CHATBOT USING AWS LEX REPORT

Submitted by

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Under the Guidance of

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BONAFIDE CERTIFICATE

Certified that this report titled **CHATBOT USING AWS LEX** is the bonafide work done by **Naveen Choudhary (RA2011028010155), Neehar S Ashok (RA2011028010118)** who carried out the lab exercises under my supervision. Certified further, that to the best of my knowledge the work reported herein does not form part of any other work.

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PROFESSOR

18CSE344T– Cloud Architecture Course Faculty

Department of Networking and Communications

Signature of the Internal Examiner-I **Signature of the Internal Examiner-II**

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PROBLEM STATEMENT

In today's world , everything has become automated. Bots have taken the place of humans where the task was repetitive. Using bots helps save money and resources of any company and they can operate on a 24x7 basis. A chatbot or chatterbot is a software application used to conduct an on-line chat conversation via text or text-to-speech, in lieu of providing direct contact with a live human agent. Chatbot helps automate and reduce human interaction.

OBJECTIVE

Our main objective is to create an efficient and secure chat bot which helps in booking and automates bookings for any hotels using AWS LEX. This bot can also help in booking appointments also.

AWS

Amazon Web Services, Inc. is a subsidiary of Amazon that provides on-demand cloud computing platforms and APIs to individuals, companies, and governments, on a metered pay-as-you-go basis. These cloud computing web services provide distributed computing processing capacity and software tools via AWS server farms.

AWS services are delivered to customers via a network of AWS server farms located throughout the world. Fees are based on a combination of usage (known as a "Pay-as-you-go" model), hardware, operating system, software, or networking features chosen by the subscriber required availability, redundancy, security, and service options. Subscribers can pay for a single virtual AWS computer, a dedicated physical computer, or clusters of either Amazon provides select portions of security for subscribers (e.g. physical security of the data centers) while other aspects of security are the responsibility of the subscriber (e.g. account management, vulnerability scanning, patching). AWS operates from many global geographical regions including seven in North America.

Amazon markets AWS to subscribers as a way of obtaining large-scale computing capacity more quickly and cheaply than building an actual physical server farm.All services are billed based on usage, but each service measures usage in varying ways. As of 2021 Q4, AWS has 33% market share for cloud infrastructure while the next two competitors Microsoft Azure and Google Cloud have 21%, and 10% respectively, according to Synergy Group.

