UPES CSA Student Chapter

Amazon Web Services (AWS) boot camp

Amazon Lex Overview

6th Feb, Sunday
7:30 PM to 8:30 PM IST

AWS
User Groups

Agenda

- What is a chatbot?
- What is Amazon Lex?
- How Lex works?
- Core Concepts & Terminologies
- Amazon Lex Demo

Speakers

Sanchit Jain

Lead Architect - AWS at Quantiphi
AWS APN Ambassador

AWS
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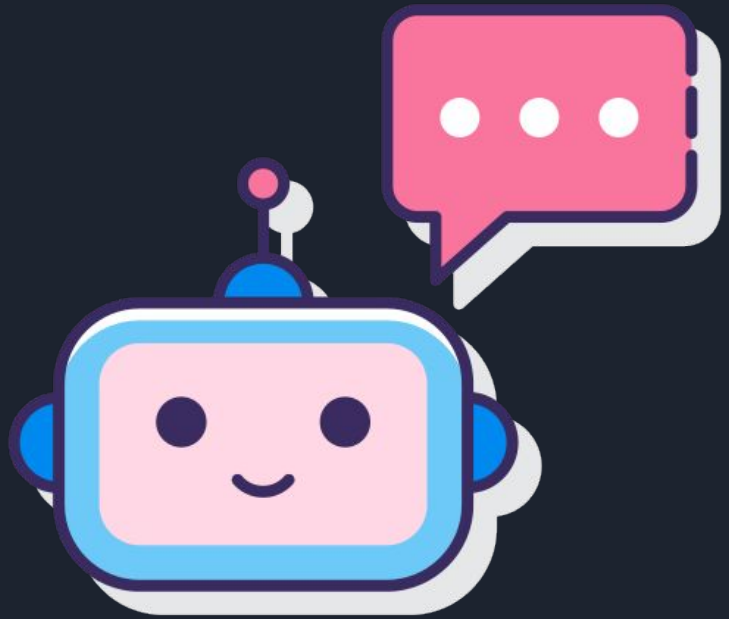
What is a Chatbot?

What is a Chatbot?

A chatbot is a compute program which conducts conversations in natural language via speech or text, understands the intent of the user and sends a response based on business rules and data of the organization.



First Chatbot: Eliza was built in 1966 to mimic human conversations

Chatbot Applications: Online Shopping, Booking Tickets, New Reports, Food Ordering, etc

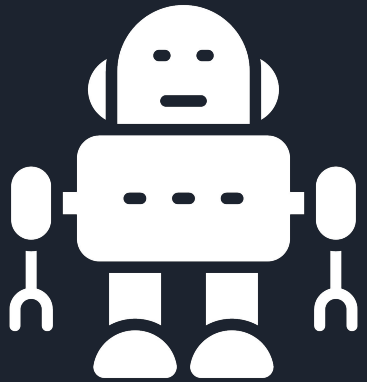
Chatbot Types: Command Bots, Learning Bots

What is Lex?

Amazon Lex

Amazon Lex is a service for building conversational interfaces into any application using voice and text

