Amazon Lex and Robo Advisors

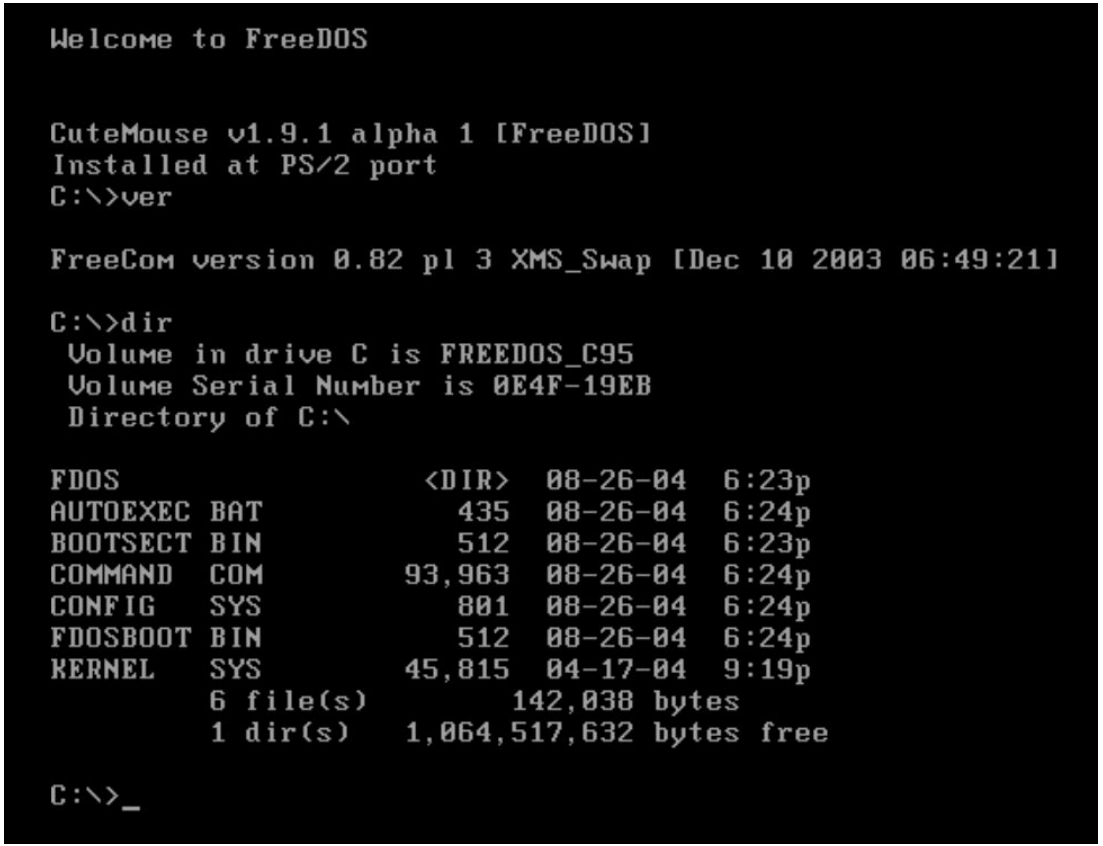
FinTech

Lesson 13.3

Conversational User Interfaces (CUIs) and Robo Advisors

Conversational User Interfaces (CUIs) and Robo Advisors

In the early years of computing, interfaces were text-based and people used commands to interact with computers.



(Source)

Conversational User Interfaces (CUIs) and Robo Advisors

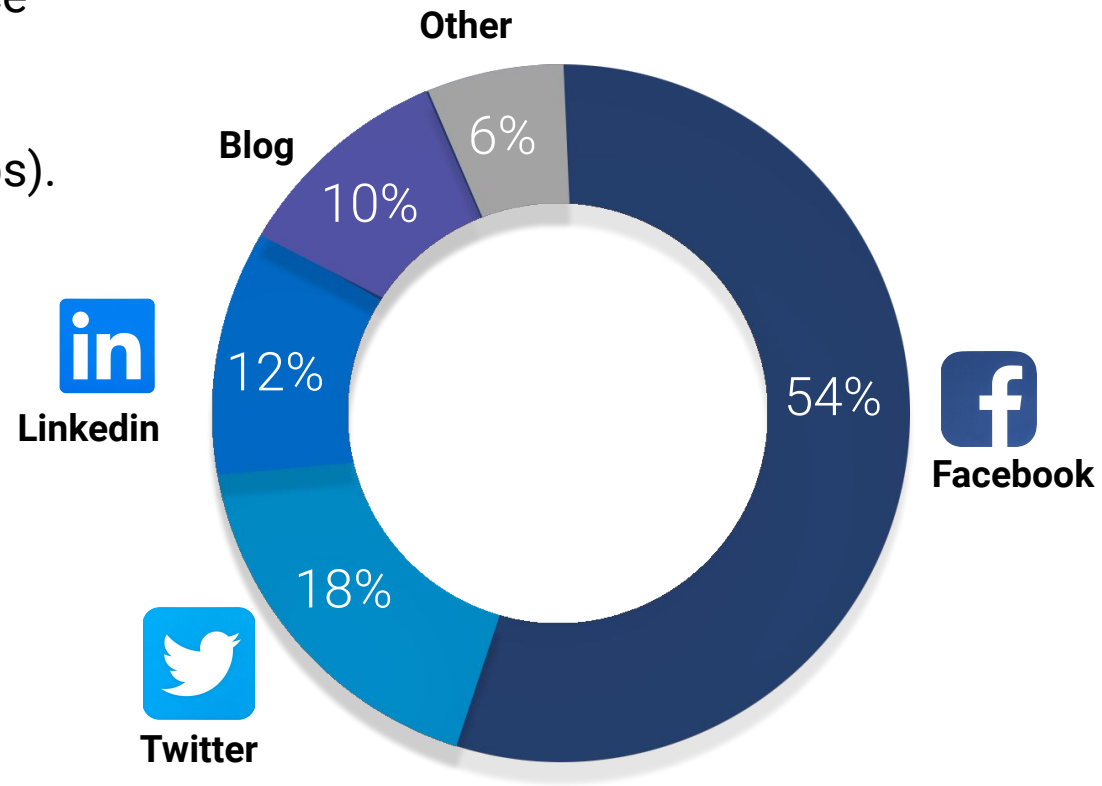
Thanks to natural language processing (NLP), we can create conversational user interfaces (CUIs) that allow computers to understand, analyze, and have meaningful conversations using human language.

Chatbots
are the most common application of CUIs.

CUIs and Robo Advisors

CUIs and Robo Advisors enhance customer engagement by using digital communication channels (social media or messaging apps).

Social media channels consumers are using to contact their banking providers



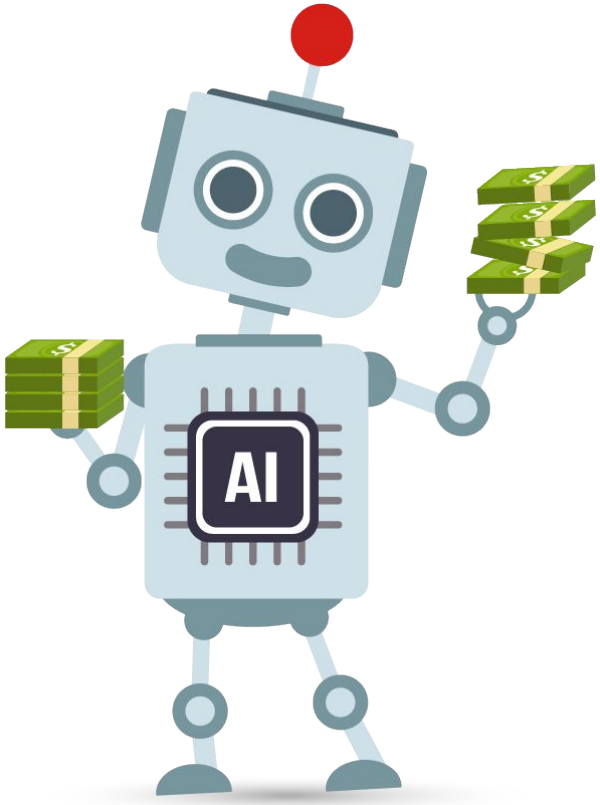
Robo Advisors:
Chatbots disrupting finance and banking

Chatbots Disrupting Finance and Banking

According to Juniper Research, banks will save about

8 billion USD

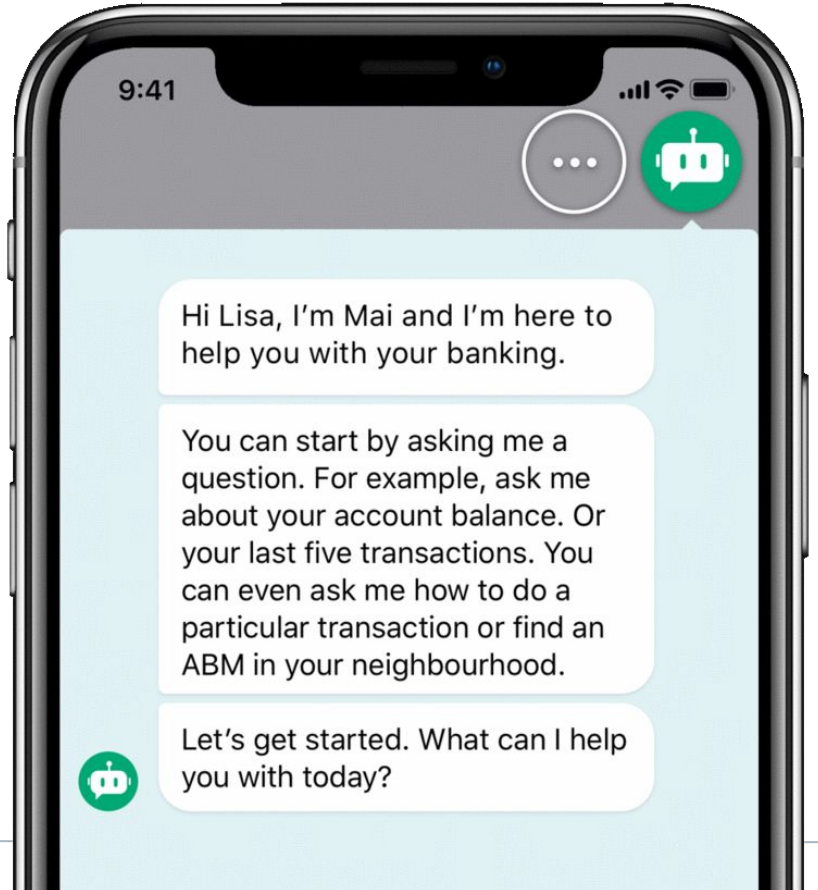
annually by 2020 thanks to chatbot use.