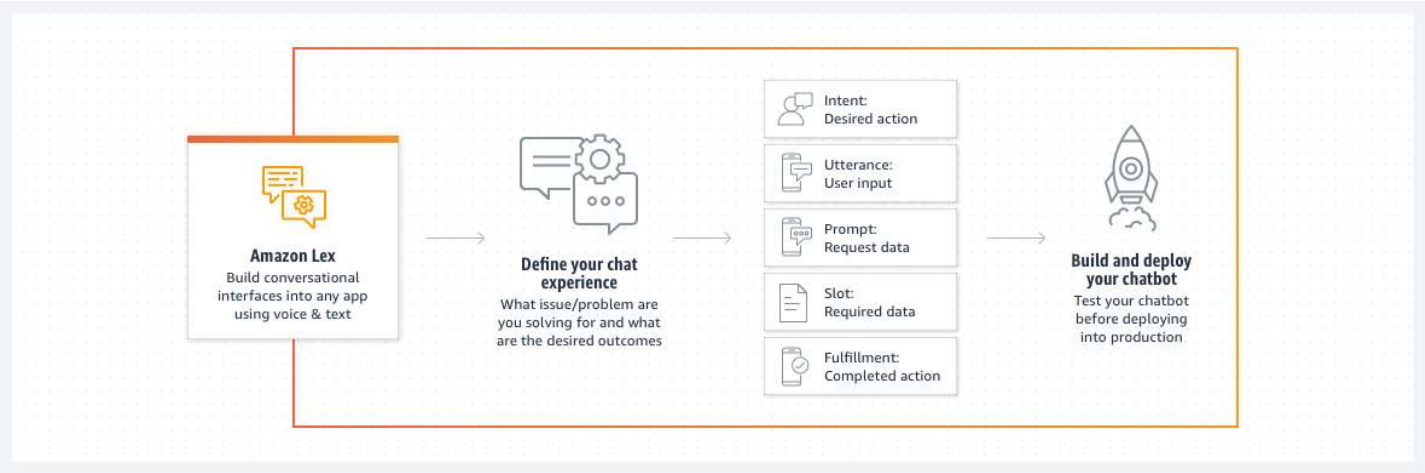
AWS LEX

Amazon Lex is an AWS service for building conversational interfaces for applications using voice and text. With Amazon Lex, the same conversational engine that powers Amazon Alexa is now available to any developer, enabling you to build sophisticated, natural language chatbots into your new and existing applications. Amazon Lex provides the deep functionality and flexibility of natural language understanding (NLU) and automatic speech recognition (ASR) so you can build highly engaging user experiences with lifelike, conversational interactions, and create new categories of products.

Amazon Lex enables any developer to build conversational chatbots quickly. With Amazon Lex, no deep learning expertise is necessary—to create a bot, you just specify the basic conversation flow in the Amazon Lex console. Amazon Lex manages the dialogue and dynamically adjusts the responses in the conversation. Using the console, you can build, test, and publish your text or voice chatbot. You can then add the conversational interfaces to bots on mobile devices, web applications, and chat platforms (for example, Facebook Messenger).

WORKING OF AWS LEX

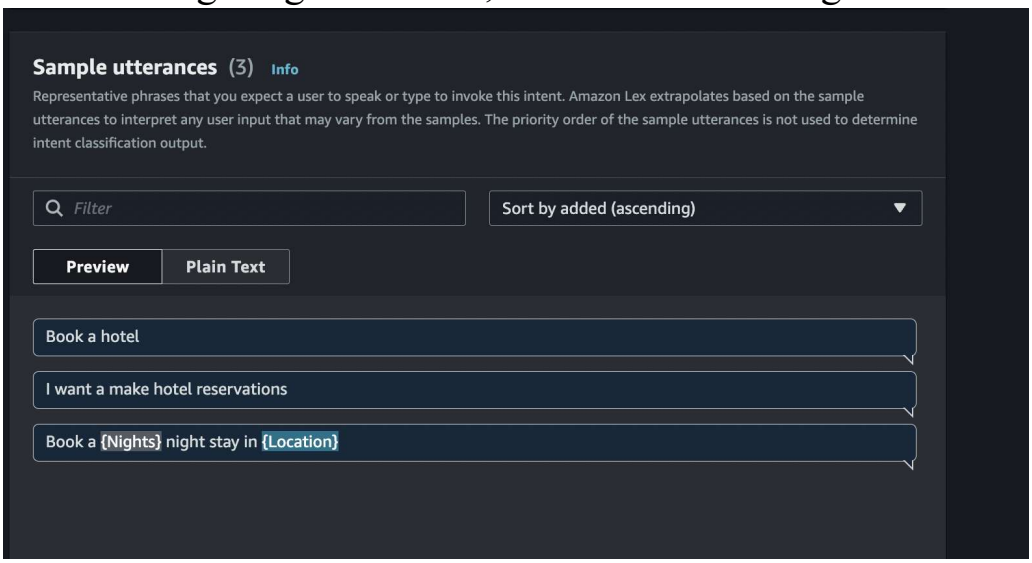
Amazon Lex is a fully managed artificial intelligence (AI) service with advanced natural language models to design, build, test, and deploy conversational interfaces in applications.