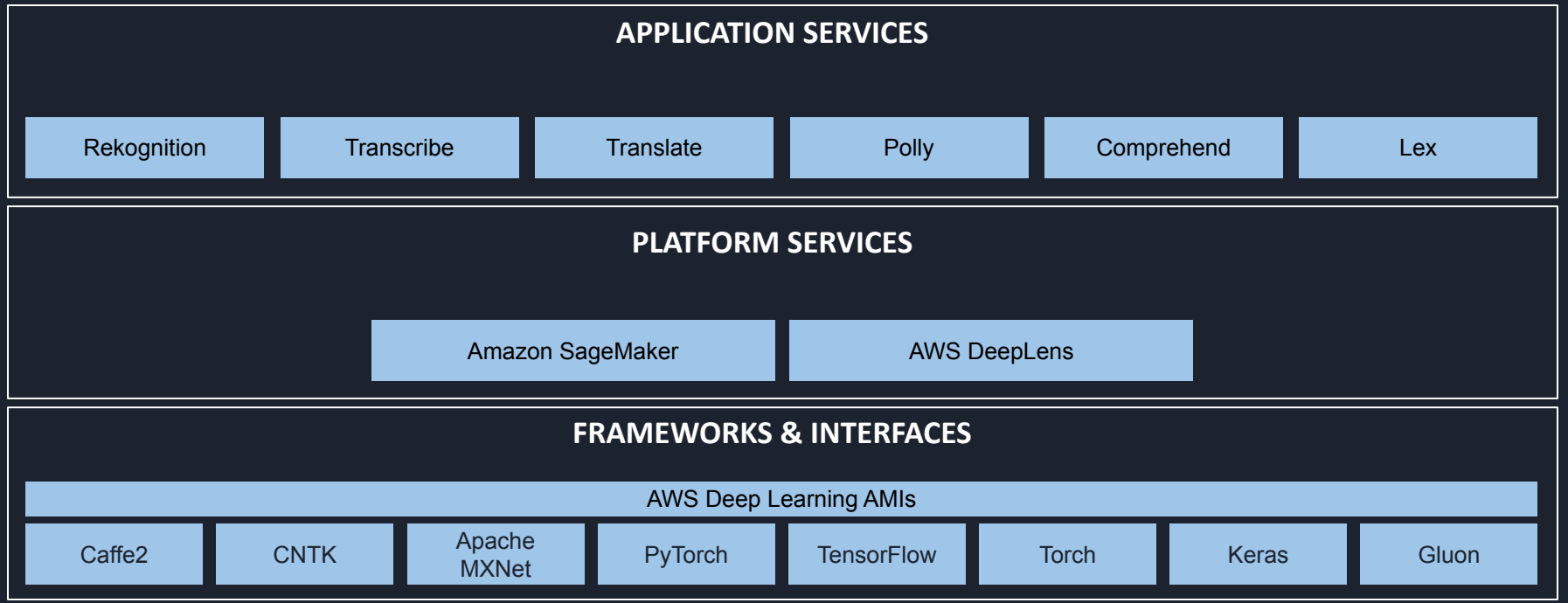
NLP
Natural Language Processing

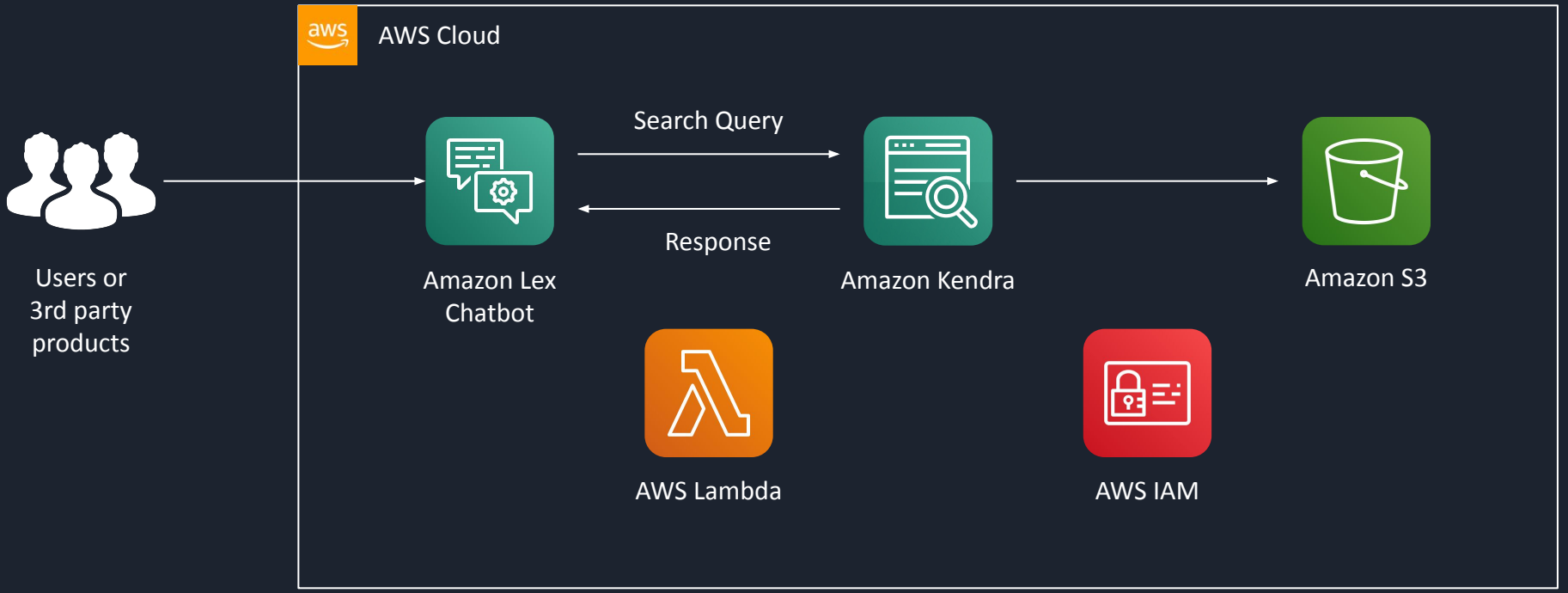


ASR
Automatic Speech Recognition

Amazon Lex

The Amazon Machine Learning Stack





reference link

Amazon Lex - Features

Text and speech language understanding: powered by the same technology as Alexa

Deployment to chat services

Designed for builders: efficient and intuitive tools to build conversations + scales automatically

Versioning and alias support

Enterprise SaaS connectors: connect to enterprise systems

reference link

Amazon lex - Use Cases

Informational Bots
Chatbots for everyday consumer requests

- News updates
- Weather Information
- Game Scores

Application Bots
Build powerful interfaces to mobile applications

- Book tickets
- Order food
- Manage bank account

Enterprise Productivity Bots
Streamline enterprise work activities and improve efficiencies

- Check sales numbers
- Marketing performance
- Inventory Status

Internet of Things (IoT) Bots
Enable conversational interfaces for device interactions

- Wearables
- Appliances
- Auto

Benefits of Amazon Lex

- Easy to use console that makes the whole process seamless
- Minimal inputs required from your side as it has a natural language model.
- Deploy your chatbots directly from Amazon Lex console.
- Seamless integration with a wide range of applications and platforms.