(Juniper Research)

Chatbots Disrupting Finance and Banking

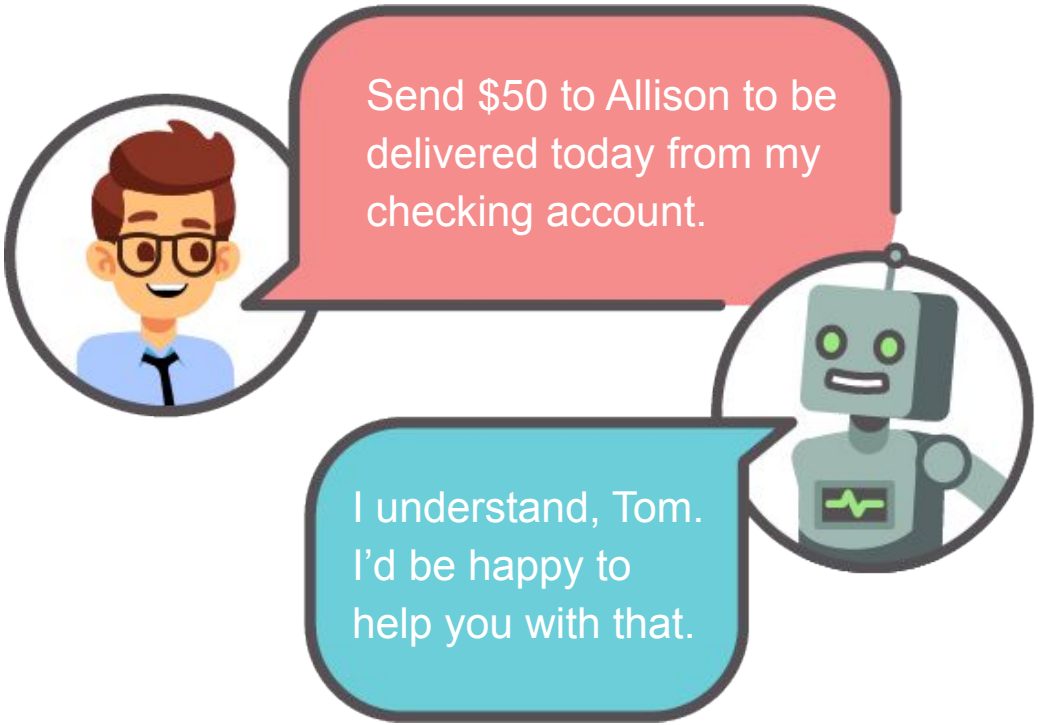
Chatbots can perform tasks 24/7. Customers don't need to wait for replies.



(Source)

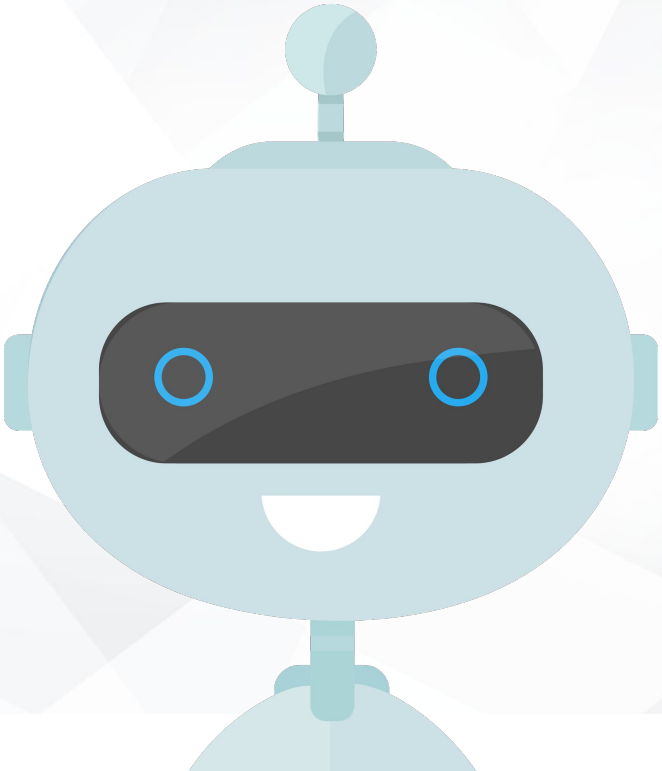
Chatbots Disrupting Finance and Banking

Chatbots understand how customers speak.
You can respond more adequately to customer needs.



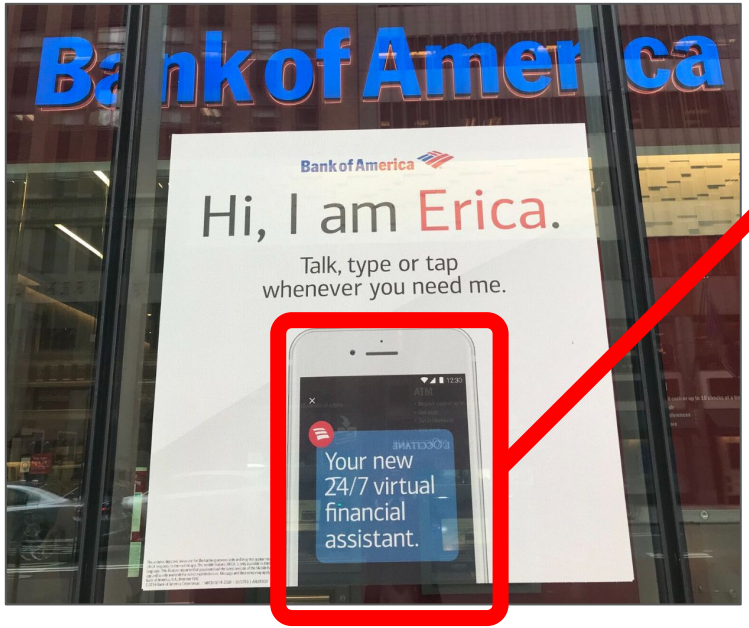
(Juniper Research) (Mastercard makes commerce more conversational)

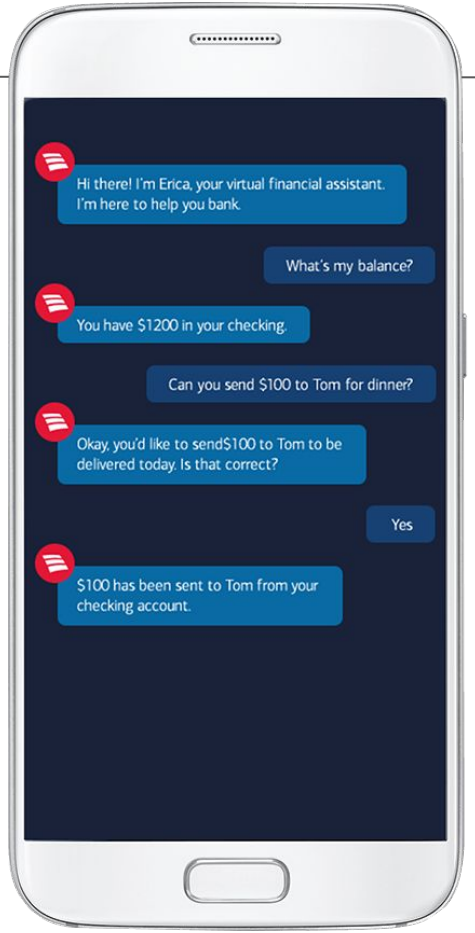
Chatbot Use Cases



Chatbot Use Cases

Erica from Bank of America



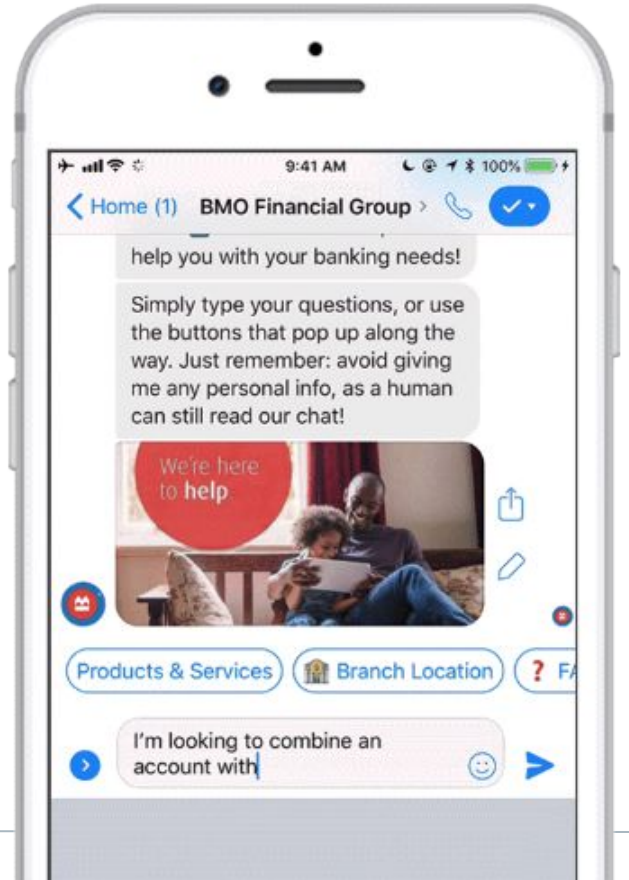


(Source)