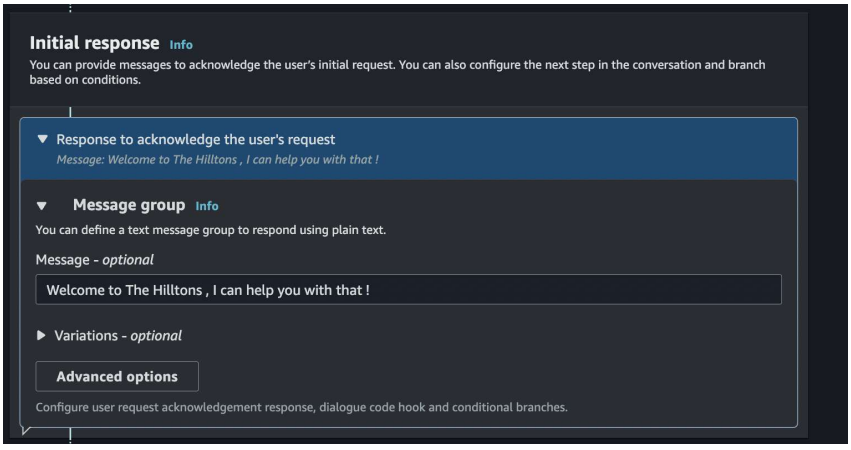
DESIGNING CHATBOT IN LEX

While creating / Designing a Chatbot using LEX we need to create Intent. Intent helps chatbot know what the user wants to complete which action / task . For example “I want to book a hotel”.

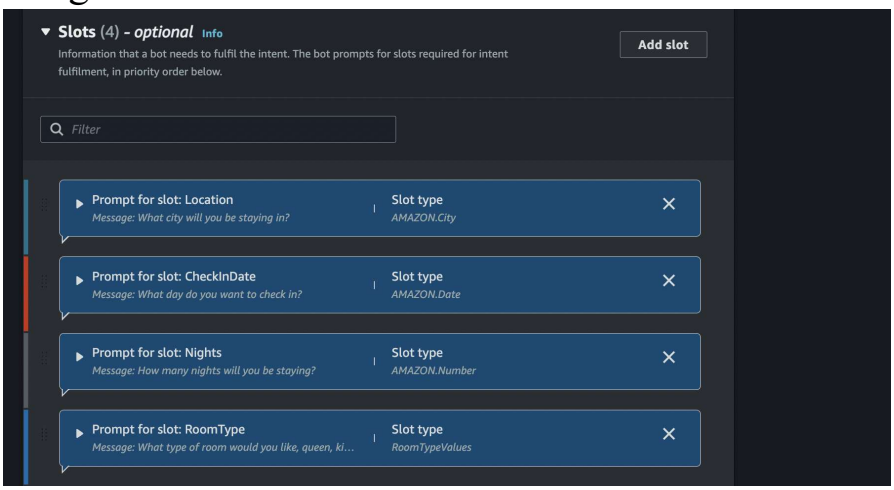
While configuring the Intent ,utterances are configured

