

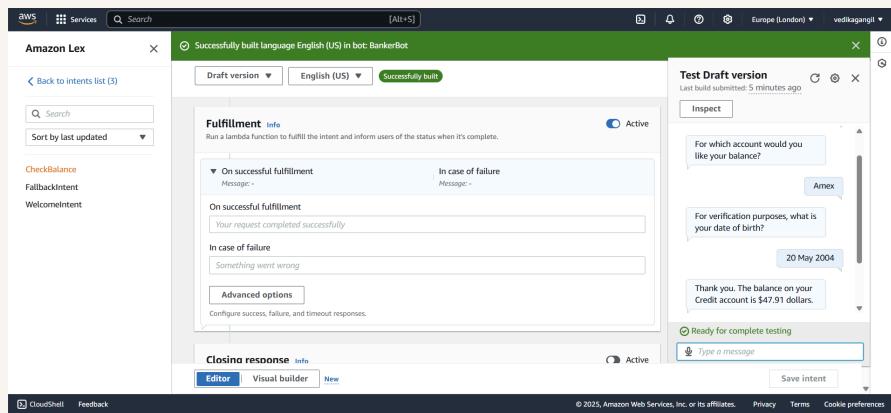


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Connect Amazon Lex with Lambda



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Introducing Today's Project!

What is Amazon Lex?

Amazon Lex is an AWS service for building conversational AI chatbots using voice/text. It's useful because it has pre built NLP to understand intents and slots and it is also very highly scalable.

How I used Amazon Lex in this project

In today's project, I used Amazon Lex to build a banking chatbot with intents like CheckBalance and TransferFunds. I also trained slots to extract user inputs. Furthermore I tested conversations in the Lex console.

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

One thing I didn't expect in this project was how easy and quick the entire process was especially since I had already created the bot beforehand.

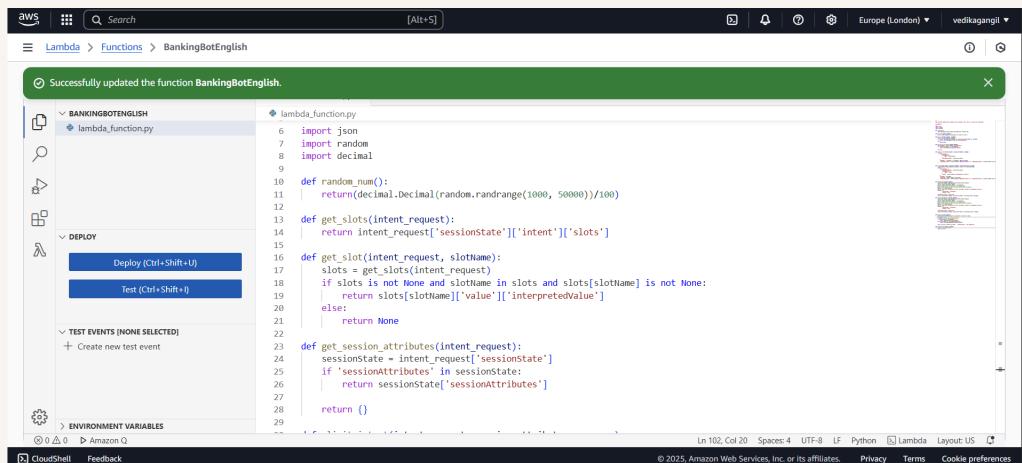
This project took me...

This project took me around 1 hour.

AWS Lambda Functions

AWS Lambda is a service that lets you run code in the cloud without needing to manage any computers/servers. Lambda will manage them for you. Lambda runs your code only when needed and scales automatically.

In this project I created a AWS Lambda, to generate a random number on the fly. Here Lex is the interface that the user sees and chats with, while Lambda is the calculator that's out of sight but works in the background.