Chatbot Use Cases

BMO Bolt™ from

BMO Bank of Montreal

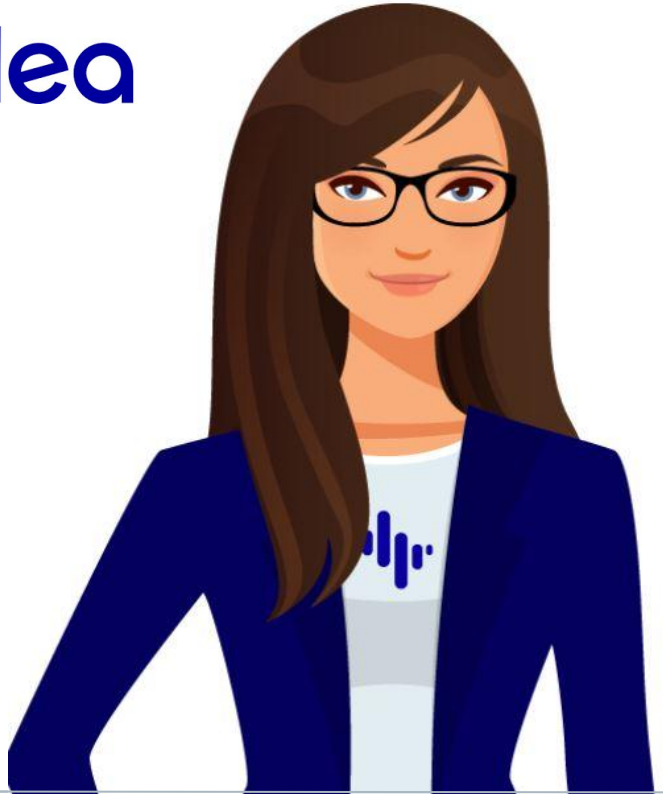


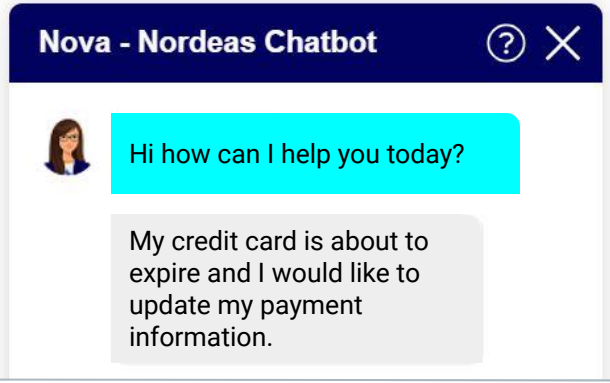
(Source)

Chatbot Use Cases

NOVA from

Nordea



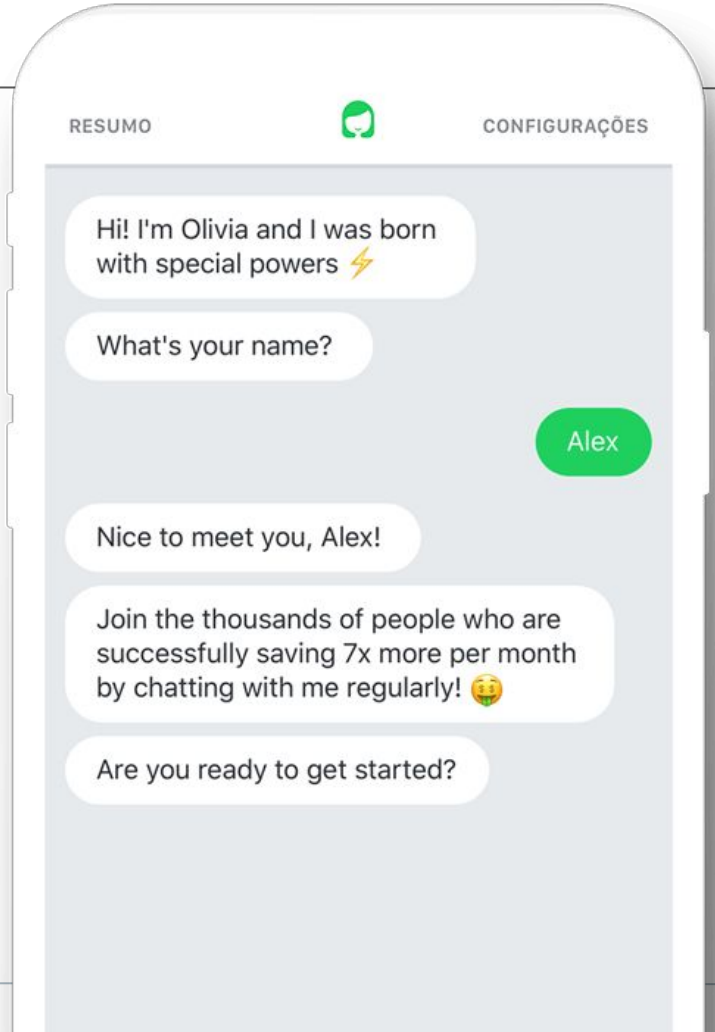


(Source)

Chatbot Use Cases

Olivia

AI-powered financial assistant



(Source)

Let’s Create a Robo Advisor!

Amazon
Lex

Amazon
Lambda

Intro to Amazon Lex

What Is Amazon Lex?

Amazon Lex is an AWS service for building CUIs into any application using voice and text.

Provides the same deep learning technologies that power Amazon Alexa.

Uses automatic speech recognition to convert speech to text and natural language understanding to recognize the intent of the text.

Lets you build applications with engaging user experiences and human-like conversations.

Allows integration with third-party applications, AWS services, and your own code via Amazon Lambda.

How to Use Amazon Lex

Follow these steps to build an application:

01 Create a bot and configure it so it can understand user's goals/intent.

02 Test the bot on the Amazon Lex console. Make sure it engages in conversation with the user.

03 Publish the bot and create an alias.

04 Deploy the bot on a mobile application or a messaging platform such as Slack, Kik, or Facebook Messenger.

Amazon Lex

Amazon Lex Jargon

Bot

It's the core component of Amazon Lex. A bot performs automated tasks such as booking a hotel, making a wire transfer, or suggesting an investment portfolio.

Intent

Represents an action that the user wants to perform such as BookHotel, TransferMoney, or SuggestPortfolio. A bot can have more than one intent.

Utterances

Speech or text phrases that trigger the intent.

Slots

A piece of data that is necessary for the chatbot to fulfill the user's intent. Think of it as required user input.