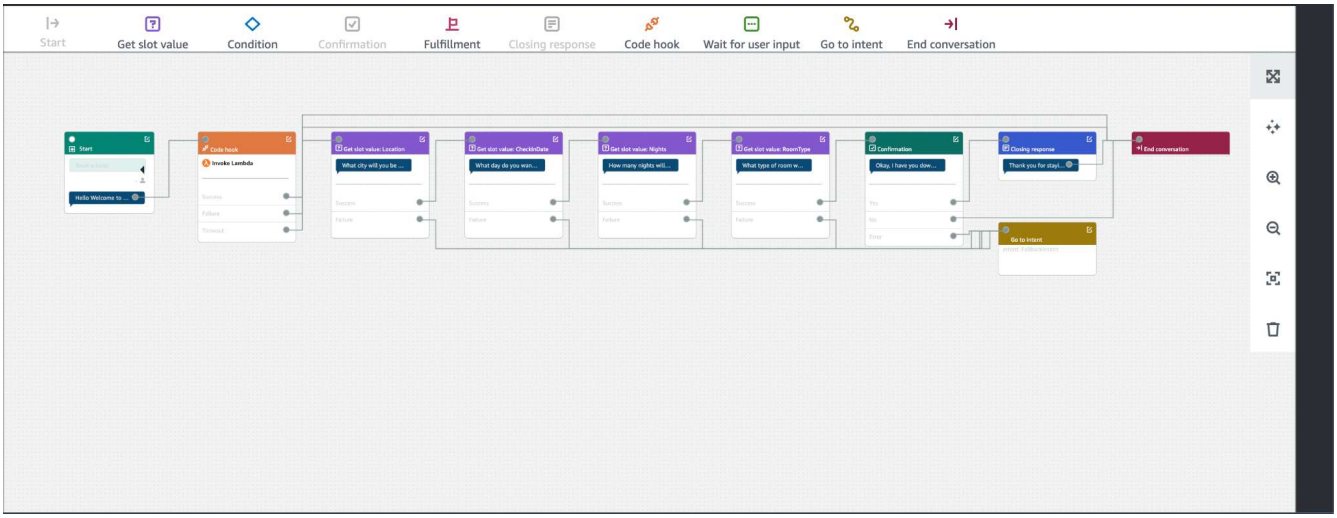


the initial response is configured

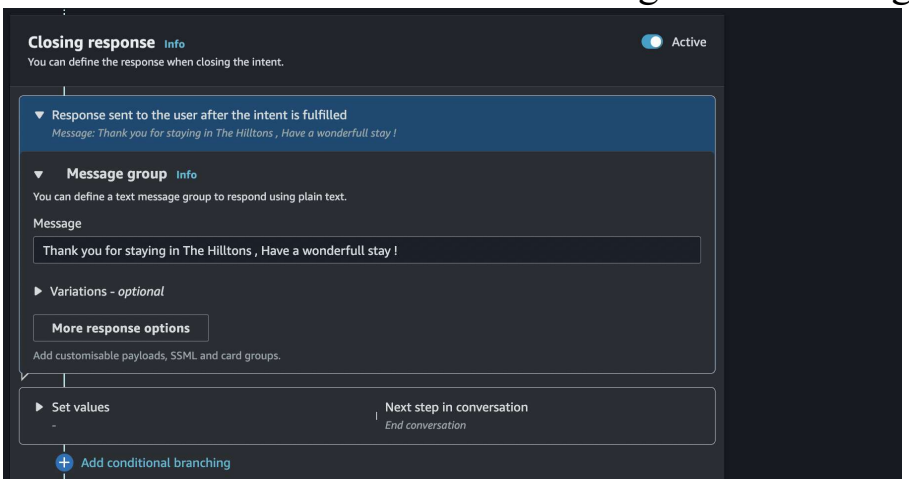


slots can be configured which would determine the further action by the bot. After arranging the slots according to how the bot should send and receive messages.The arrangements and flow of slots can be arranged using a visual builder too

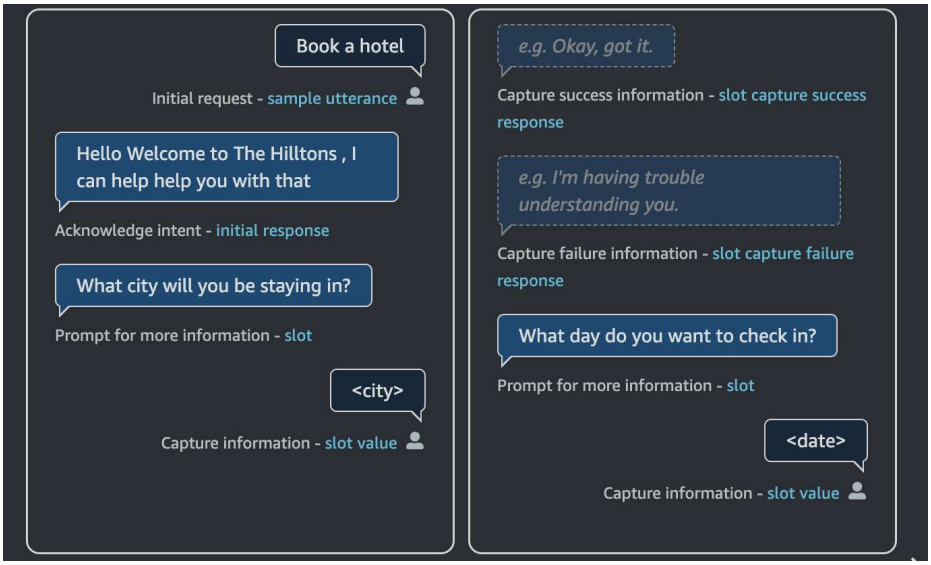




After that confirmation / failure message can be configured.

