

Conversing with Multi-turn Dialogs

Overview

Slots in utterances

Conversations with multi-turn dialogs

Prompts and the dialog model

Build a Stock Tracker Dialog skill

Having a Conversation with Alexa



Hey Alexa, please open stock tracker

Welcome



Invocation complete and
the right skill identified

Having a Conversation with Alexa



I'm interested in Amazon

Opening, closing, high or low price?

Opening price

What day do you want this for?

October 5, 2017

Amazon was at \$950 on
October 5, 2017



Having a Conversation with Alexa



I'm interested in Amazon

Opening, closing, high or low price?

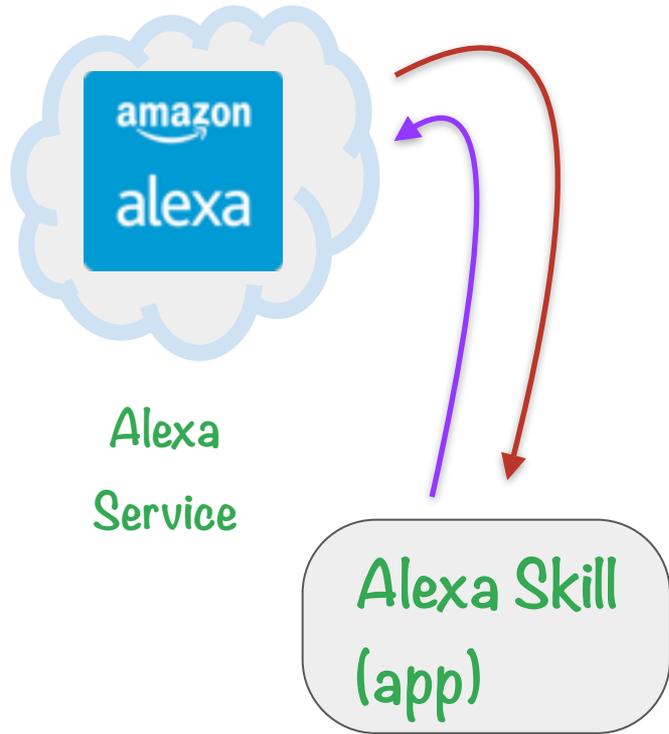
Opening price

What day do you want this for?

October 5, 2017

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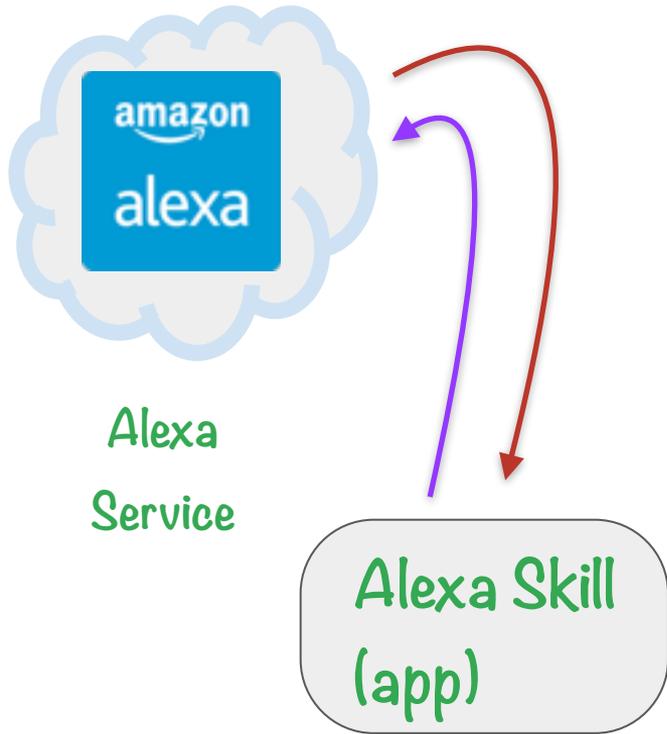


Important Questions

Which skill did the user mean to invoke?