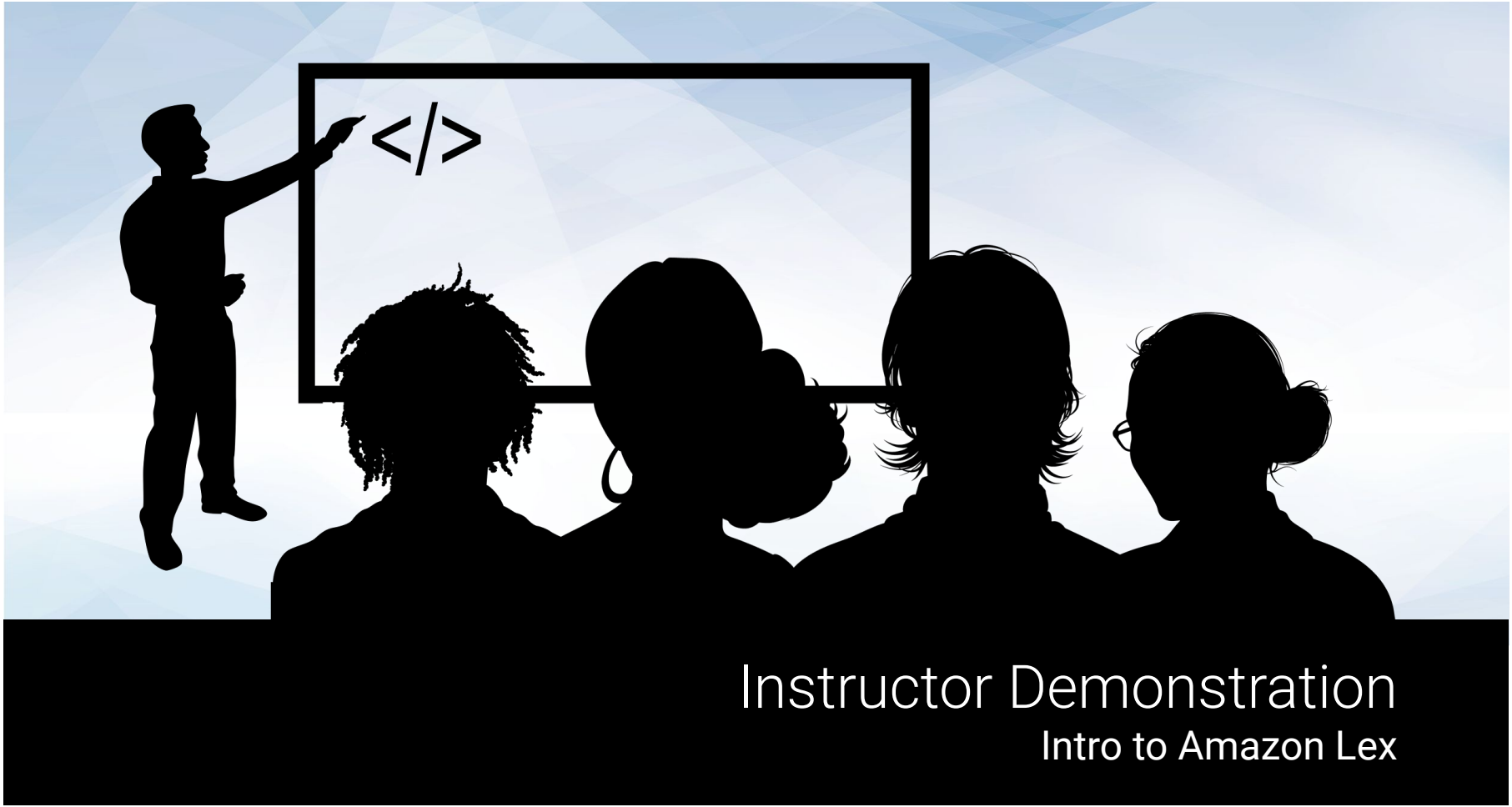
Fulfillment

When the chatbot has collected all the slot values, then it proceeds with the logic in the fulfillment section. This is where an AWS lambda function can be used if you need some business logic.

AWS Supported Regions

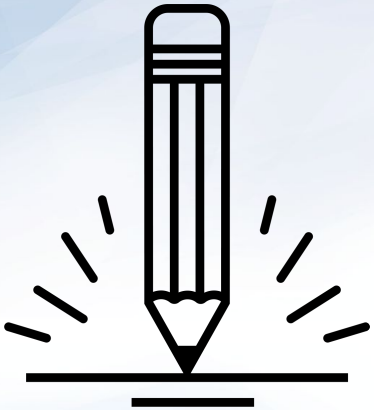
You can only use Amazon Lex from these regions:

- Asia Pacific (Sydney)
- EU (Ireland)
- US East (N. Virginia)
- US West (Oregon)



Instructor Demonstration

Intro to Amazon Lex



Activity:

Simple Crypto Conversation

In this activity, you will create a bot that converts US Dollars to bitcoin BTC, ethereum ETH, or ripple XRP.

Suggested Time:
15 Minutes

Time’s Up! Let’s Review.

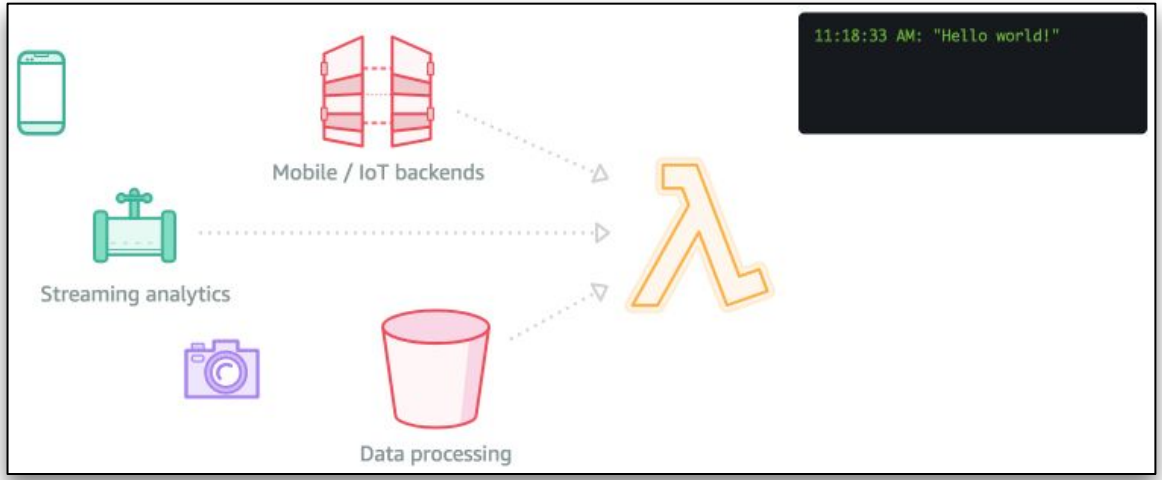
Intro to AWS Lambda

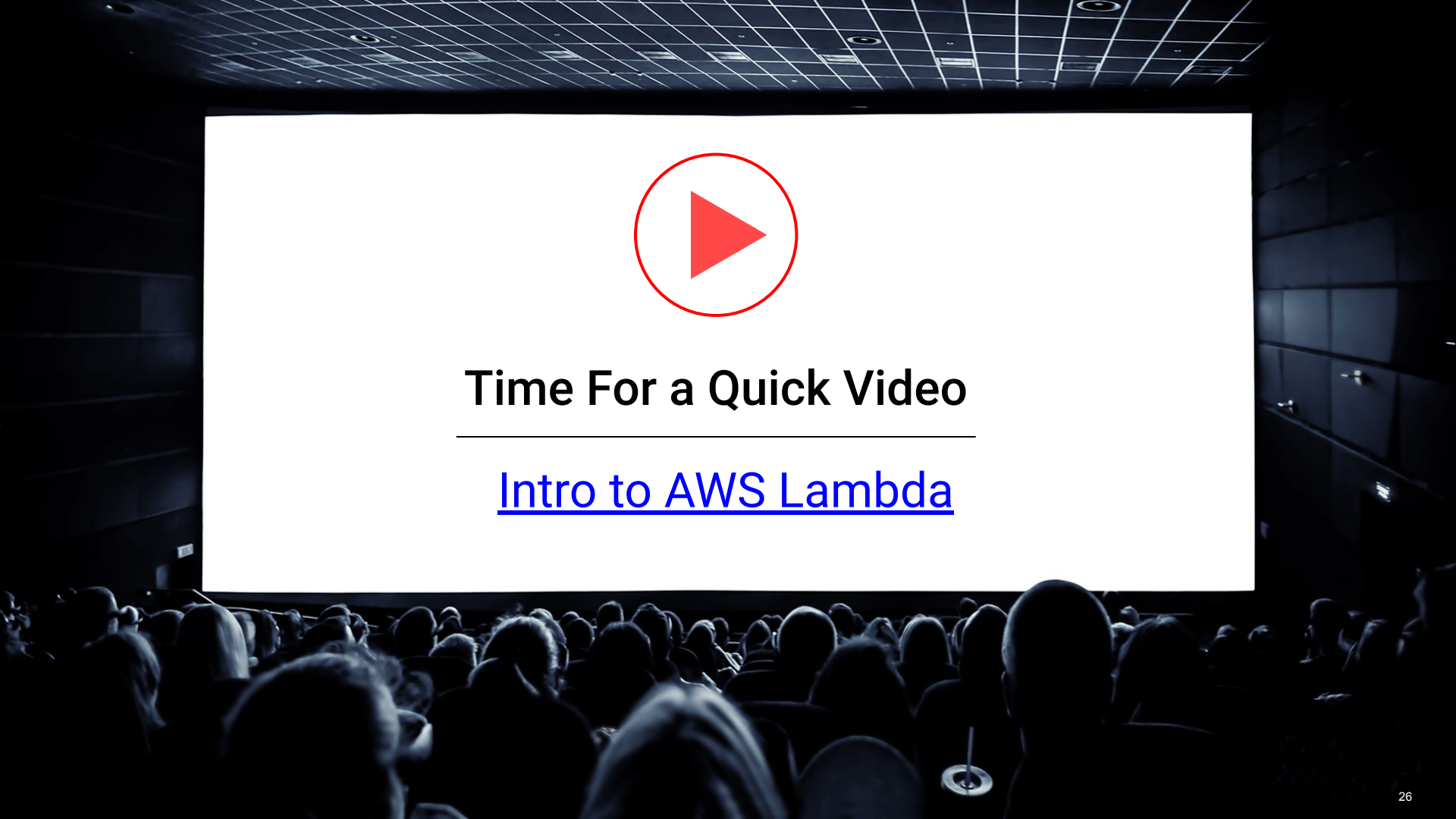
Intro to AWS Lambda

What's AWS Lambda?

It's a technology that executes code remotely without provisioning or managing servers.

Just upload your code and Lambda takes care of everything, you can have your code automatically trigger from other AWS services
or call it directly from any web or mobile app.





