
2 import random
3 import decimal
4
5 def random_num():
6     return decimal.Decimal(random.randrange(1000, 50000))/100
7
8 def get_slots(intent_request):
9     return intent_request['sessionState']['intent']['slots']
10
11 def get_slot(intent_request, slotName):
12     slots = get_slots(intent_request)
13     if slots is not None and slotName in slots and slots[slotName] is not None:
14         return slots[slotName]['value']['interpretedValue']
15     else:
16         return None
17
18 def get_session_attributes(intent_request):
19     sessionState = intent_request['sessionState']
20     if 'sessionAttributes' in sessionState:
21         return sessionState['sessionAttributes']
22     else:
23         return {}
24
25 def elicit_intent(intent_request, session_attributes, message):
26     return {
27         'sessionState': {
28             'dialogAction': {
29                 'type': 'EllicitIntent'
30             },
31             'sessionAttributes': session_attributes
32         },
33         'messages': [ message ] if message != None else None,
34         'requestAttributes': intent_request['requestAttributes'] if 'requestAttributes' in intent_request else None
35     }
36
37 def close(intent_request, session_attributes, fulfillment_state, message):
38     return {
39         'sessionState': {
40             'dialogAction': {
41                 'type': 'Close'
42             },
43             'sessionAttributes': session_attributes
44         },
45         'messages': [ message ] if message != None else None,
46         'fulfillmentState': fulfillment_state
47     }
```



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# Chatbot Alias

An alias is a pointer to a specific version of a bot in Amazon Lex. It allows developers to manage different stages of a bot, like development or production, without affecting other versions.

TestBotAlias is an alias created for the purpose of testing the chatbot. It allows the bot to invoke the latest configurations and Lambda integrations while undergoing tests without affecting the main bot.

To connect Lambda with my BankerBot, I visited my bot's TestBotAlias and selected the Lambda function 'BankingBotEnglish,' ensuring that the function is invoked for initialization, validation, and fulfillment.

Alias language support: English (US)

▼ Lambda function - *optional*  
The Lambda function is invoked for initialization, validation, and fulfillment.

Source: BankingBotEnglish

Lambda function version or alias: \$LATEST

[Learn more about Lambda](#)

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# Code Hooks

A code hook is a function triggered during an intent's fulfillment process. It allows custom code (like a Lambda function) to be executed based on the user's input.

Even though I already connected my Lambda function with my chatbot's alias, I had to use code hooks because they allow the bot to execute specific code, like retrieving a random bank balance, during the intent's fulfillment.

I could find code hooks at the fulfillment panel of the CheckBalance intent, under Advanced options, where I linked my Lambda function to run on successful intent fulfillment.

The screenshot shows a modal dialog titled "Fulfillment Lambda code hook" with an "Info" link. A note states: "You can enable Lambda functions to initialize the conversation, validate user input, and execute fulfillment." Below this, a checkbox labeled "Use a Lambda function for fulfillment" is checked. A tooltip explains: "You can use AWS Lambda to fulfill your intent. The Lambda function is invoked after slot elicitation and confirmation. Use this function to fulfill your intent."

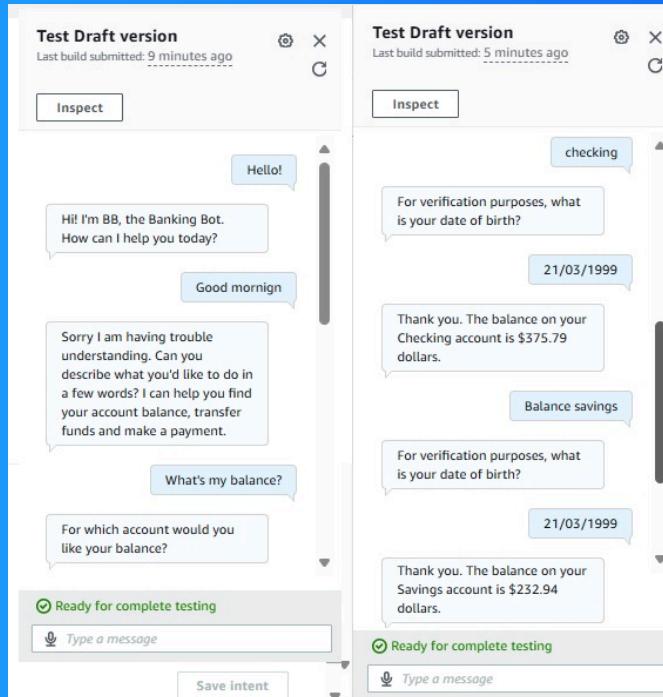


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# The final result!

I've set up my chatbot to trigger Lambda and return a random dollar figure when the user asks for their account balance. The Lambda function simulates this by generating a random amount for each request.





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