Name: Krishna Anish Garg

Email: gargkrishna730@gmail.com

Phone No.: 9152099209

Project Name: Amazon Web Service Major Project

Project Deadline: 06th February 2023

Problem Statement:

Create a Chatbot using Amazon Lex Tool.

The intent of the chatbot: Book Hotel

1. All the information must be conveyed to the user after booking the room and must be informed to the user of the price of the hotel room and the day of stay.
2. Using this chatbot user must aware of the types of Available rooms (Classic, Duplex, etc.) - Choose your own Category as well.
3. All events must be in flow for the fulfillment of the intent.

Amazon Lex:

1. Amazon Lex is a cloud-based service provided by Amazon Web Services (AWS) that allows developers to build conversational interfaces using voice and text.
2. It uses natural language processing (NLP) to understand and respond to user inputs, making it easier for developers to create chatbots and other conversational applications.
3. Amazon Lex also integrates with other AWS services, such as Lambda and DynamoDB, to provide a complete solution for building and deploying conversational applications.

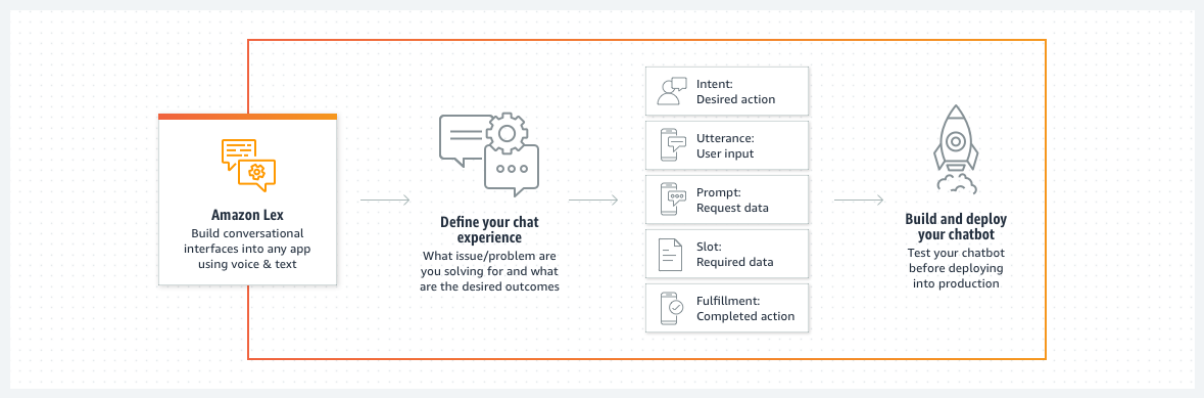
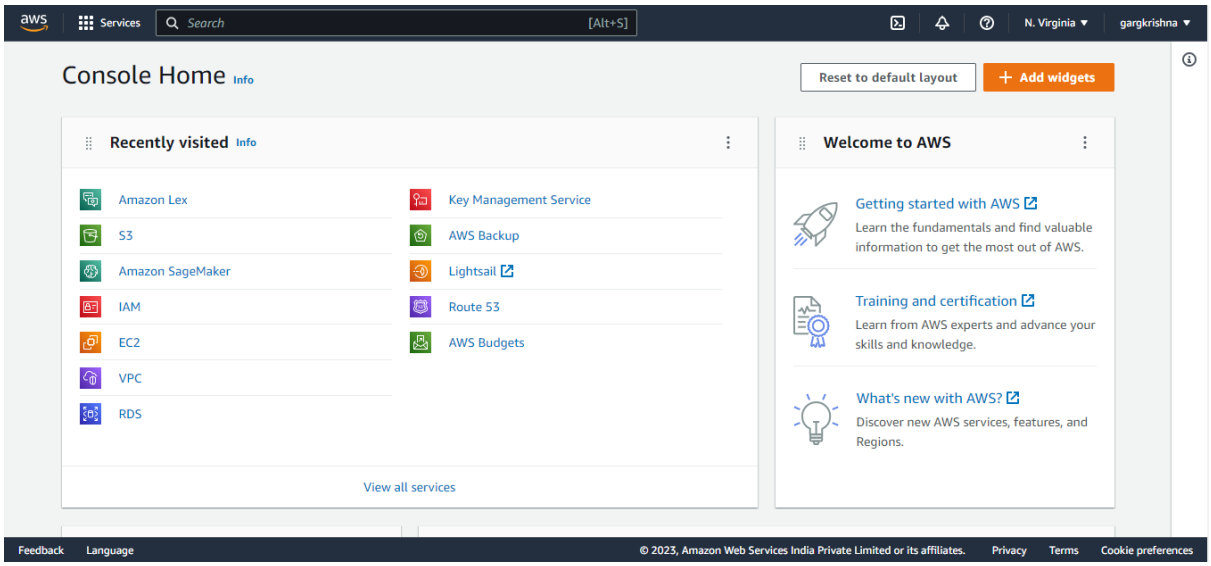


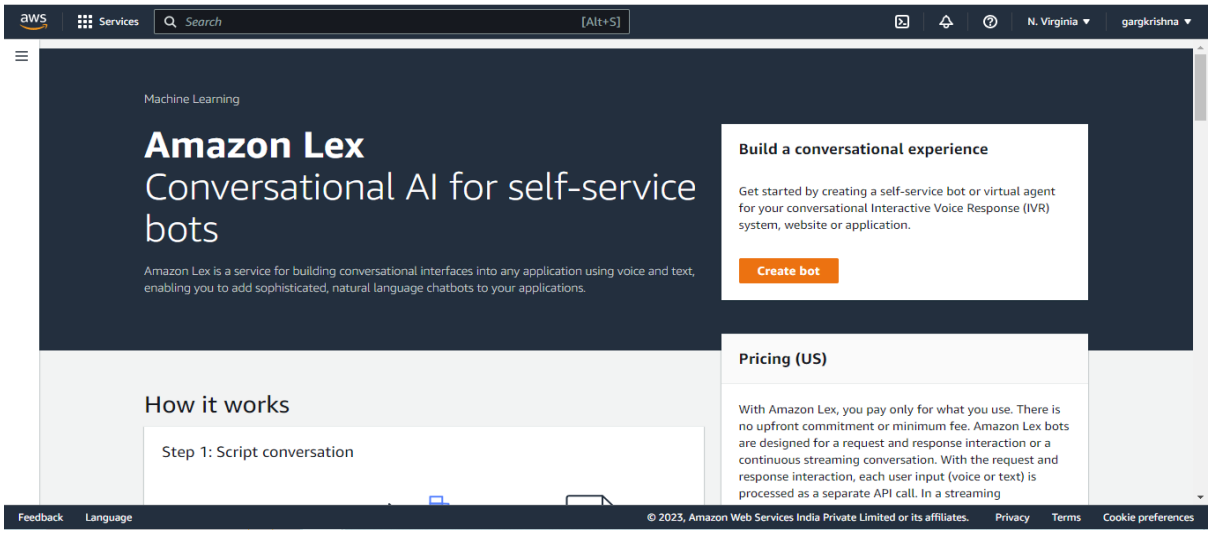
Figure 1: Amazon Lex

Solution:

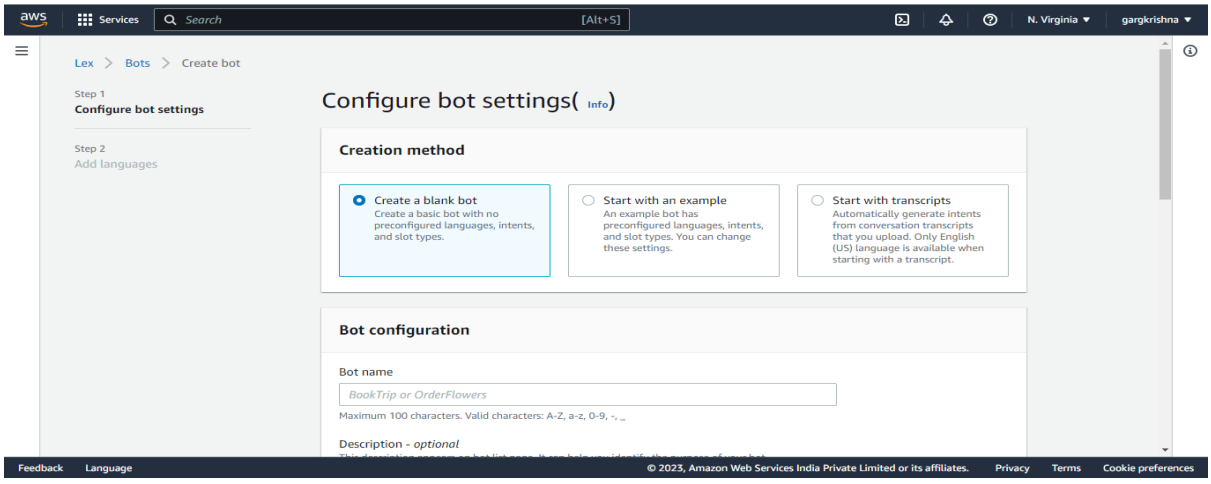
Step 1: Log in to AWS Console:



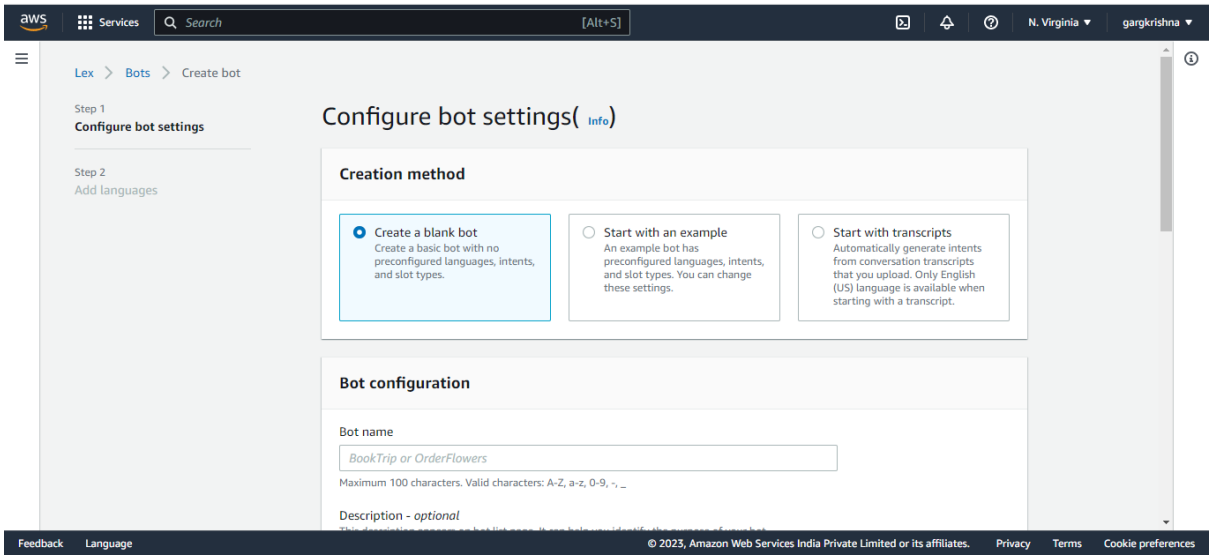
Step 2: Search for Amazon Lex & go to Amazon Lex Homepage:



Step 3: Click on Create Bot:

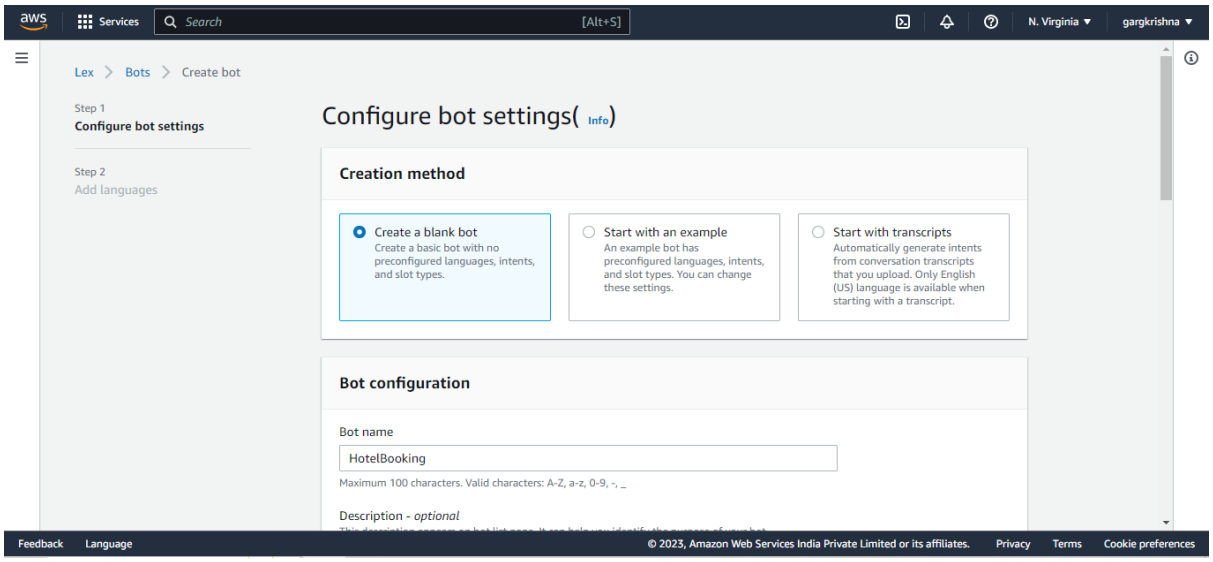


Step 4: Select “Create a Blank Bot”:



Step 5: Configure a Bot:

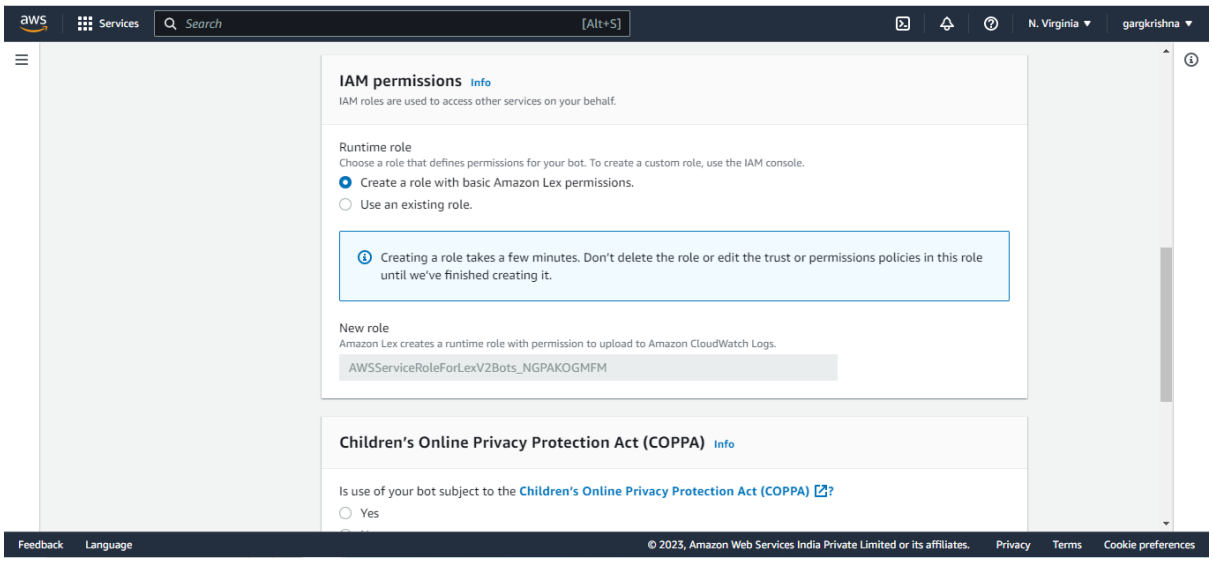
Give a name to the Bot and a Description.



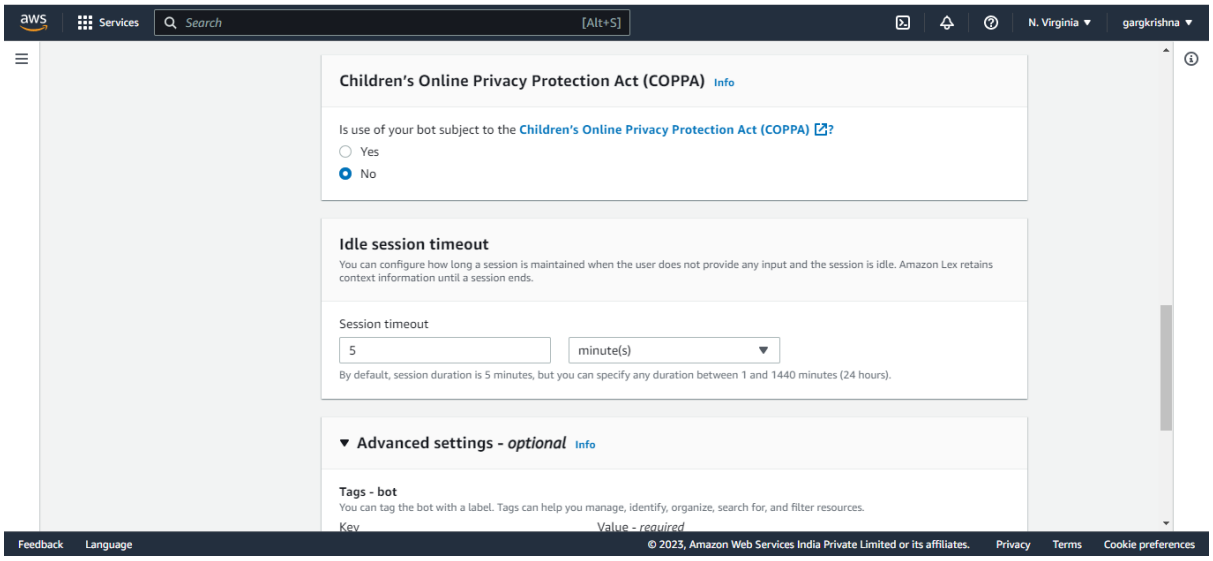
Step 6:

On IAM permissions, configure the runtime role

Create a role with basic Amazon Lex permissions.

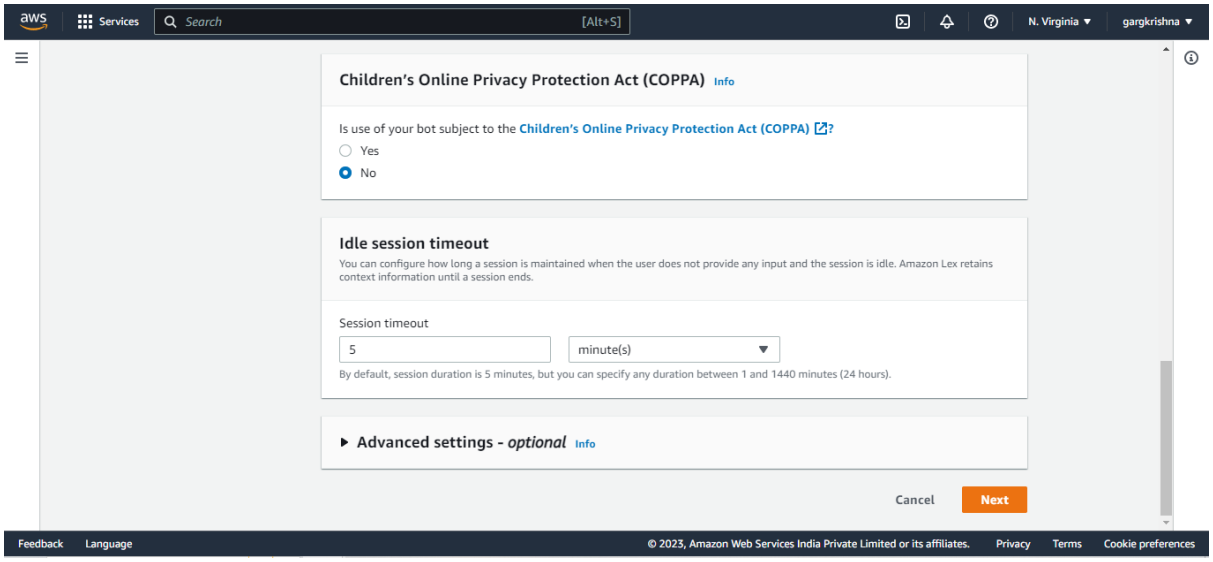


Step 7: Select "No" on Children's Online Privacy Protection Act (COPPA) as we must specify whether your use of Amazon Lex is related to a website, program, or other application that is directed or targeted, in whole or in part, to children under age 13 and subject to the Children's Online Privacy Protection Act (COPPA).