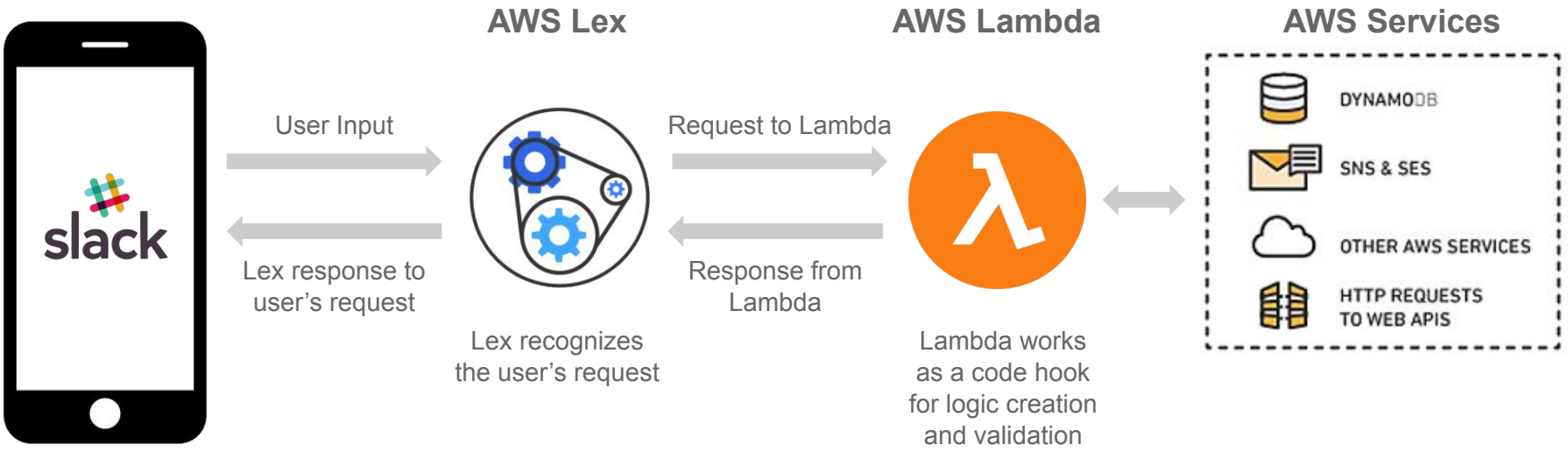
Time For a Quick Video

Intro to AWS Lambda

Intro to AWS Lambda

How AWS Lambda boosts chatbots

AWS Lambda enhances chatbots by combining the NLP capabilities of Amazon Lex with the possibility of running code to fulfill user's requests. For example, booking a hotel room, making a wire transfer, or providing financial advice about an investment portfolio.



How Lex and Lambda talk

ElicitSlot

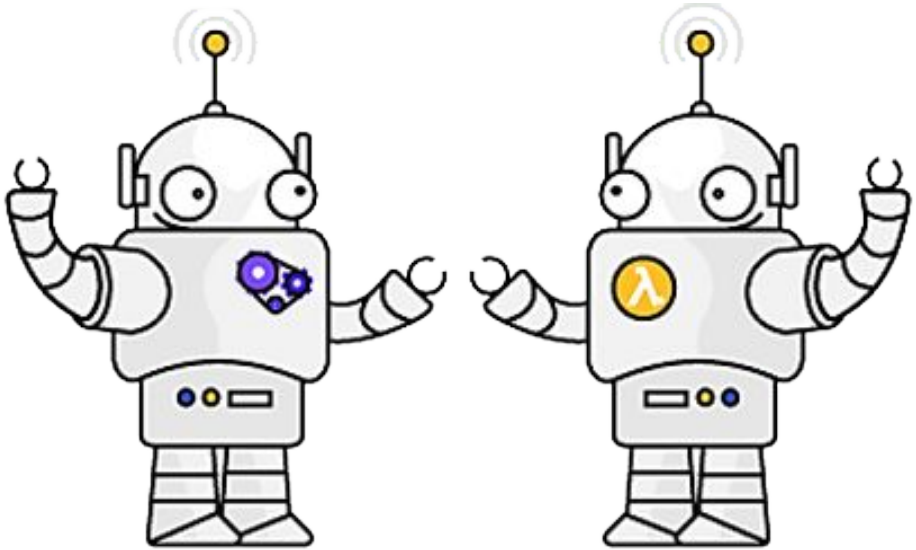
Informs Amazon Lex that the user is expected to provide a slot value in the response.

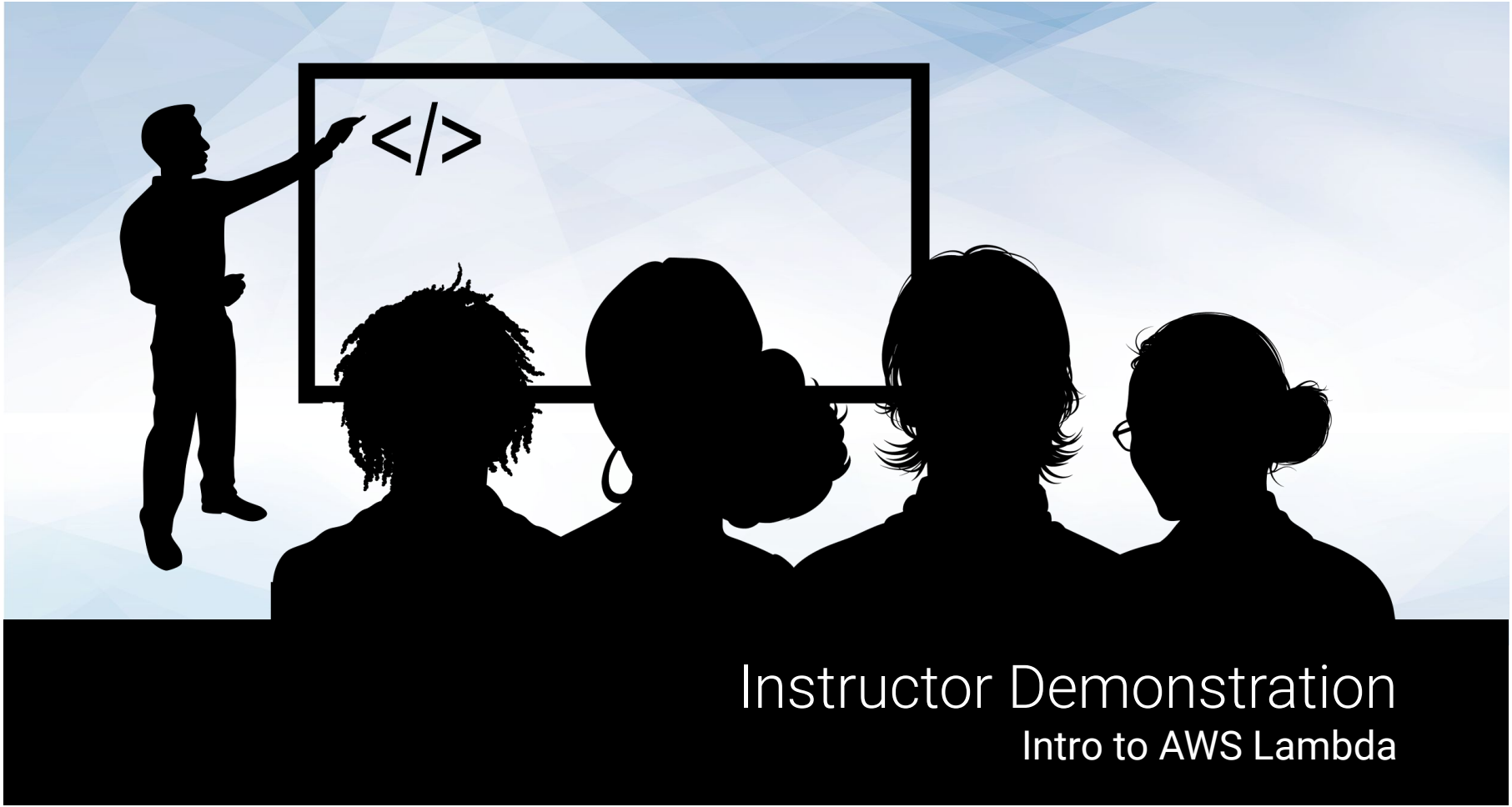
Delegate

Directs Amazon Lex to choose the next course of action based on the bot configuration.

Close

Informs Amazon Lex not to expect a response from the user.