- Minimal human intervention required post deployment.
- Fully managed service scalable as per requirements.
- Easy integration with numerous AWS platforms.
- Flexible to be used for any business function that you require.
- Cost effective solution for bot development.
- Pay what you use” minimized initial investment requirements.

How Amazon Lex Works?

How does Amazon Lex Operate?

Chatbot receives user input. It can reply with answers, perform actionsor ask for more inputs.

- Amazon DynamoDB
- Amazon SNS
- Amazon SES
- Other AWS Services

Chatbot triggers AWS Lambda. Lambda function performs necessary action by integrating with other AWS Services

How Amazon Lex Operates?

Typical steps that you follow when working with Amazon Lex:

1. Create a chatbot & configure it with intents, slots & utterances

2. Test the bot on text window slide provided by Lex Console

3. Publish a version and create an alias

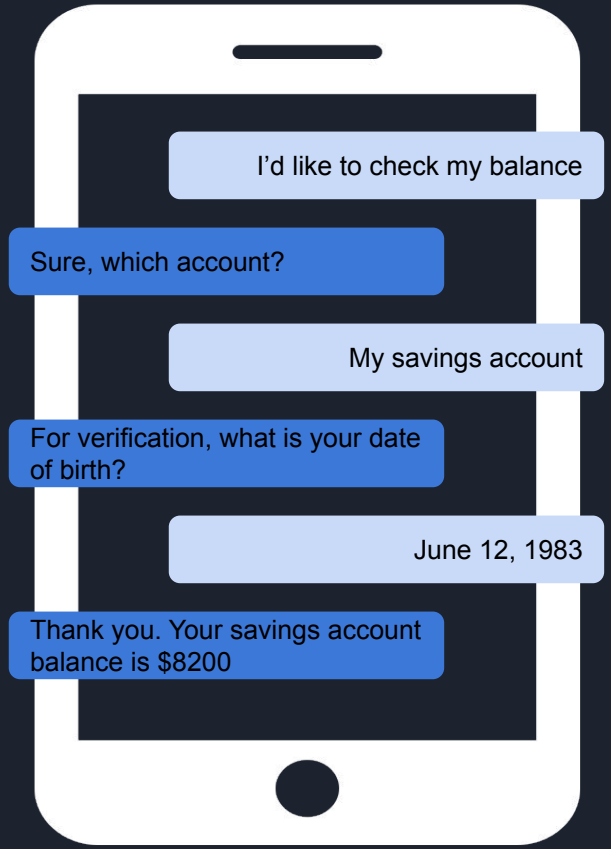
4. Deploy the bot on a sustainable platform

Key Concepts

Core Concepts & Terminologies

Amazon Bot	A artificial intelligence program that simulates interactive conversation
Intent	An intent represents an action that the user wants to perform
	Name **Utterances** **Intent Fulfill**
Slots	Slots are parameters that an intent might require
Slot Types	Every slot has a type. Can create built-in or custom slot types

