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Build a Chatbot with Multiple Slots

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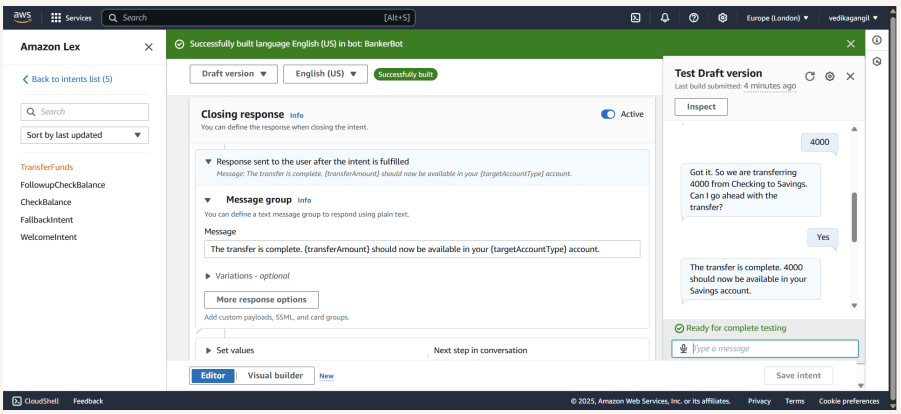

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Introducing Today's Project!

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 understands intents/slots and it is highly scalable since it handles millions of interactions with AWS.

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 used CloudFormation service to automatically deploy the same chatbot in seconds.

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

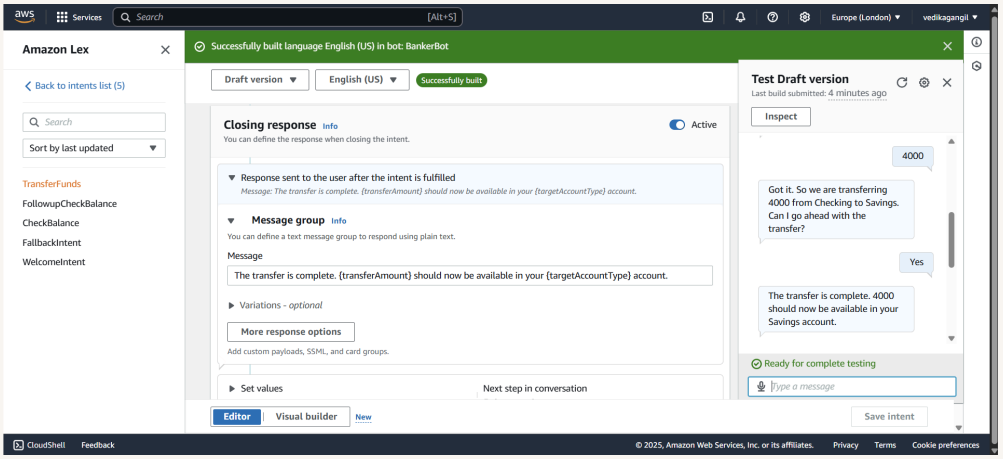
One unexpected challenge was how much real-world ambiguity affects even well-trained chatbots. Despite careful slot and intent setup, users phrased requests in unpredictable ways equiring constant tweaks to training data and fallback handling.

This project took me...

This project took me almost 60 to 70 minutes to make.

TransferFunds

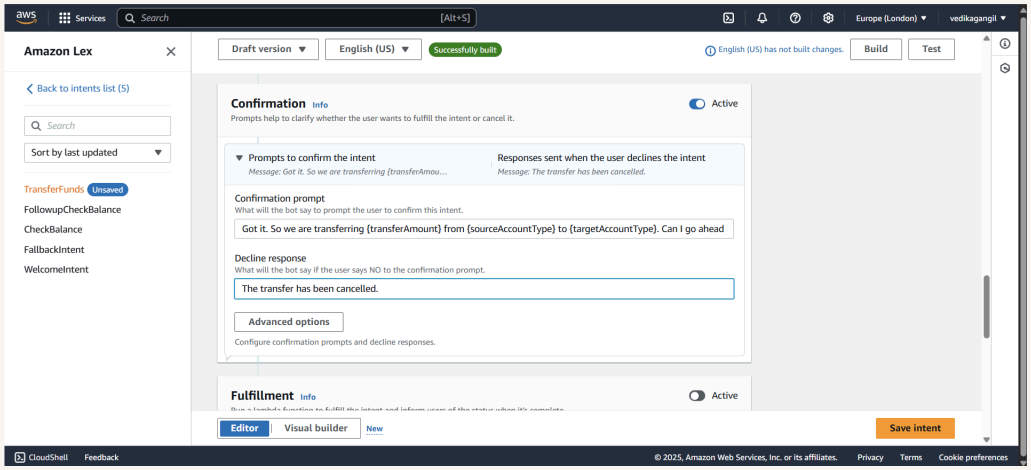
TransferFunds handles money movement requests. It extracts slots, amount, recipient, FromAccount, validates via Lambda and confirms("Transferring $100 from checking to Mom. Confirm?").



Using multiple slots

I reused the same slot type (e.g., AccountType) across multiple intents (CheckBalance and TransferFunds) to maintain consistency, reduce training effort and to simplify validation. This ensures uniformity but may need slot-specific tweaks.