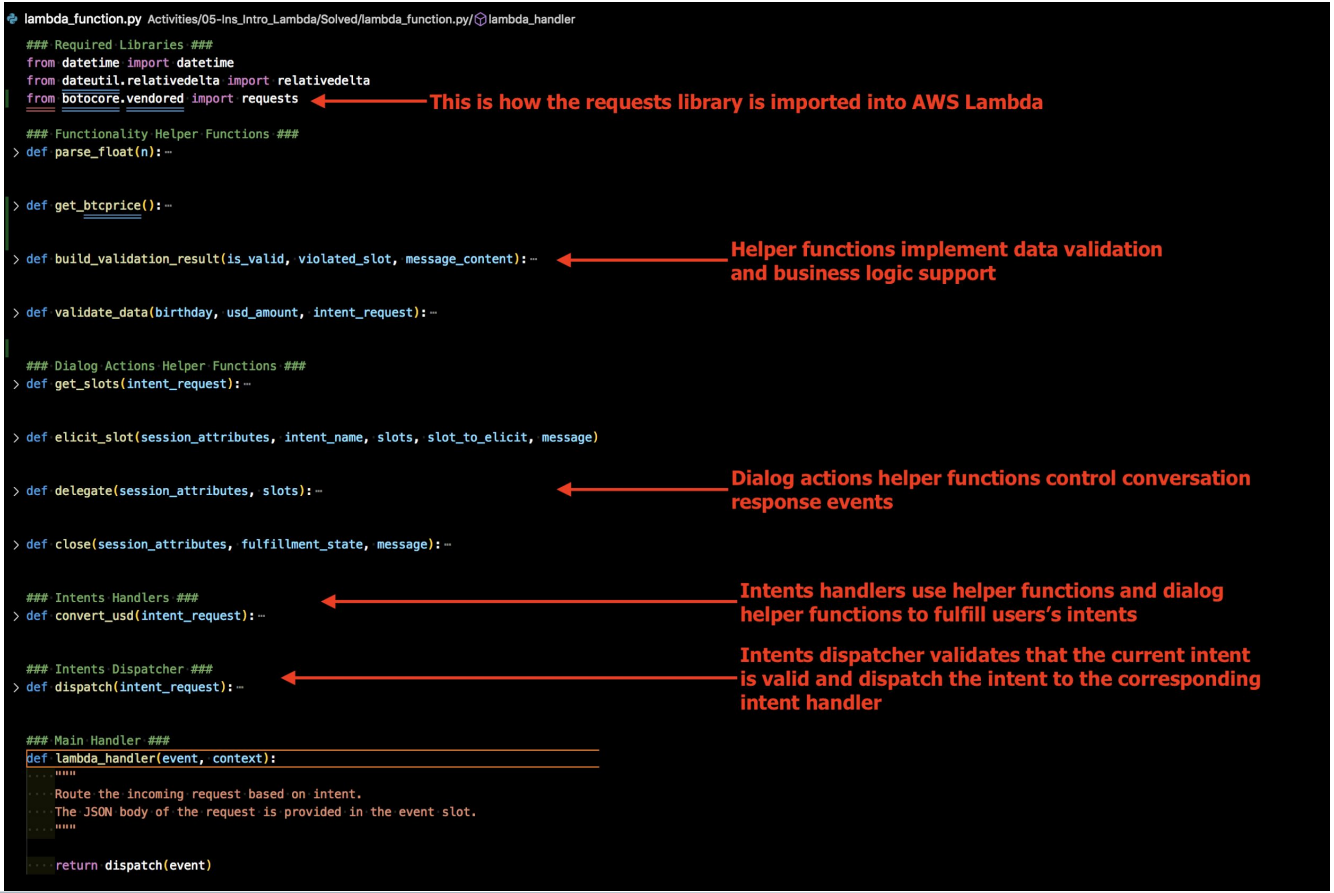


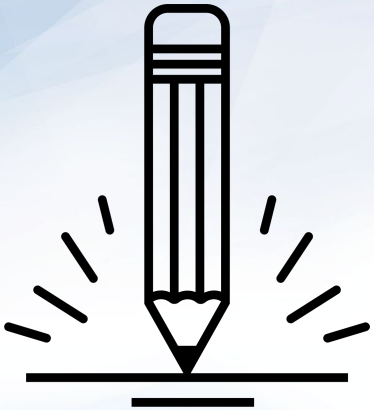


Instructor Demonstration

Intro to AWS Lambda

Anatomy of a Lambda Function for Amazon Lex





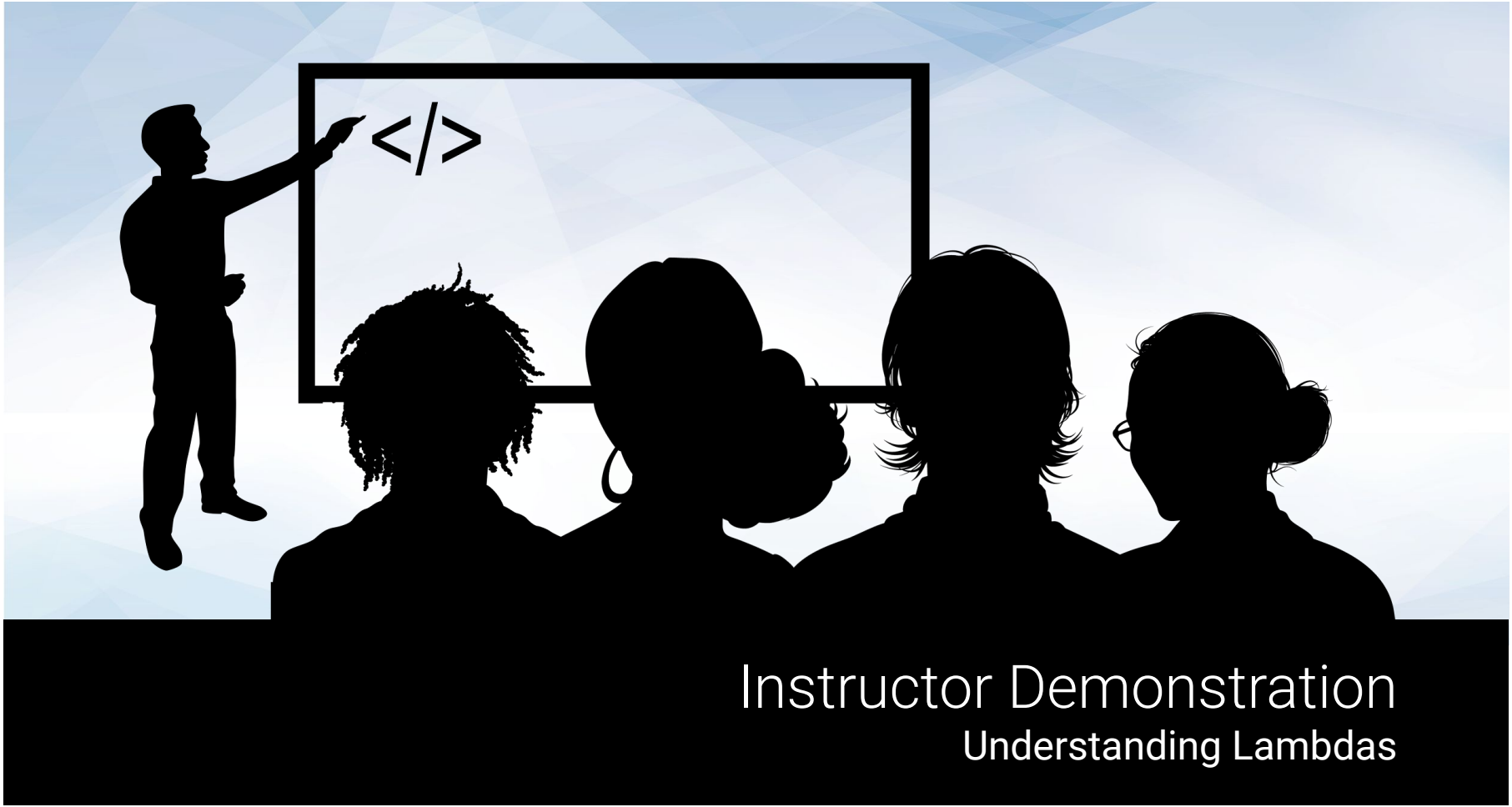
Activity:

Intro to AWS Lambda

In this activity, you will learn how to integrate Lambda functions into an Amazon Lex bot.

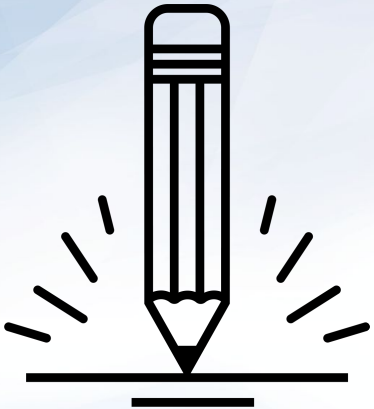
Suggested Time:
10 Minutes

Time’s Up! Let’s Review.