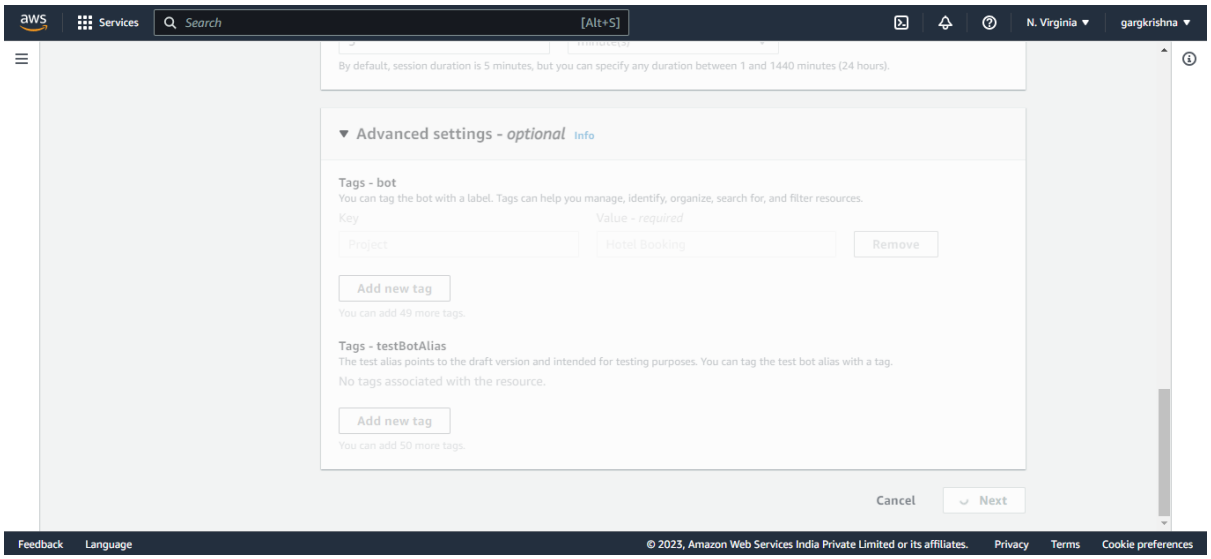


Step 8: Configure the Idle Session Timeout.

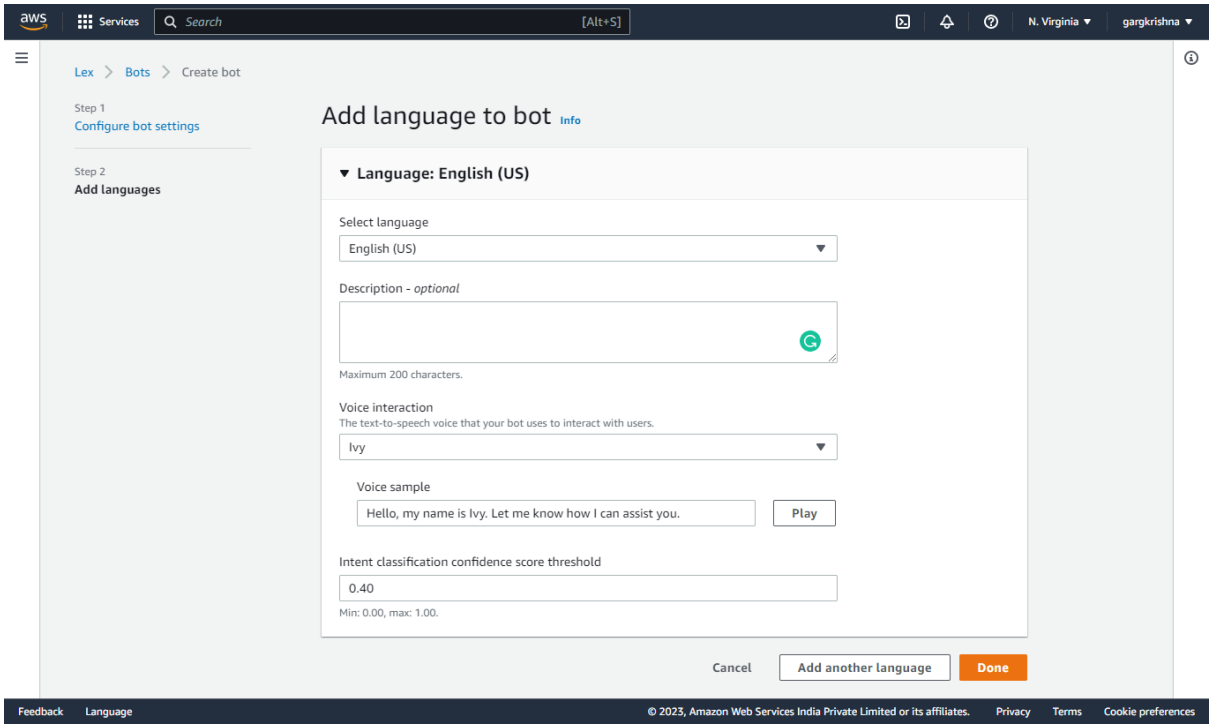
We can configure how long a session is maintained when the user does not provide any input and the session is idle. Amazon Lex retains context information until a session ends.



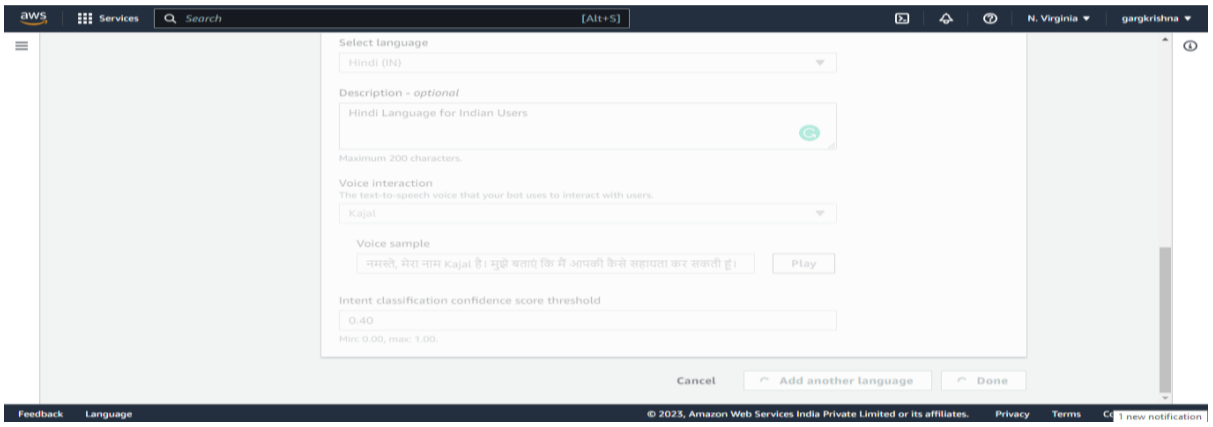
Step 9: Click on the Next:



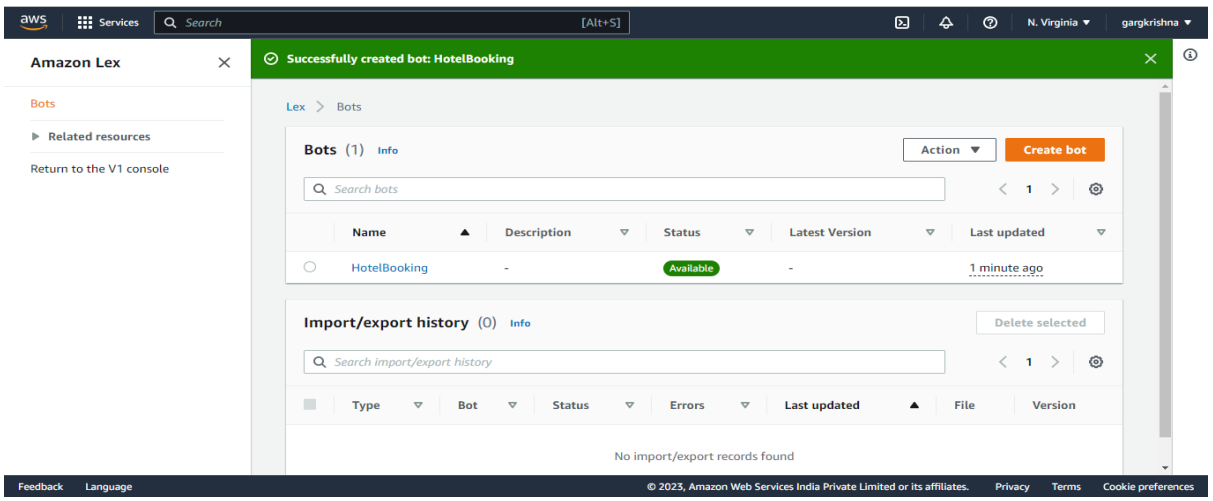
Step 10: Add Language to the Bot:



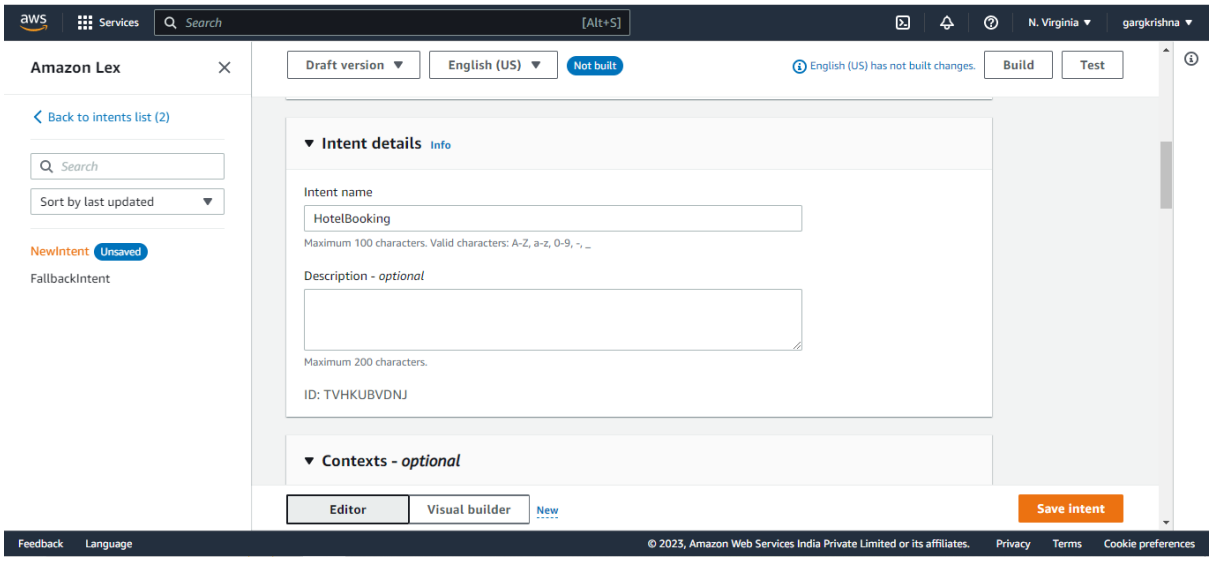
Step 11: Click on Done and a Bot has been created:



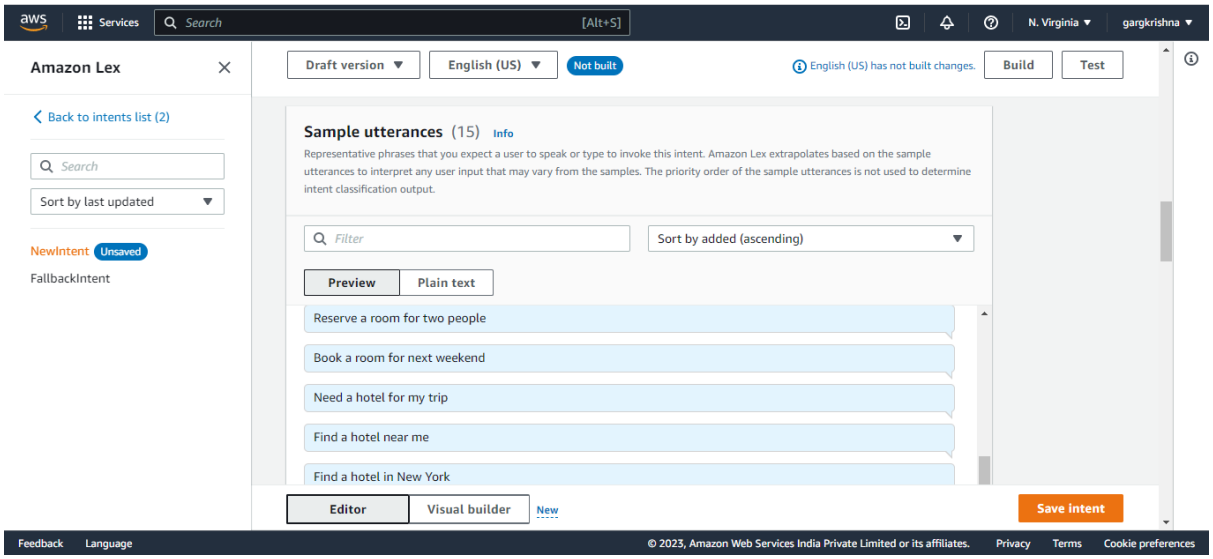
Step 12: A bot named “HotelBooking” has been created successfully:



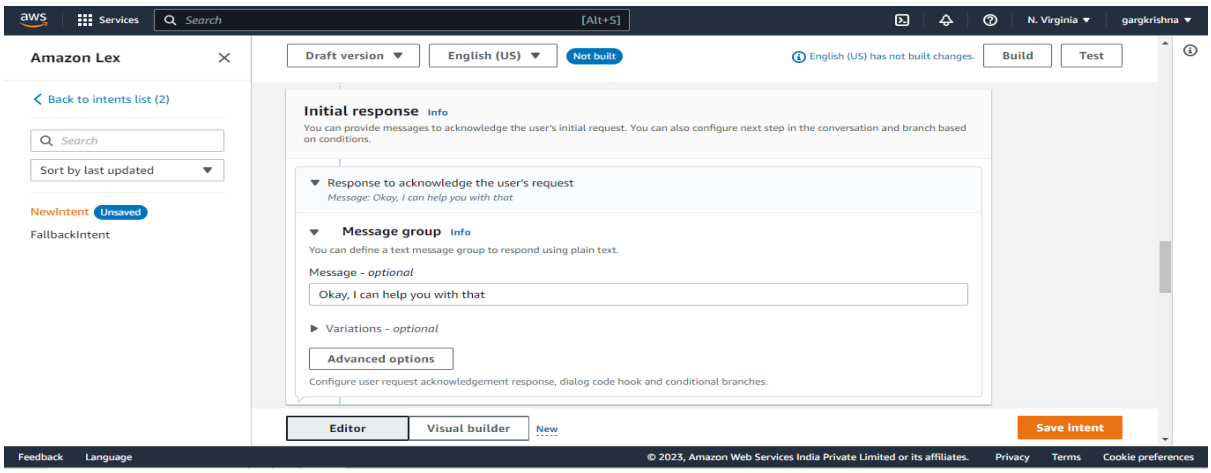
Step 13: Click on “HotelBooking” and configure the intent details:



Step 14: Add Sample Utterances related to Hotel Booking:

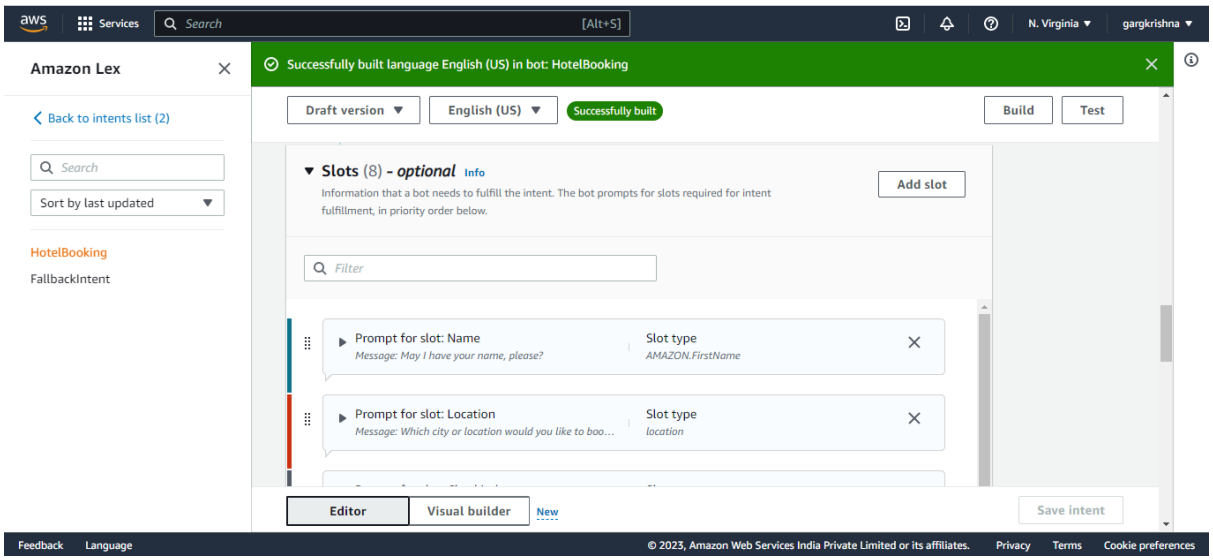


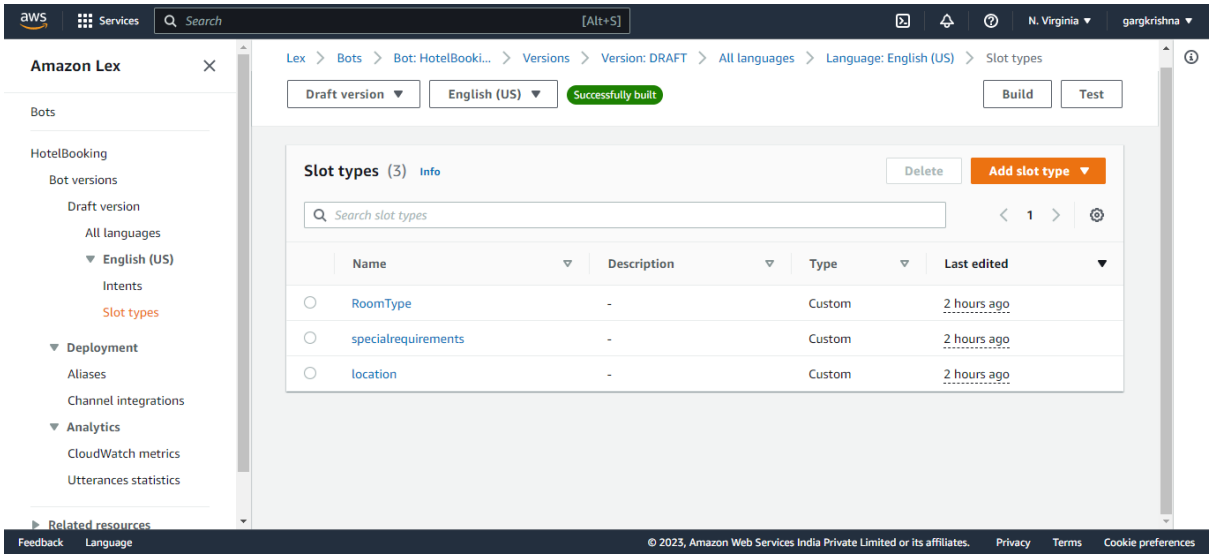
Step 15: Configure Initial Response:



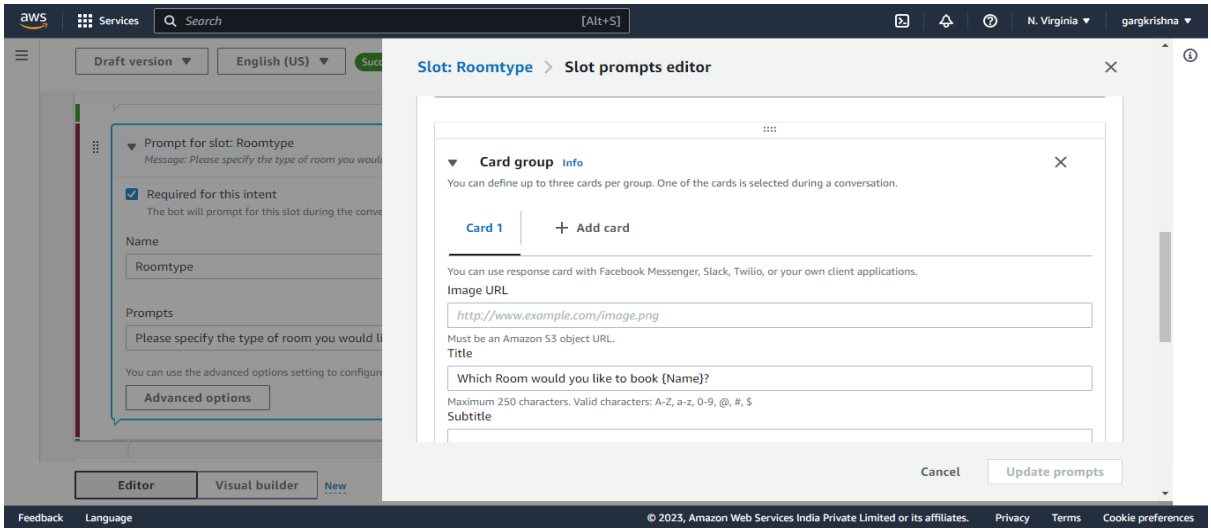
Step 16: Configure Slots:

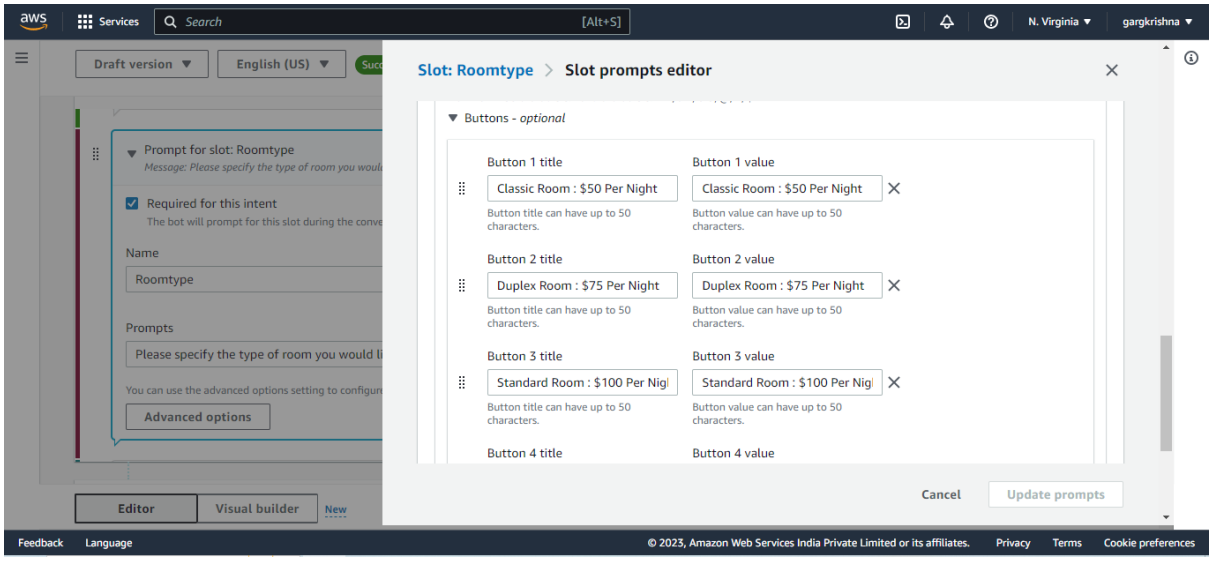
For this Project, there are 7 slot types of which 3 slot types are custom slot types.