The screenshot shows the AWS Lambda function editor for a function named 'BankingBotEnglish'. The left sidebar shows a file tree with 'lambda_function.py' selected. The main area displays the Python code:

```
 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
28
29 return {}
```

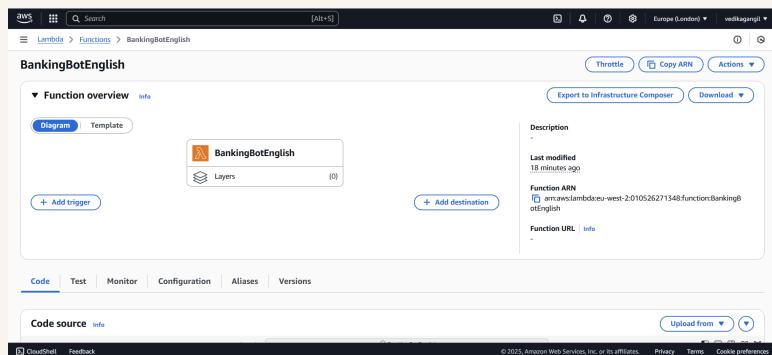
The status bar at the bottom indicates 'Ln 102, Col 20' and other details like 'Spaces: 4', 'UTF-8', 'LF', 'Python', 'Lambda', 'Layout: US', and copyright information from 2025.

Chatbot Alias

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

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

To connect my Lex bot to Lambda using TestBotAlias, I created a Lambda function. In Lex, opened the bot → Aliases → TestBotAlias → Linked the Lambda ARN under Fulfillment

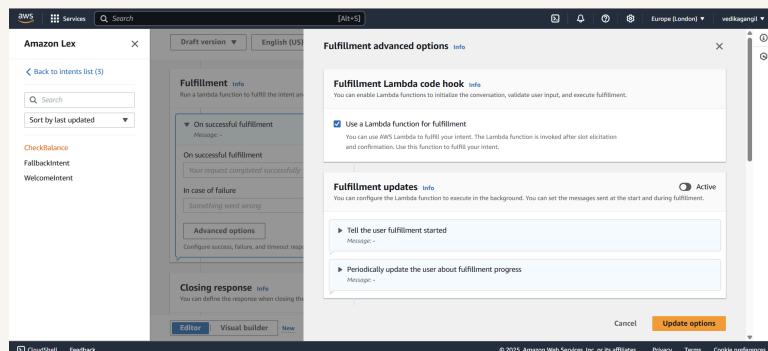


Code Hooks

A code hook is a Lambda function triggered during Lex's conversation flow to add custom logic. It runs at two key stages: 1. Validation: Verifies/modifies slot values 2. Fulfilment: Generates dynamic responses

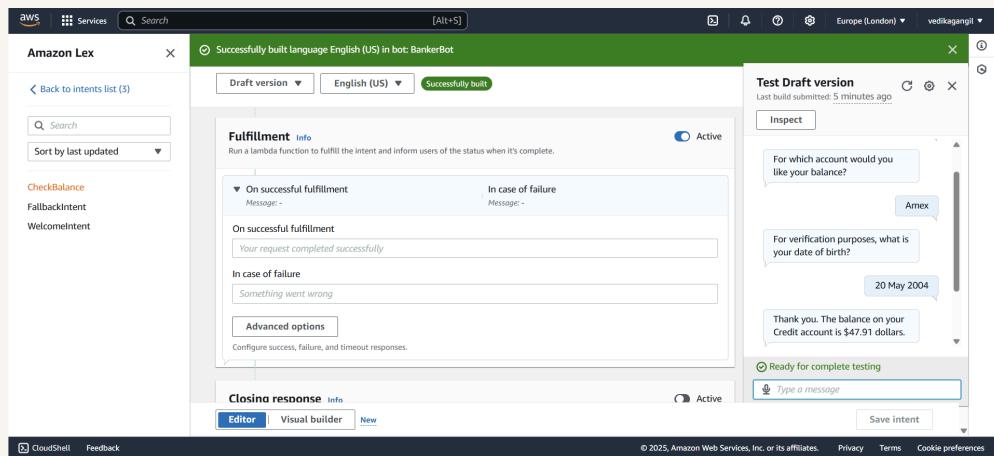
I used a code hook to validate slots dynamically and to fetch real-time data (e.g., Lambda checks DynamoDB for balances). Without it, Lex would only use static rules with no flexibility for edge cases or live data.

I configured code hook at Intent-Level (Validation/Fulfillment) to add a Lambda ARN to the CheckBalance intent to validate slots. This was done to ensures dynamic check before fulfillment.



The final result!

I've set up my chatbot to trigger Lambda and return a random dollar figure when my Intent is matched using triggers. It will make sure that the slots are filled and the backend fetches the balance and formats the response.





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