Make Payment



Intent: An action that a user wants performed

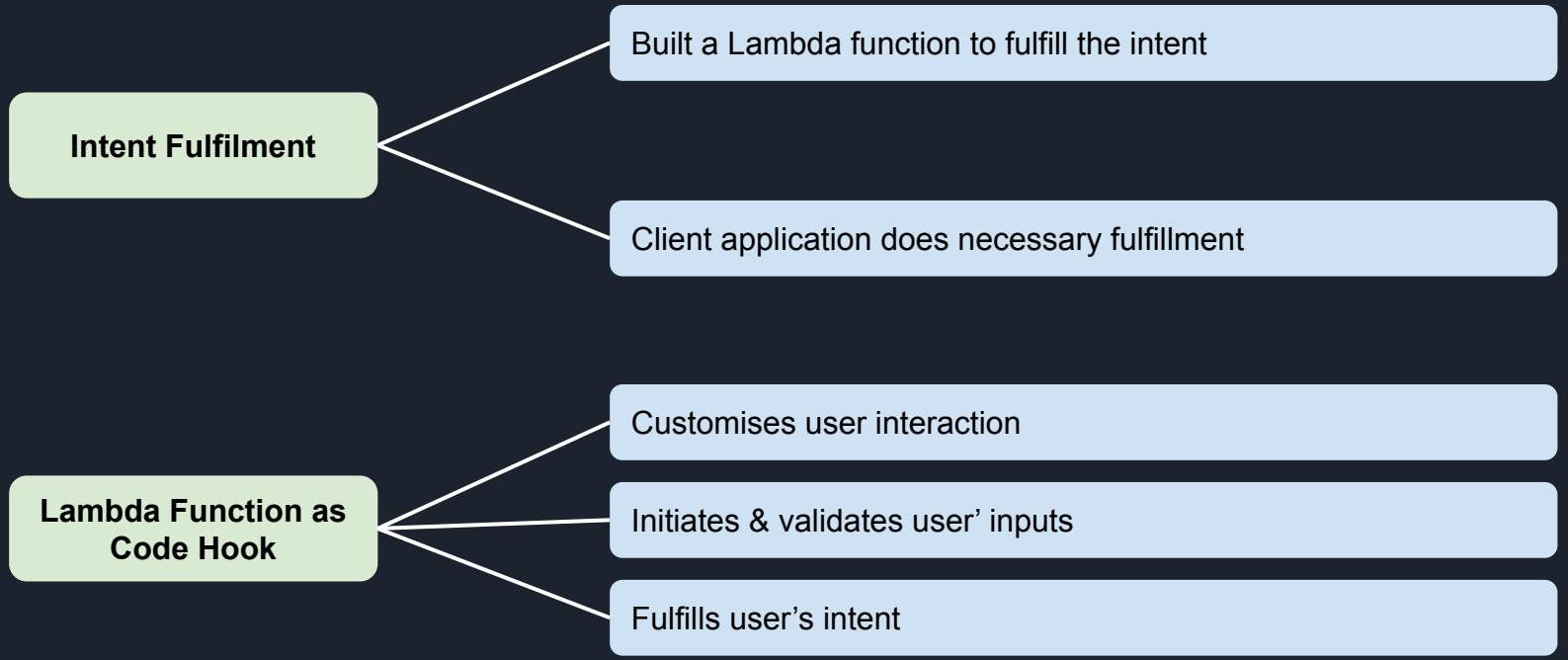
Utterance: User input that triggers an intent