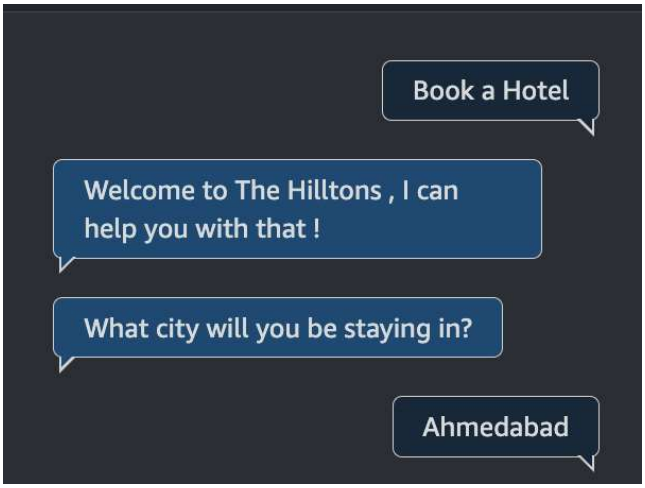


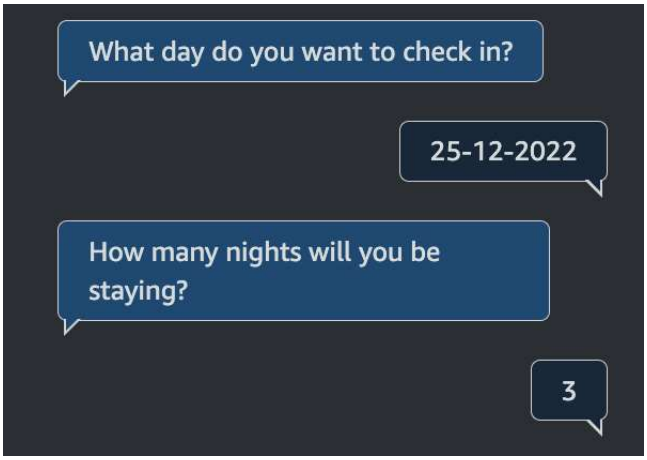
AWS LEX also provides the conversation flow earlier so developers can preview how the flow of chat goes.This help is designing helpful chatbots.