Instructor Demonstration

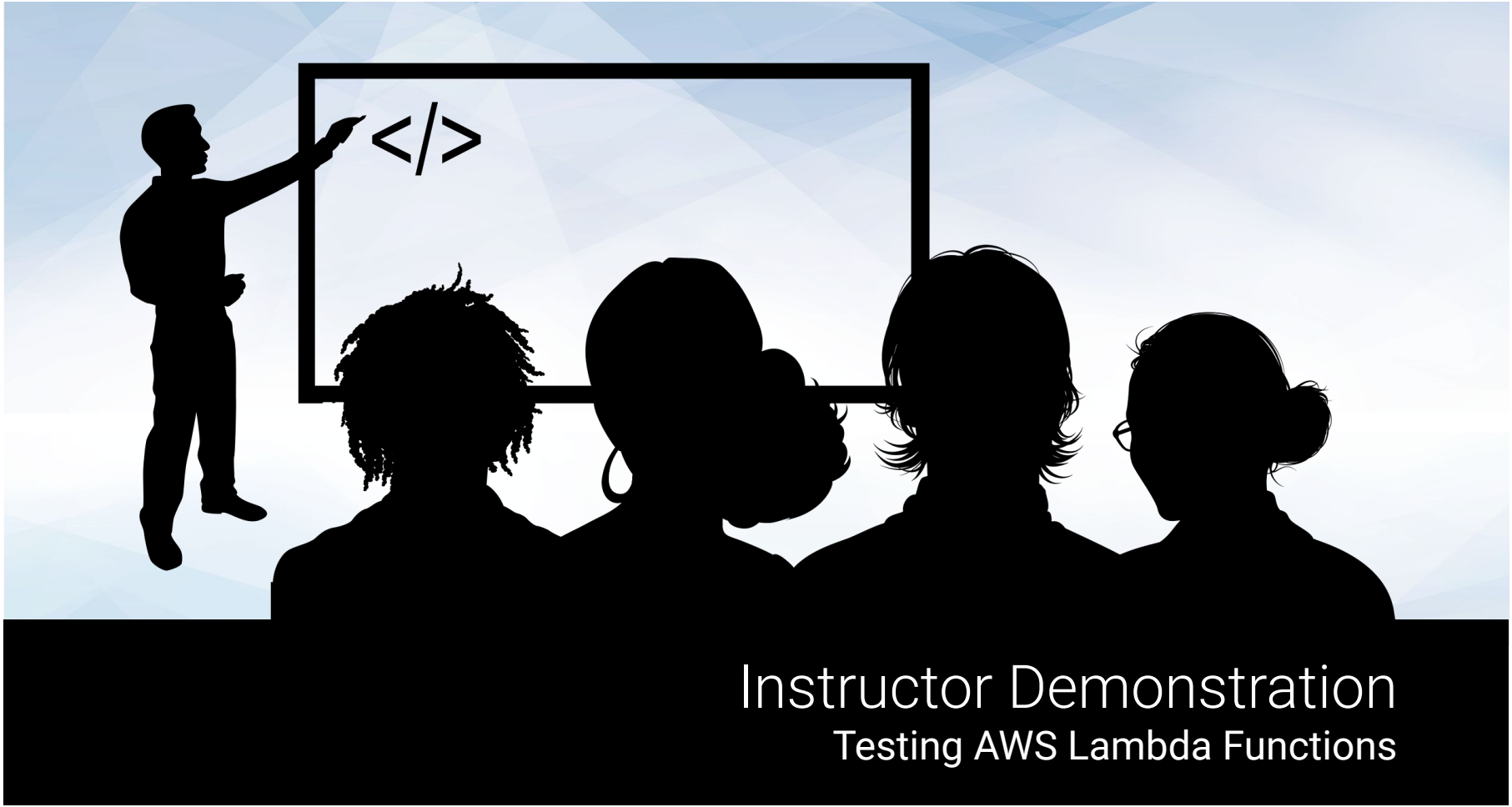
Understanding Lambdas



Activity:
Understanding Lambdas

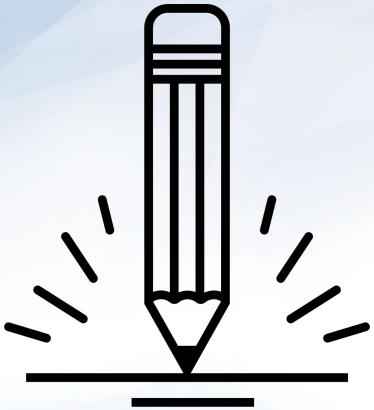
Suggested Time:
15 Minutes

Time’s Up! Let’s Review.



Instructor Demonstration

Testing AWS Lambda Functions



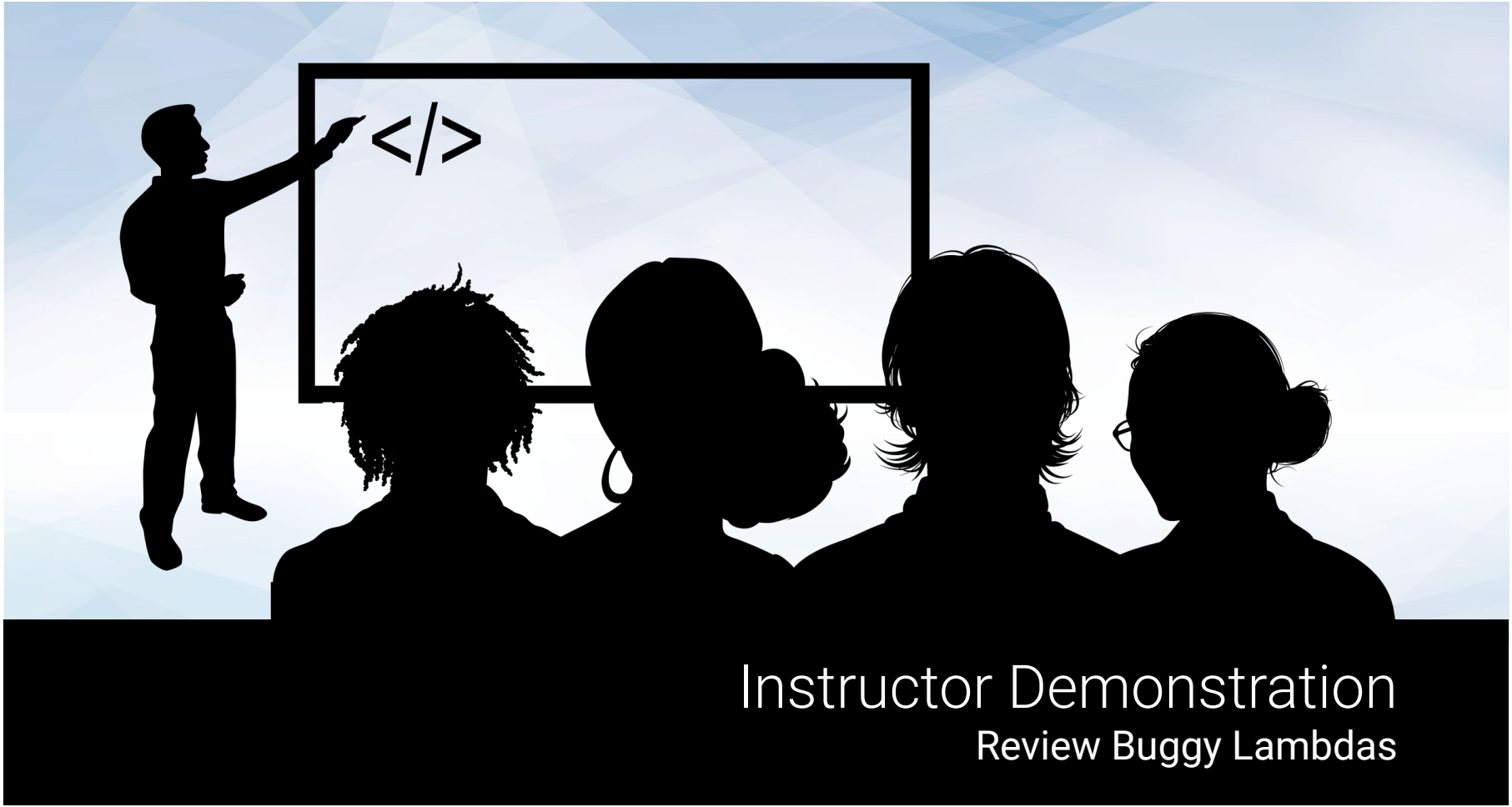
Activity:

Testing AWS Lambda Functions

In this activity, you will test AWS Lambda functions that validate Amazon Lex intents.

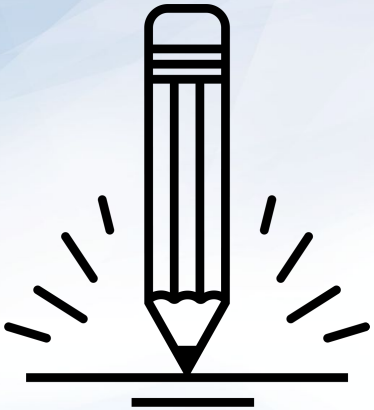
Suggested Time:
10 Minutes

Time’s Up! Let’s Review.



Instructor Demonstration

Review Buggy Lambdas



Activity:

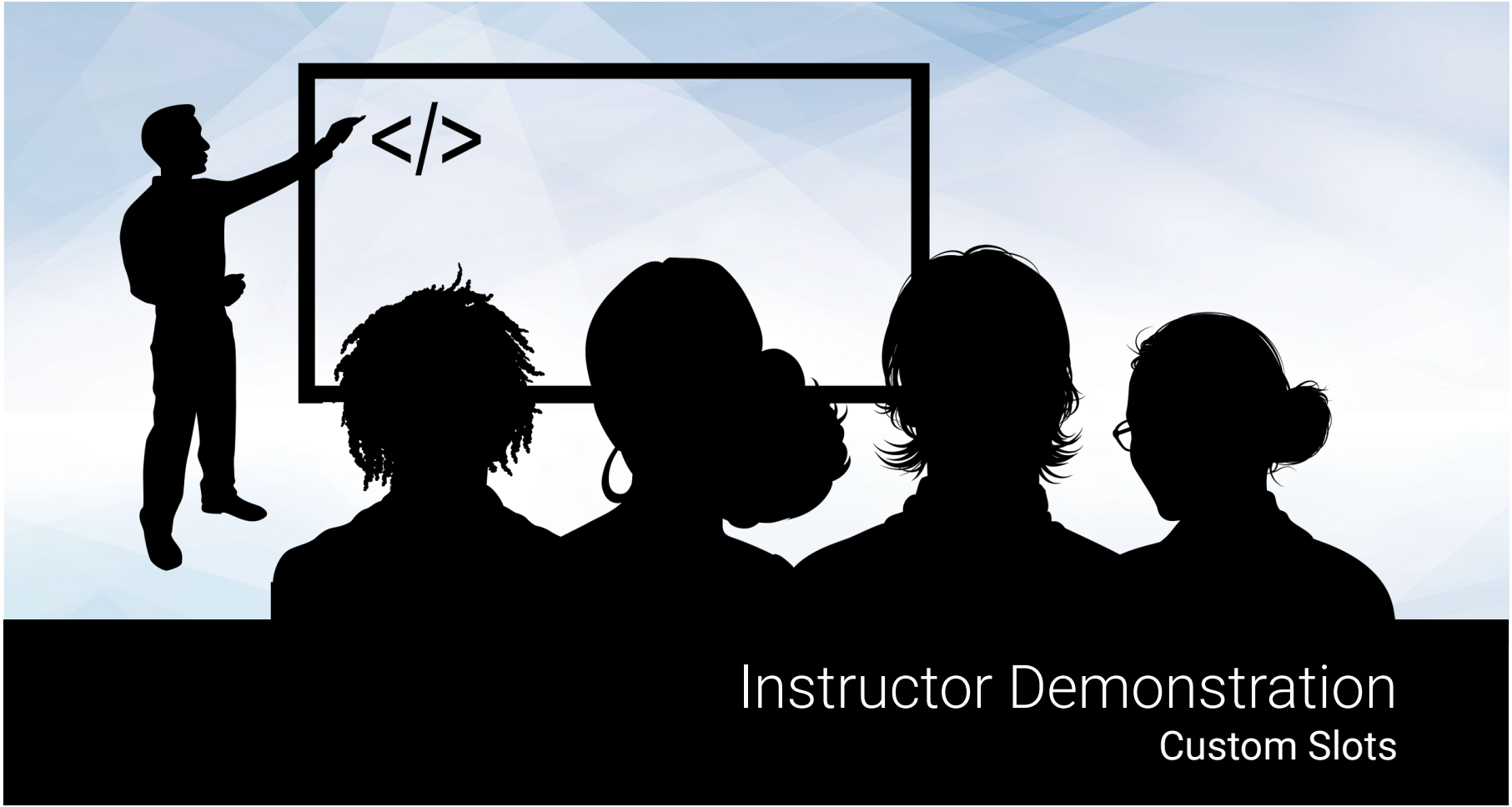
Review Buggy Lambdas

In this activity, you will test Lambdas and find runtime errors.