Prompt: Bot message designed to get data needed to complete the requested action

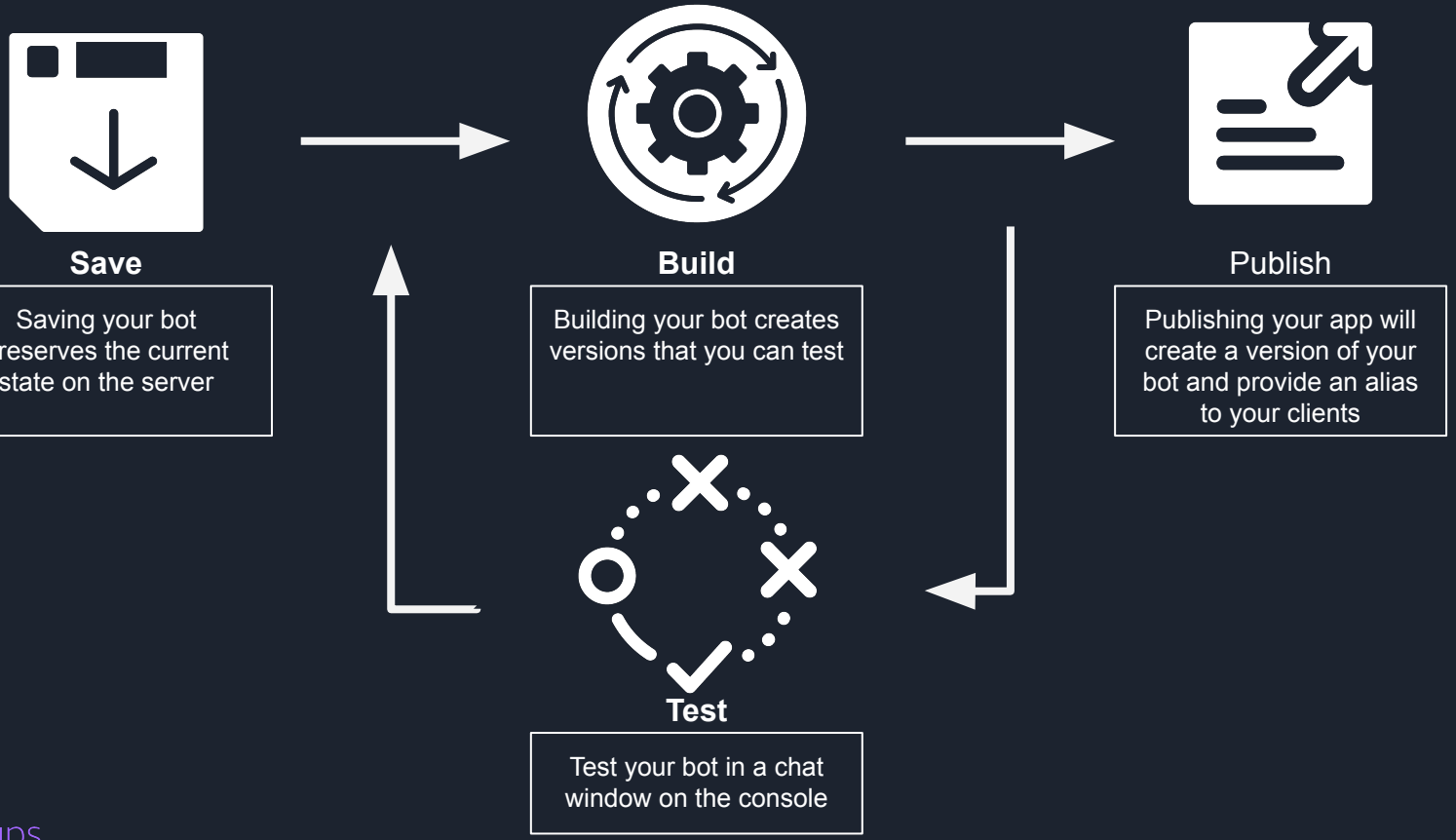
Slot: Input data that is needed to complete the requested action

Fulfillment: Completed action based on the user's request

Core Concepts & Terminologies



Save, Build and Publish

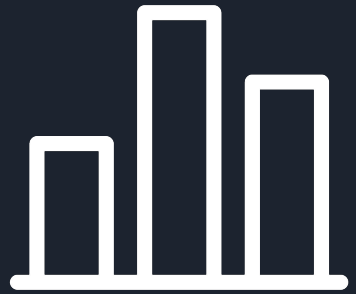


Monitoring

Track your bot

Missed Utterance Count

Request Latency



Traffic by Channel

Demo

Lex Demo

1. Boot Name - booking_a_table
2. Intent Name - reserve_a_table
3. Define custom slot type (hotel_name) with values - Taj, Aura, WareHouse, VegTreat
4. Define slots
    a. bookingdate - AMAZON.DATE - On what date you want me to book a table?
    b. bookingtime - AMAZON.TIME - At what time you want me to book a table?
    c. numberofpeople - AMAZON.NUMBER - How many people will join you?
    d. restaurantname - hotel_name - In which hotel you want to book?
5. Confirmation prompt
    a. Check Confirmation prompt
    b. Confirm - Are you sure you want to book a table at {restaurantname} for {bookingdate} at {bookingtime}?
    c. Cancel (if the user says "no") - Your reservation will cancelled. Thank you!