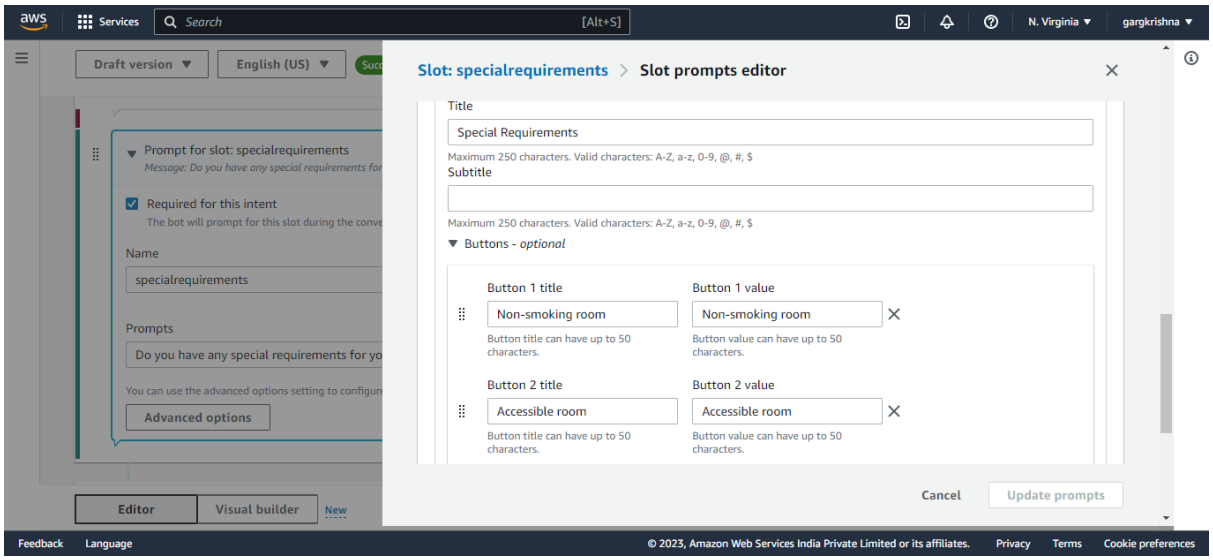




Step 17: Adding Buttons in RoomType and specialrequirements slots:



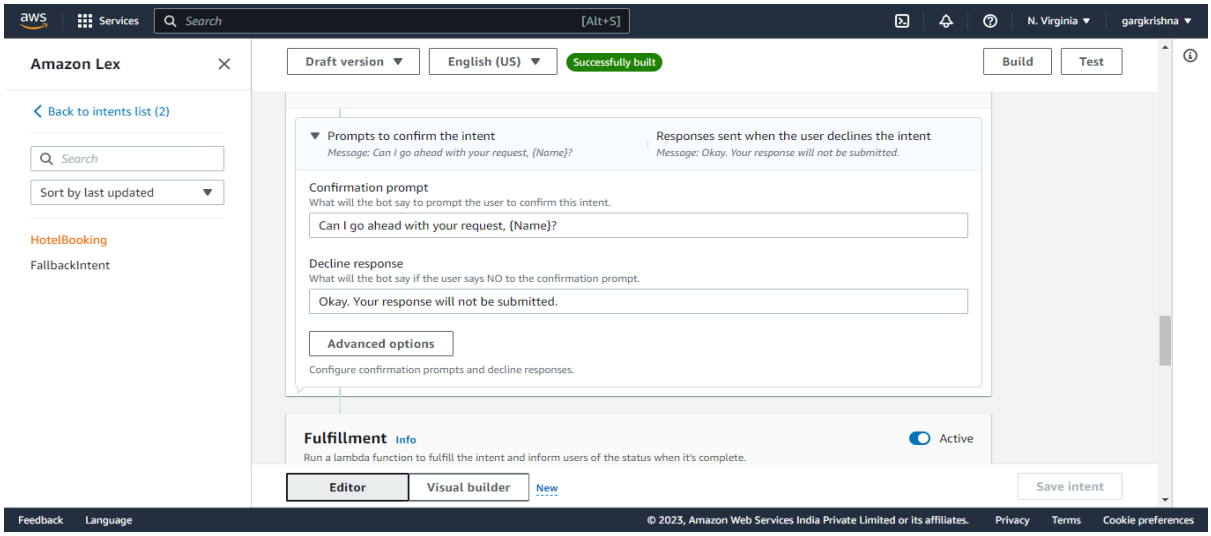




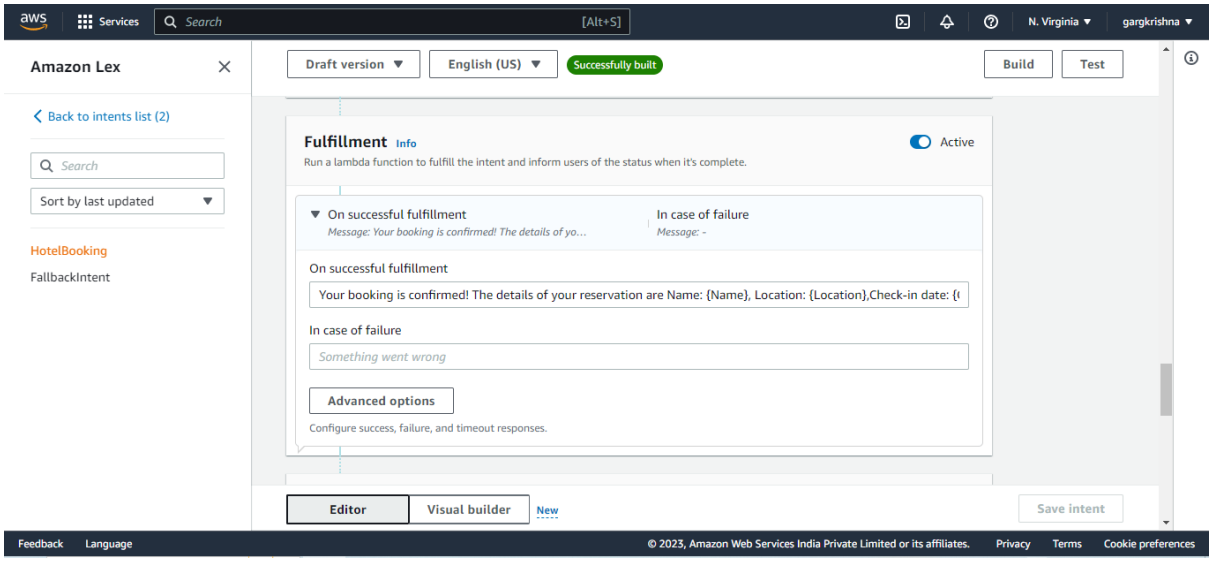
Steps to add button to the slot:

1. Select the slot and click on Advanced Options.
2. Go to slot prompt and click on "*Bot elicits information"*
3. Click on More prompt options
4. Go to Slot Prompt & click on Add and then Click Add Card Group
5. Define the title to the Card Group.
6. There will be an option on the bottom which states buttons-optional. Click on button=-optional and enter the button with suitable title and button value.
7. Click on Update Prompt.

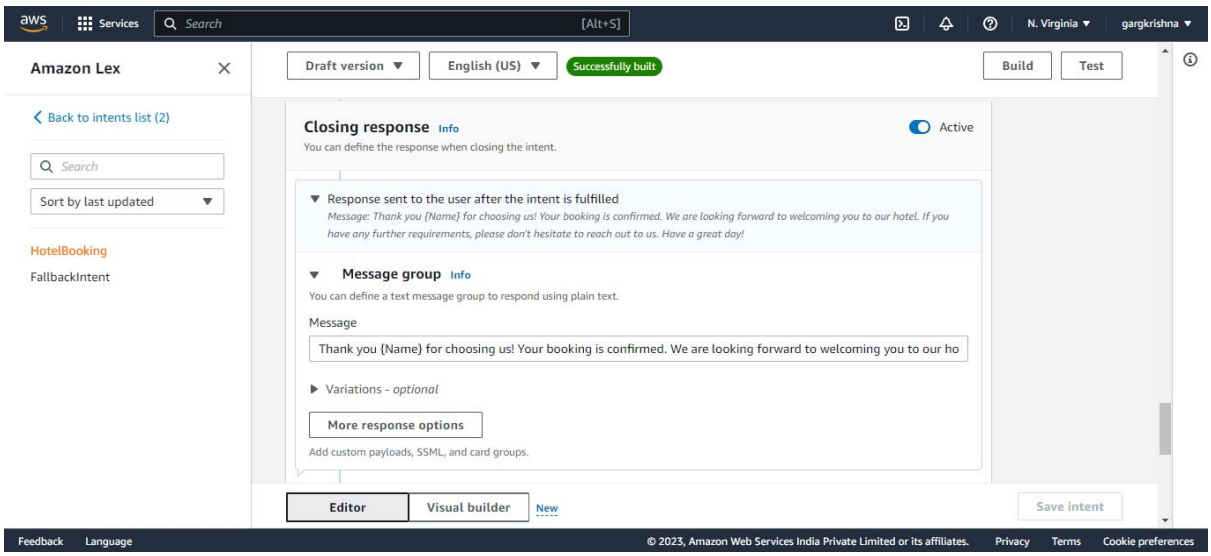
Step 18: Configuring Confirmation:



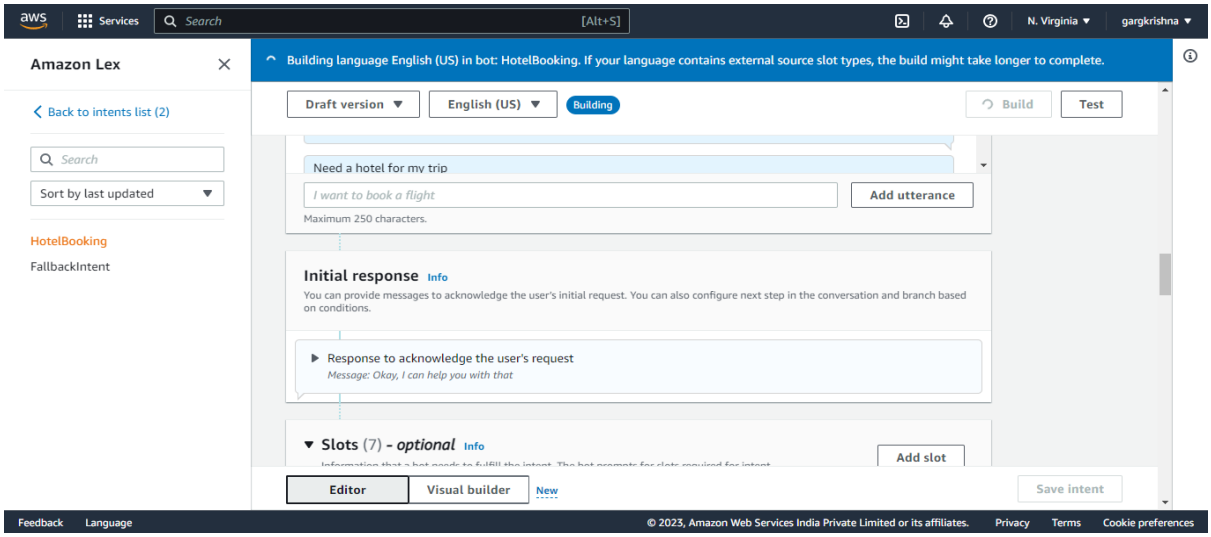
Step 19: Configuring Fulfillment:



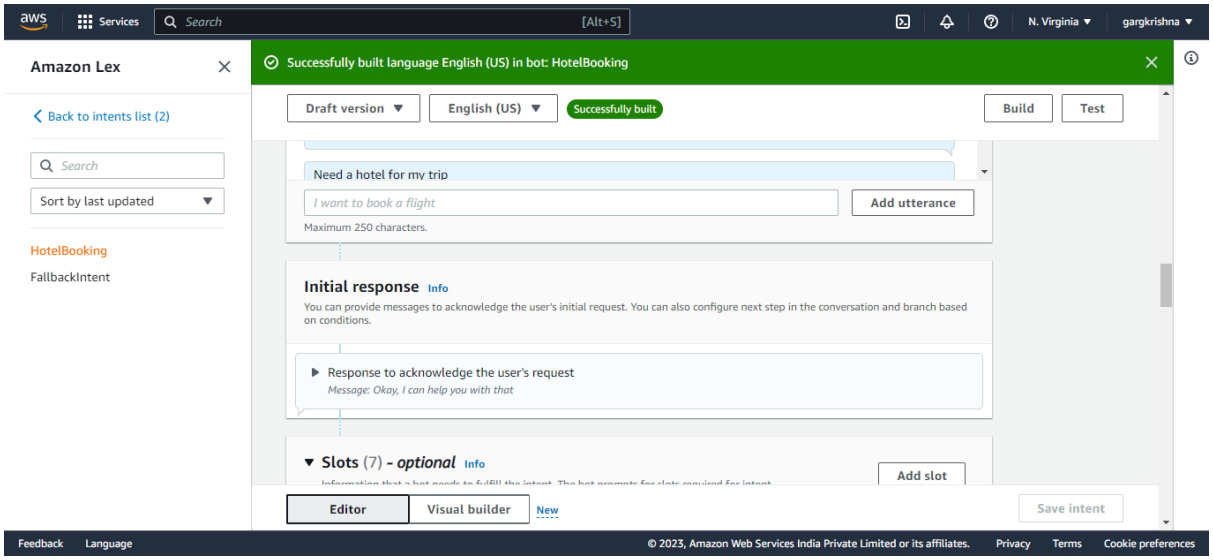
Step 20: Configuring Closing Response:



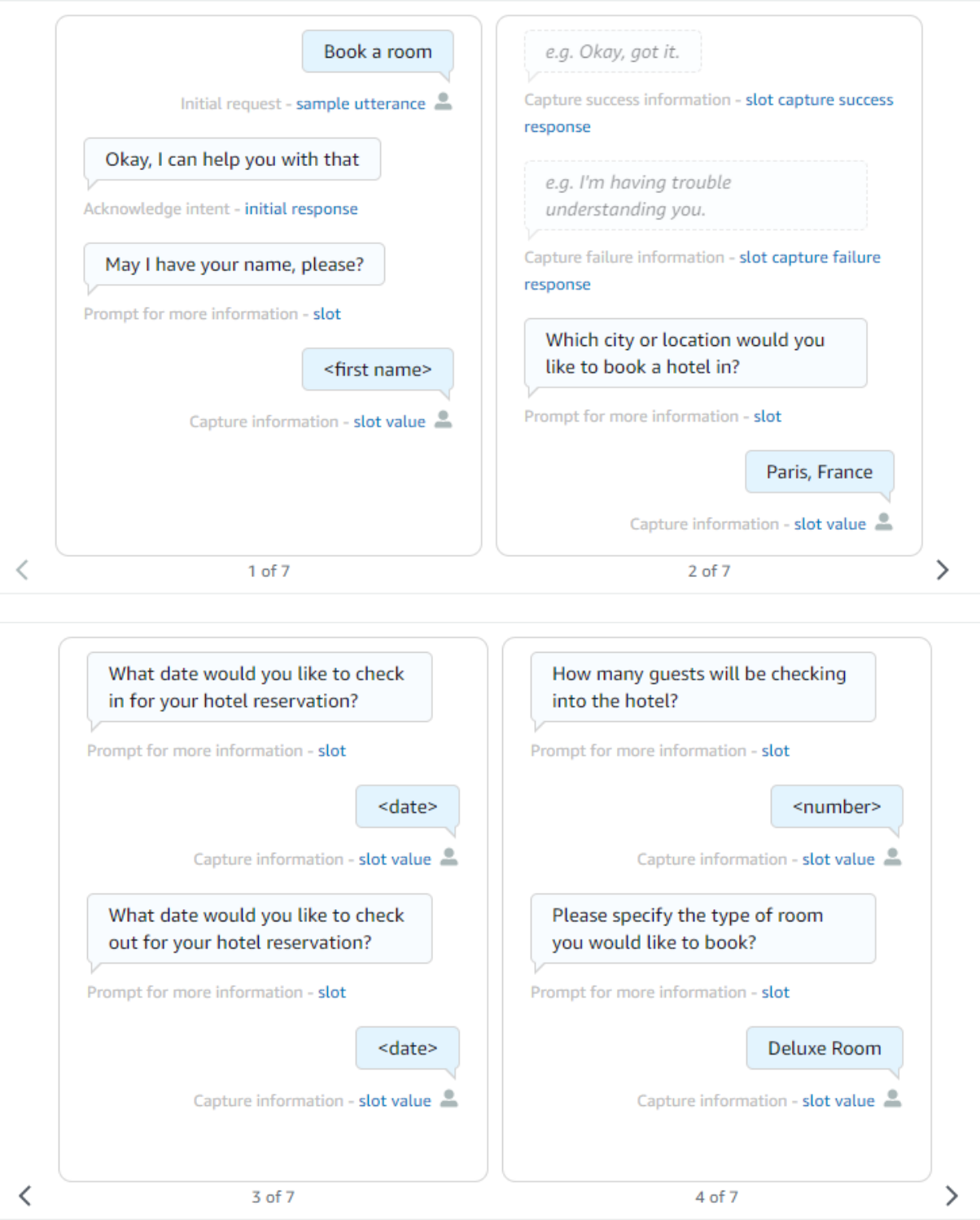
Step 21: Click on Build:

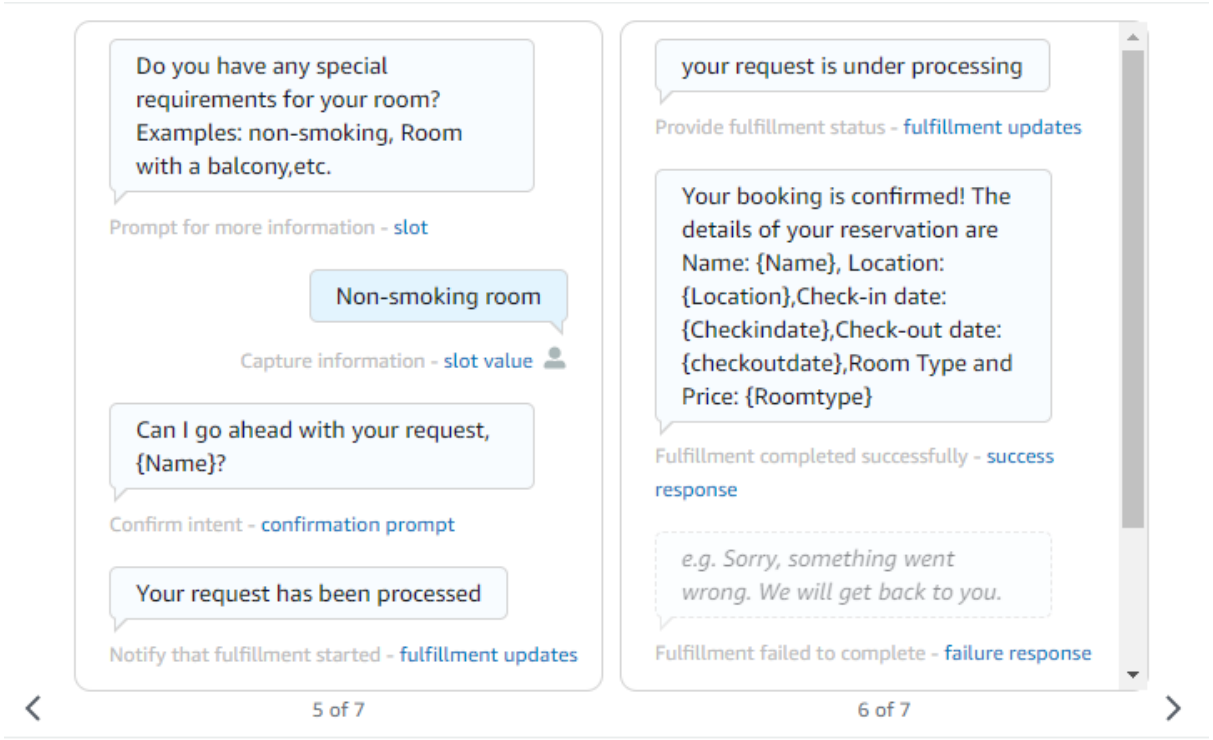


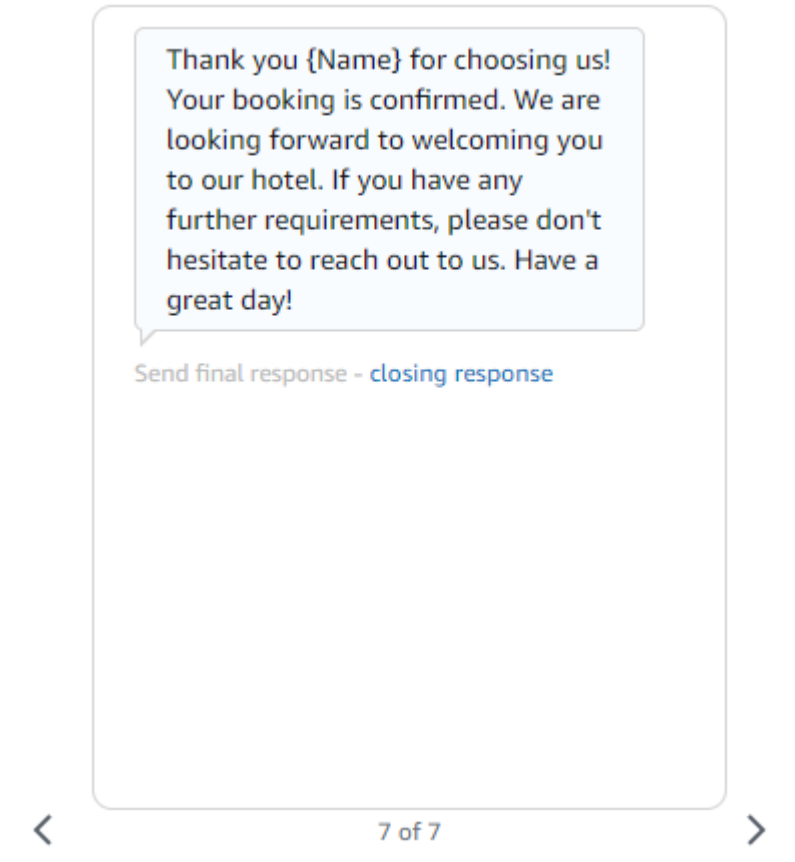
Step 22: Successfully Build a Bot:



Conversation flow for the Bot:

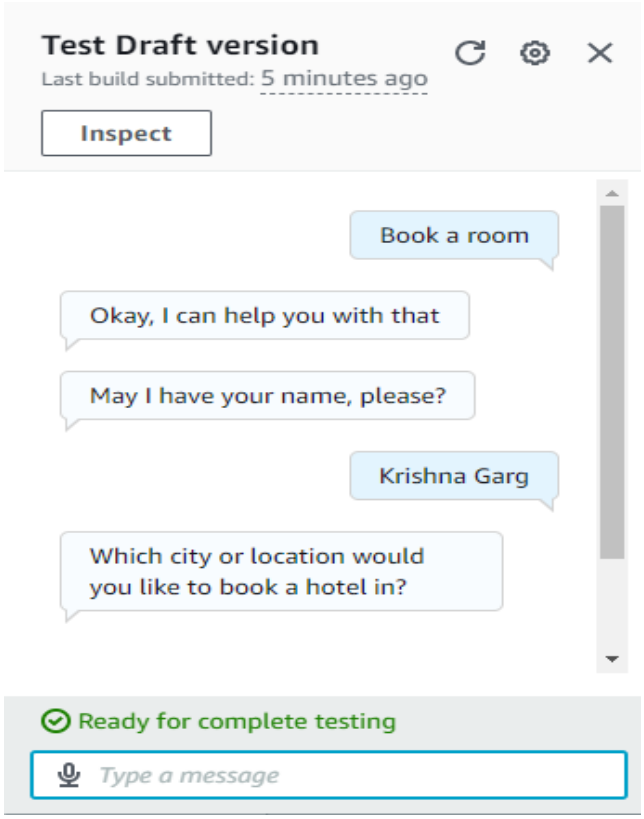



Do you have any special requirements for your room? Examples: non-smoking, Room with a balcony,etc.
Prompt for more information - slot
Non-smoking room
Capture information - slot value
Can I go ahead with your request, {Name}?
Confirm intent - confirmation prompt
Your request has been processed
Notify that fulfillment started - fulfillment updates
5 of 7
your request is under processing
Provide fulfillment status - fulfillment updates
Your booking is confirmed! The details of your reservation are Name: {Name}, Location: {Location},Check-in date: {Checkindate},Check-out date: {checkoutdate},Room Type and Price: {Roomtype}
Fulfillment completed successfully - success response
e.g. Sorry, something went wrong. We will get back to you.
Fulfillment failed to complete - failure response
6 of 7

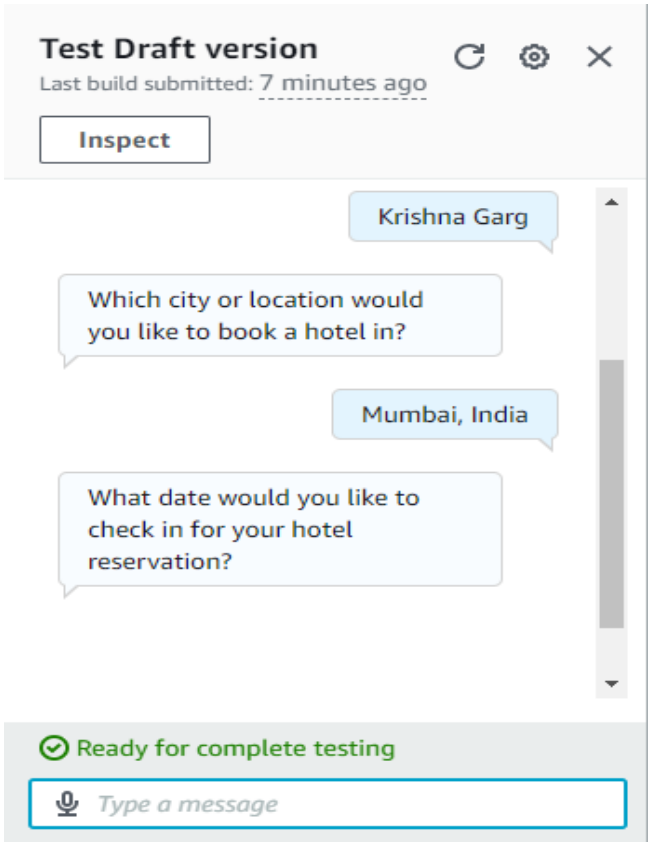

Thank you {Name} for choosing us! Your booking is confirmed. We are looking forward to welcoming you to our hotel. If you have any further requirements, please don't hesitate to reach out to us. Have a great day!
Send final response - closing response
7 of 7

Bot Testing:

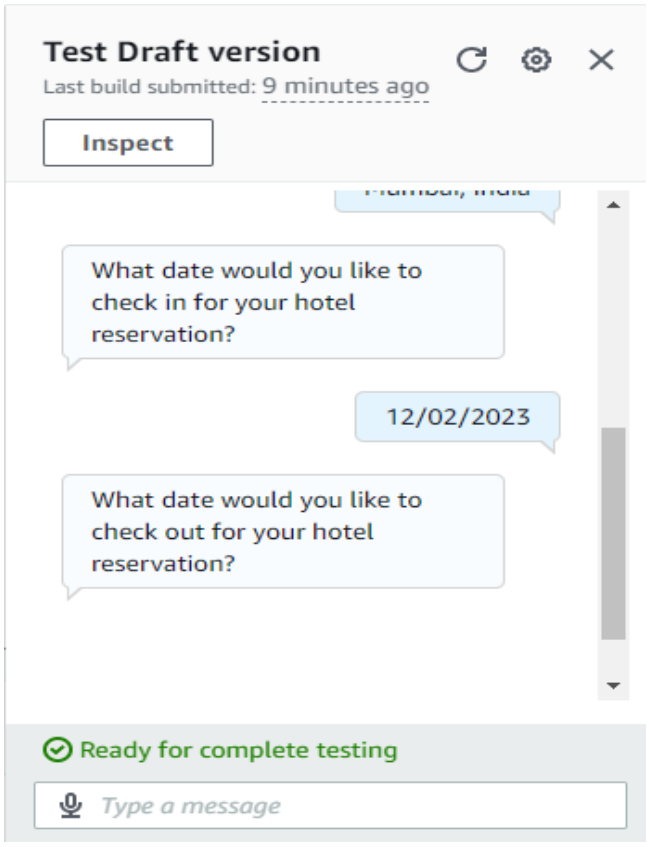
Name slot Executed Successfully.



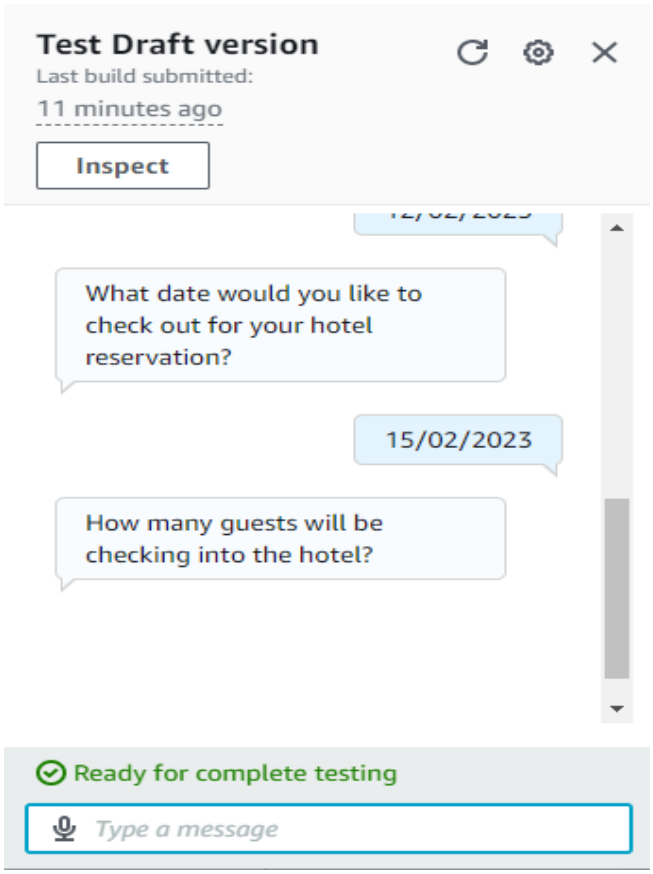
Location Slot executed Successfully.