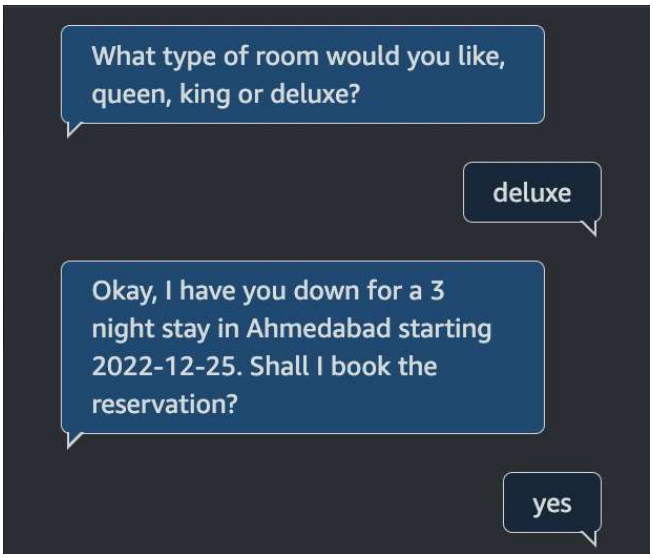


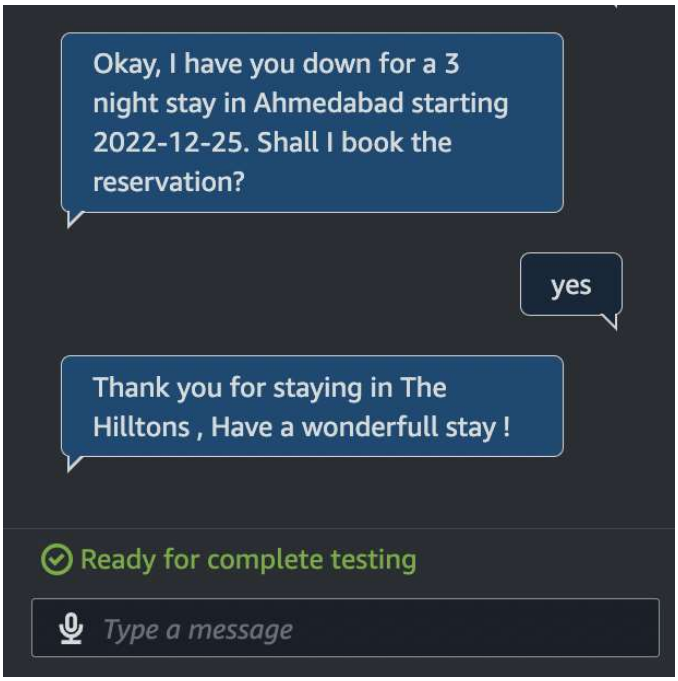
After all the configuration and designing the bot can be built , deployed and tested.

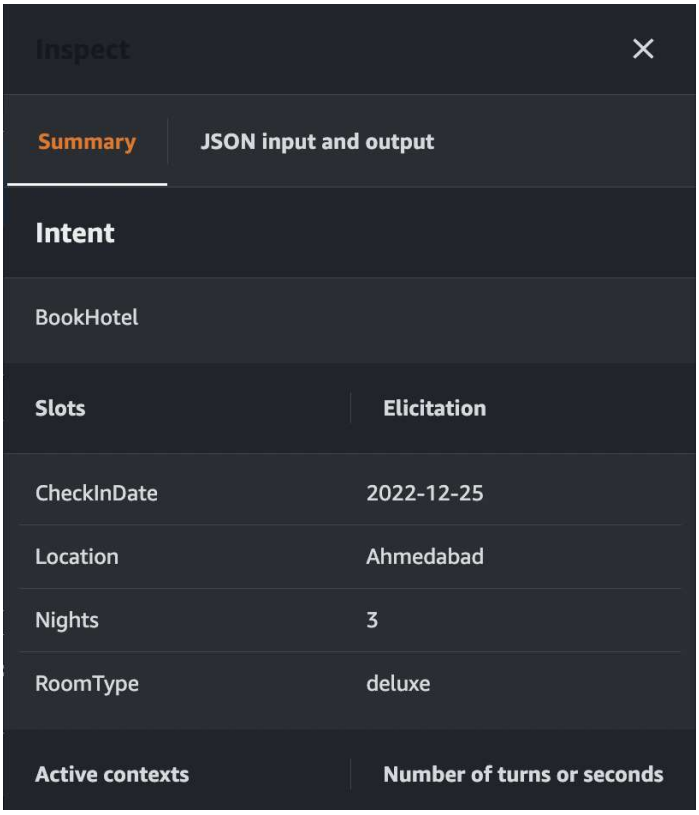
TESTING CHATBOT








Okay, I have you down for a 3 night stay in Ahmedabad starting 2022-12-25. Shall I book the reservation?
yes
Thank you for staying in The Hilltons , Have a wonderfull stay !
Ready for complete testing
Type a message


Inspect
Summary
JSON input and output
Intent
BookHotel
Slots
Elicitation
CheckInDate
2022-12-25
Location
Ahmedabad
Nights
3
RoomType
deluxe
Active contexts
Number of turns or seconds

REFERENCES

- **AWS DOCS**
- **AWS**
- **WIKIPEDIA**
- **GITHUB**
- **JAVAPOINT**
- **EDUREKA**