Suggested Time:
10 Minutes

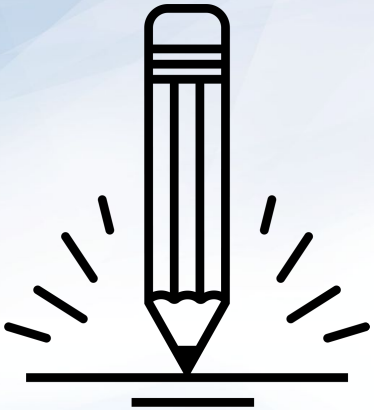
Time’s Up! Let’s Review.


Break



Instructor Demonstration

Custom Slots



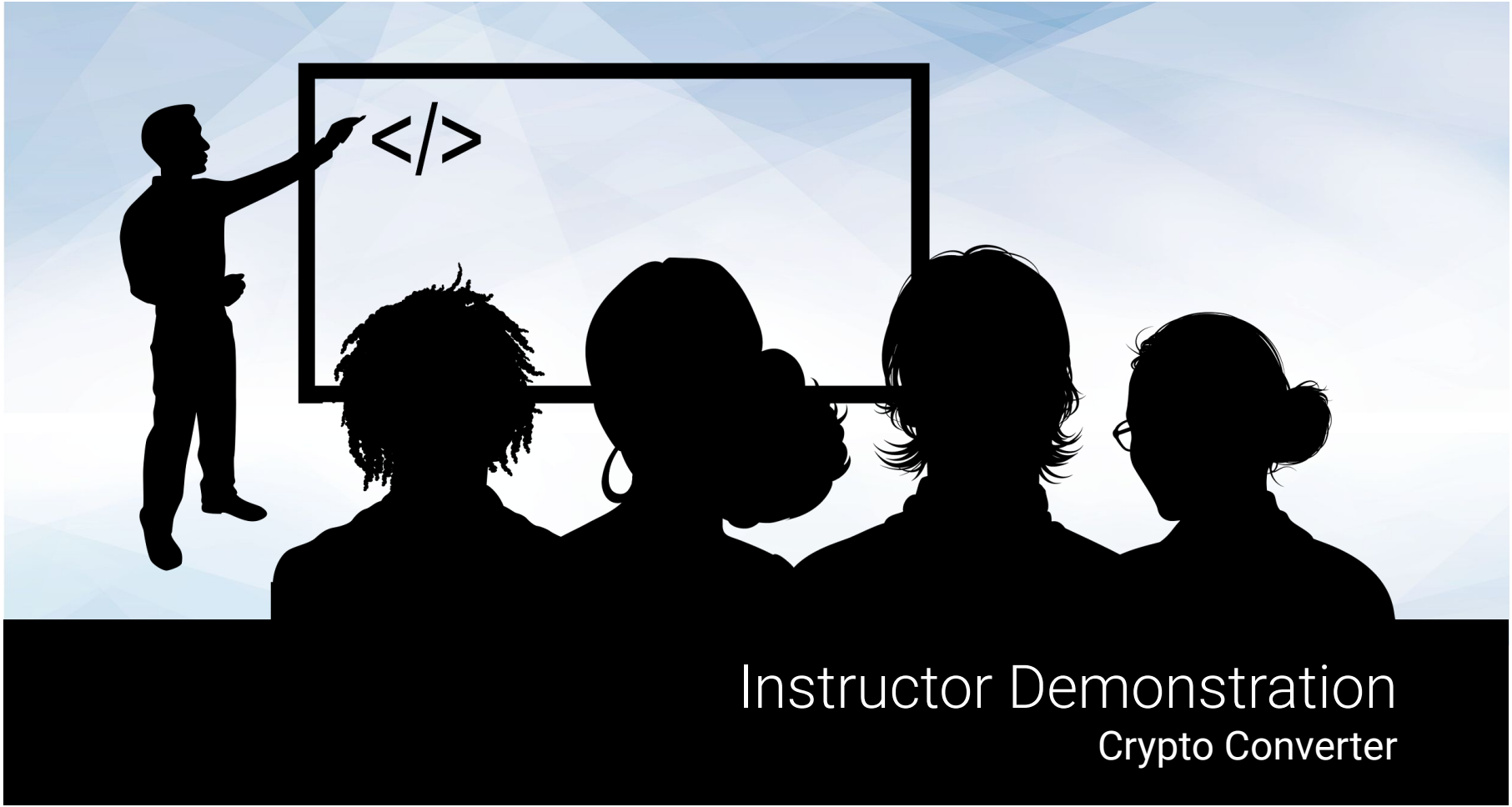
Activity:

Custom Slots

In this activity, you will create a custom slot and add it to an Amazon Lex bot intent.

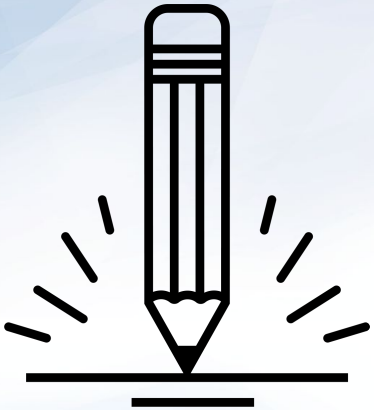
Suggested Time:
10 Minutes

Time’s Up! Let’s Review.



Instructor Demonstration

Crypto Converter



Activity:

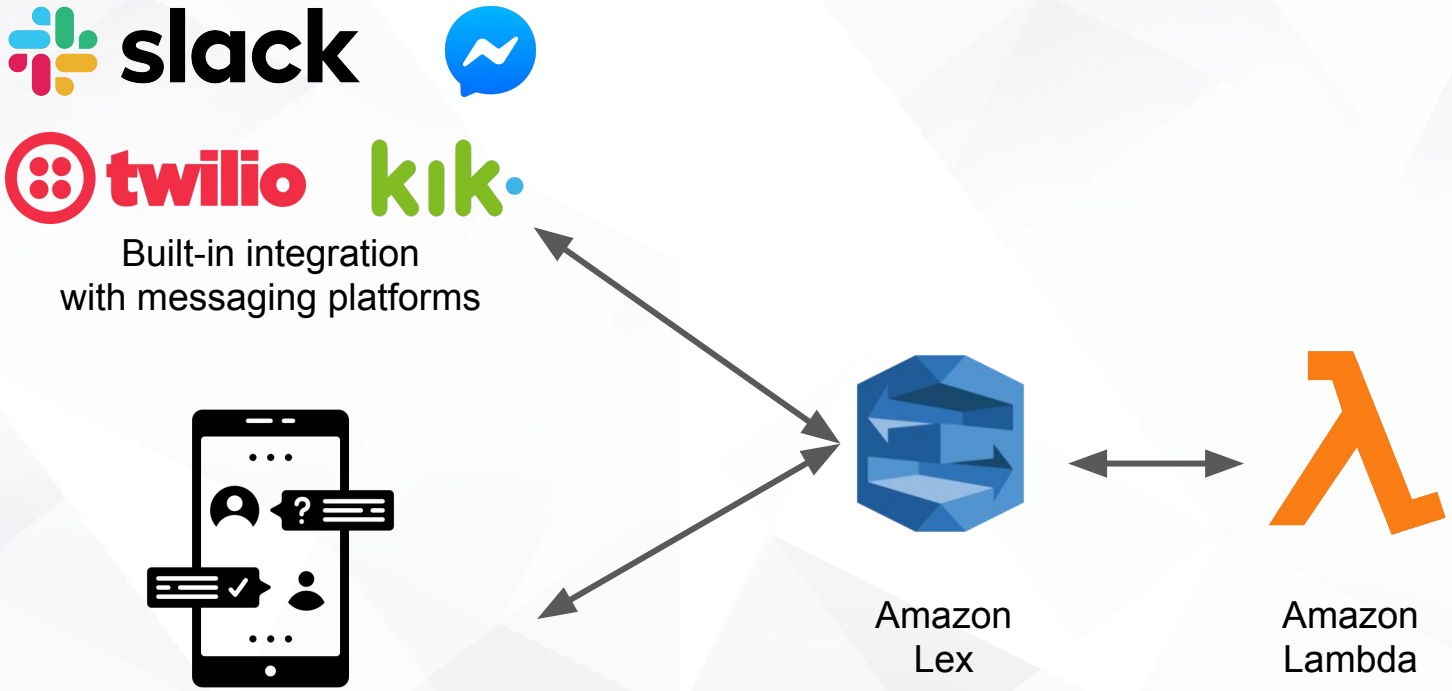
Crypto Converter

In this activity, you will extend your cryptocurrency converter by adding a custom slot to allow users to convert US dollars to bitcoin, Ethereum, or Ripple.

Suggested Time:
20 Minutes

Time’s Up! Let’s Review.

Deploying Amazon Lex Bots



Learn more at: Developing Amazon Lex Bots Guide


The End