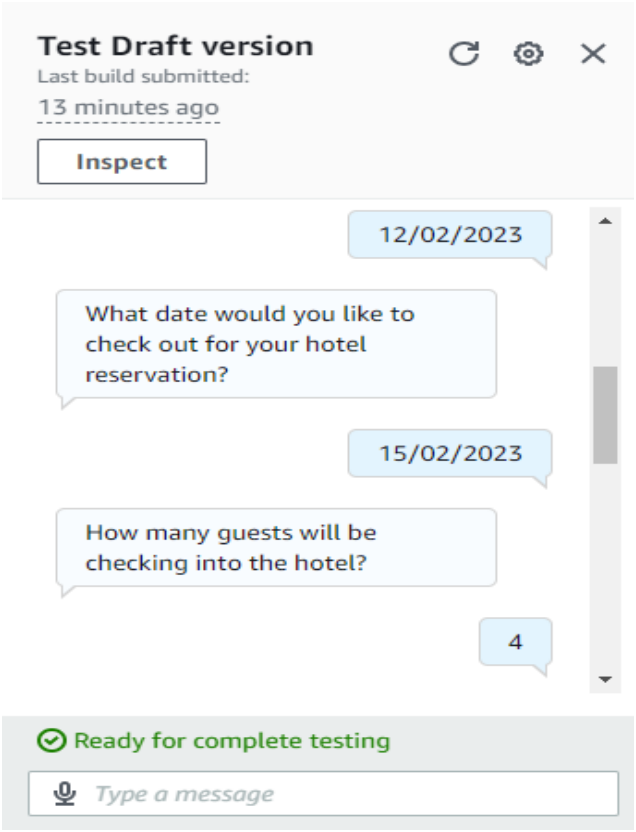
Checkindate Slot executed Successfully.



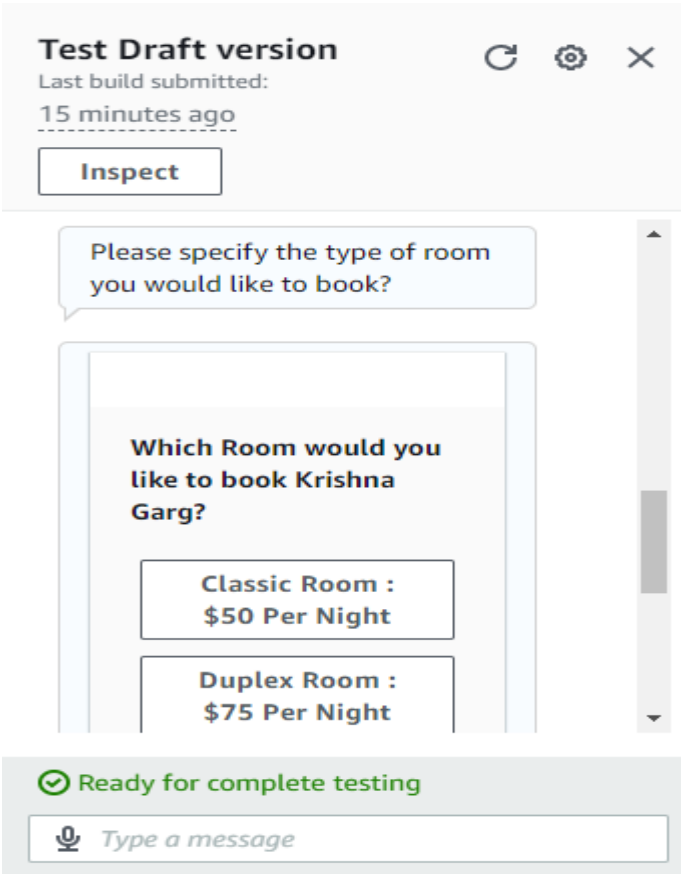
Checkoutdate Slot executed Successfully.



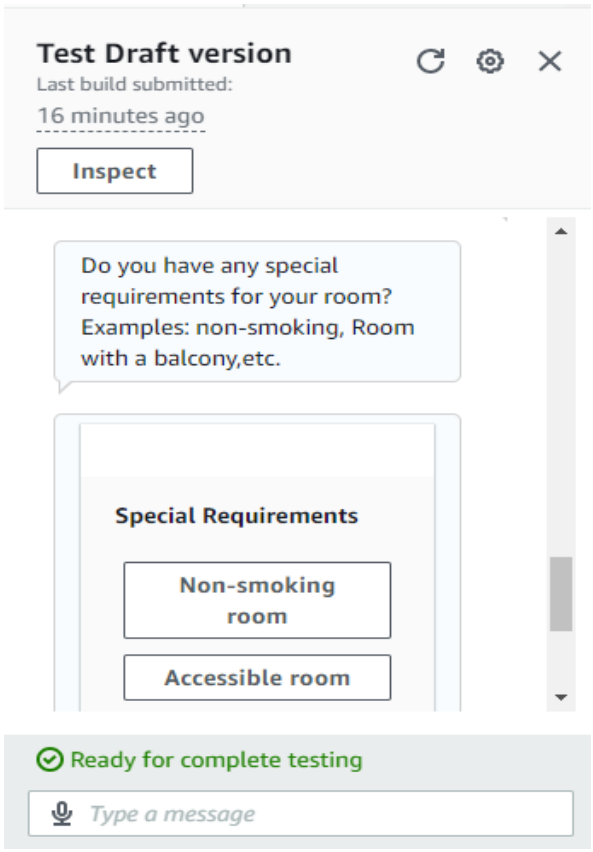
Noofguests Slot executed Successfully.



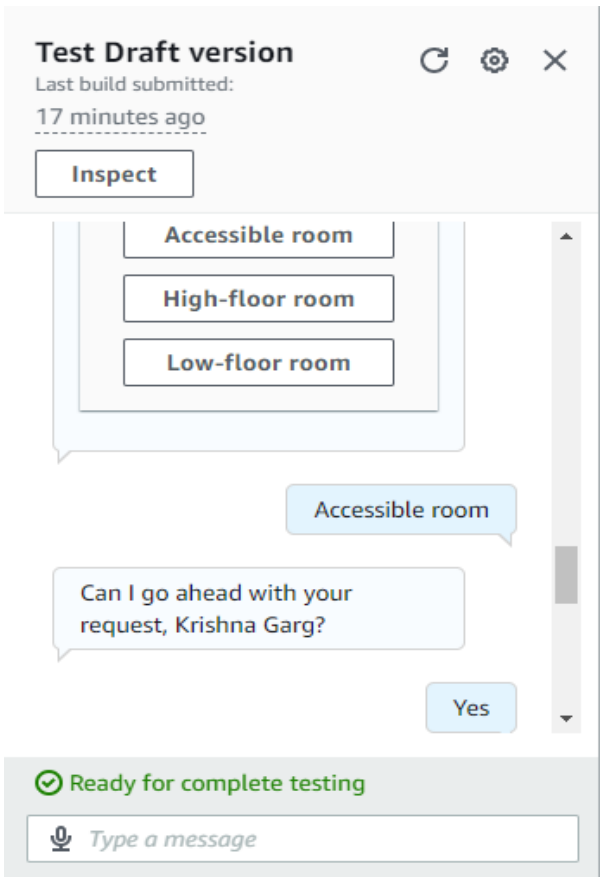
RoomType Slot with buttons executed Successfully.



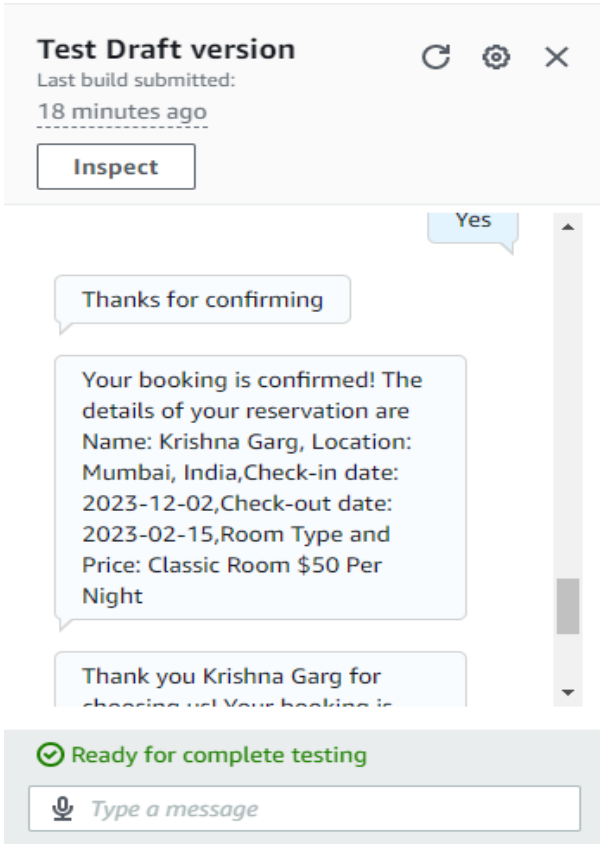
Specialrequirements Slot with buttons executed Successfully:



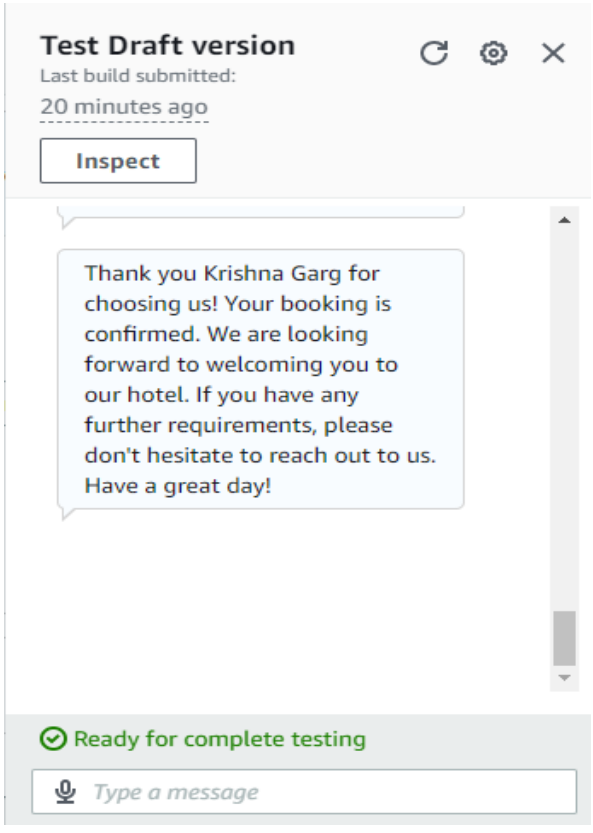
Confirmation Message is displayed.



Booking details with user input information such as Name, Location, Check-in Date, Check-out Date Room Type & Price has been displayed Successfully.



Closing Response has been displayed Successfully:



Conclusion:

In conclusion, Amazon Lex can be a powerful tool for creating a hotel booking chatbot that can assist users in finding and booking hotel rooms. The chatbot can be integrated with a variety of different systems, including databases and reservation systems, to ensure that all relevant information is easily accessible and up-to-date. To build a successful chatbot, it is important to carefully design and define the user flow, including prompts and slots, and implement a well-designed Lambda function for fulfillment. Additionally, regular testing and refinement of the chatbot's functionality will be necessary to ensure that it continues to meet the needs and expectations of users.

Testing Video of Chatbot:

https://drive.google.com/file/d/1O2xiUfzQzQfryQyic6ai9qV64m-9i3A5/view?usp=sharing