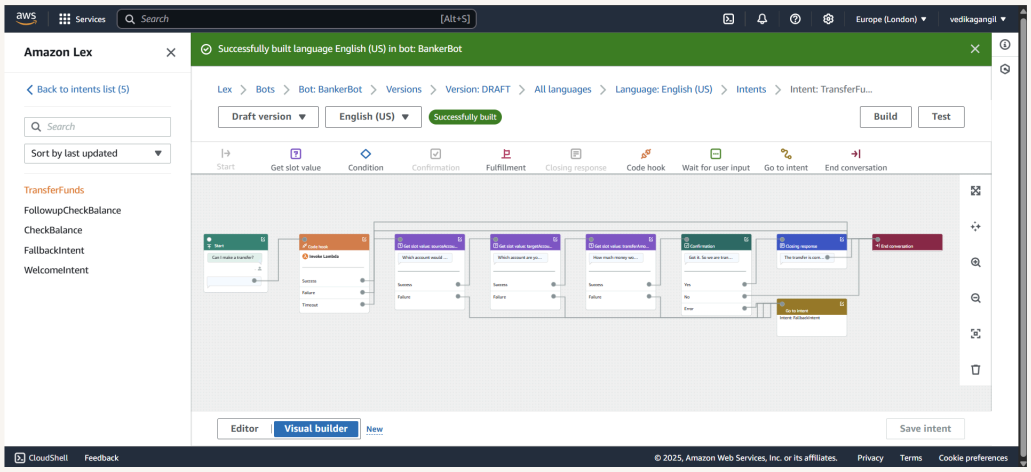
Confirmation prompts ensure user intent is clear before executing critical actions (e.g., transfers). They: Repeat the request (e.g., "Transfer $100 to Mom?"). Await explicit "Yes/No" (or synonyms). Proceed or cancel based on response (via Lambda)



Exploring Lex features

The conversation flow feature in Lex orchestrates multi-step dialogs by chaining intents, managing context and handling branches. It creates natural, stateful interactions (e.g., "Send $100" → "From which account?" → "Confirm?").

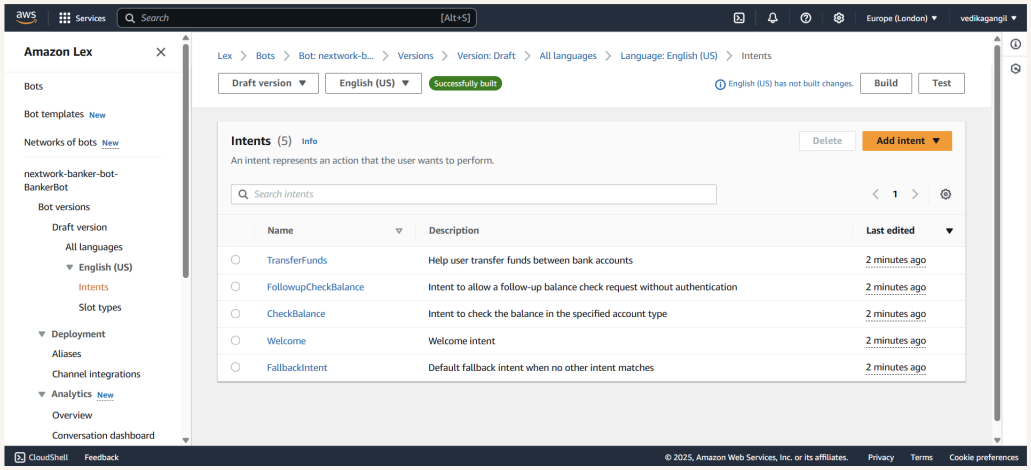
The visual builder in Amazon Lex lets a user design chatbots without coding by dragging-and-dropping Intents/Slots, auto-generating dialog flow and testing instantly. This speeds up prototyping since no Lambda/API setup is needed for basic bots.



AWS CloudFormation

AWS CloudFormation is a service that gives you an easy way to create and set up AWS resources. It's an infrastructure as code service - meaning you will use a file that describes all the resources you want to create and their dependencies as code.

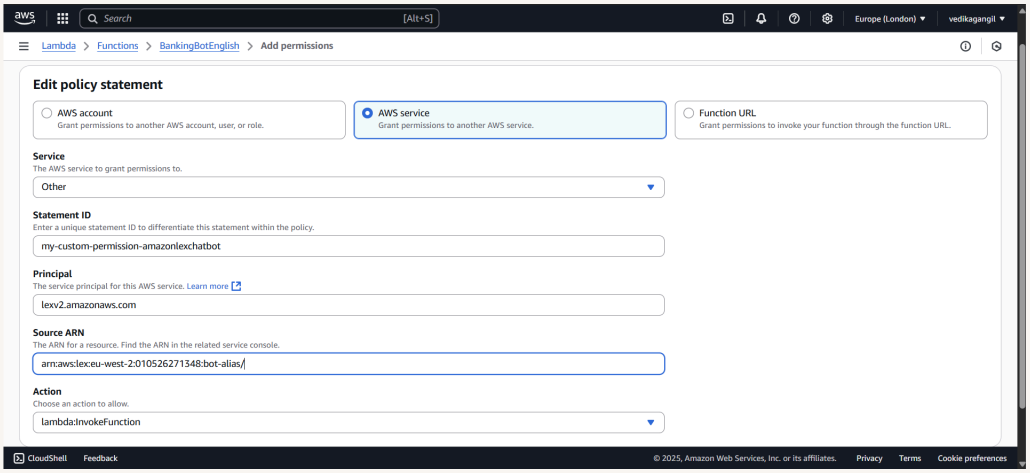
I used CloudFormation in this project to automate the manual processes of creating a banker bot which I had created previously step by step manually.



The final result!

Re-building my bot with CloudFormation took me only few minutes.

There was an error after I deployed my bot! The error was that the lambda function did not have the permission for CheckBalance. I fixed this by giving my lambda function all the necessary permissions.



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