What was the intent of the speaker?

What information, if any, did the speaker wish to pass to the skill?



Important Answers

Which skill did the user mean to invoke?

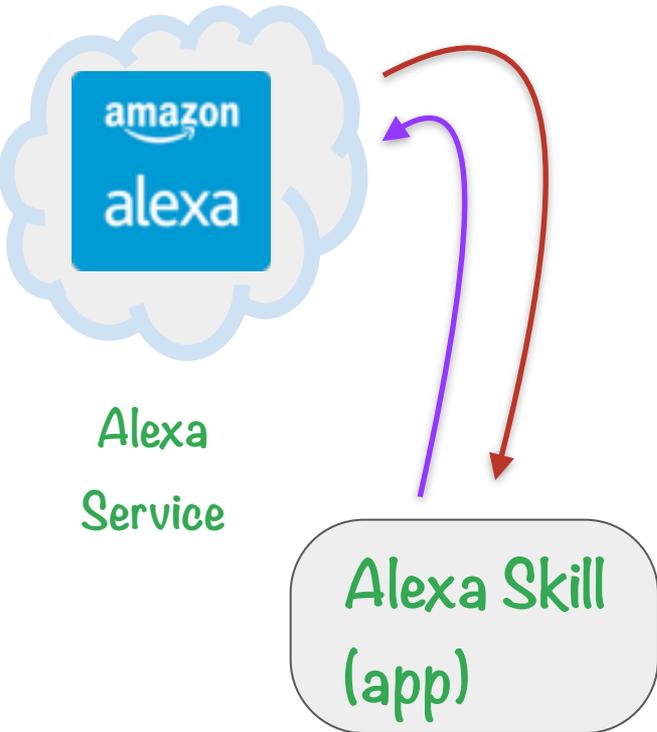
- Determined by skill **invocations**

What was the intent of the speaker?

- Determined by **intents** specified by skill developer

What information, if any, did the speaker wish to pass to the skill?

- **Alexa allows skill developer to specify slots - parameters that will be passed into the intents**



Important Answers

Invocations

Intents

Slots

“Hey Alexa, what is the opening price of Amazon today?”

Slots are embedded into Utterances

Slots are similar to **arguments** that need to be passed into **functions**

The function here is the intent handling code

“Hey Alexa, what is the opening price of **Amazon** today?”

Slot #1: Stock name

Question: What is the stock price of _____ today?

Answer: Amazon

“Hey Alexa, what is the opening price of Amazon **today**?”

Slot #2: Time period

Question: What is the stock price of Amazon _____?

Answer: Today

“Hey Alexa, what is the **opening price** of Amazon today?”

Slot #3: Price type

Question: What is the _____ of Amazon today?

Answer: Opening price

Slots and the Dialog Model

Fill in the Blanks



Stock interested in? _____

Price type? _____

Date? _____



Fill in the Blanks



Stock interested in? _____

Price type? _____

Date? _____

Amazon, Google, IBM, VMWare, Microsoft

LIST_OF_STOCKS



Fill in the Blanks



Stock interested in? _____

Price type? _____

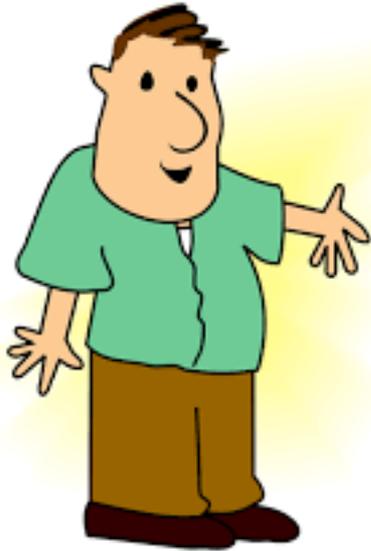
Date? _____

Opening, Closing, High, Low

LIST_OF_PRICETYPE



Fill in the Blanks



Stock interested in? _____

Price type? _____

Date? _____

Any date in the last 20 years

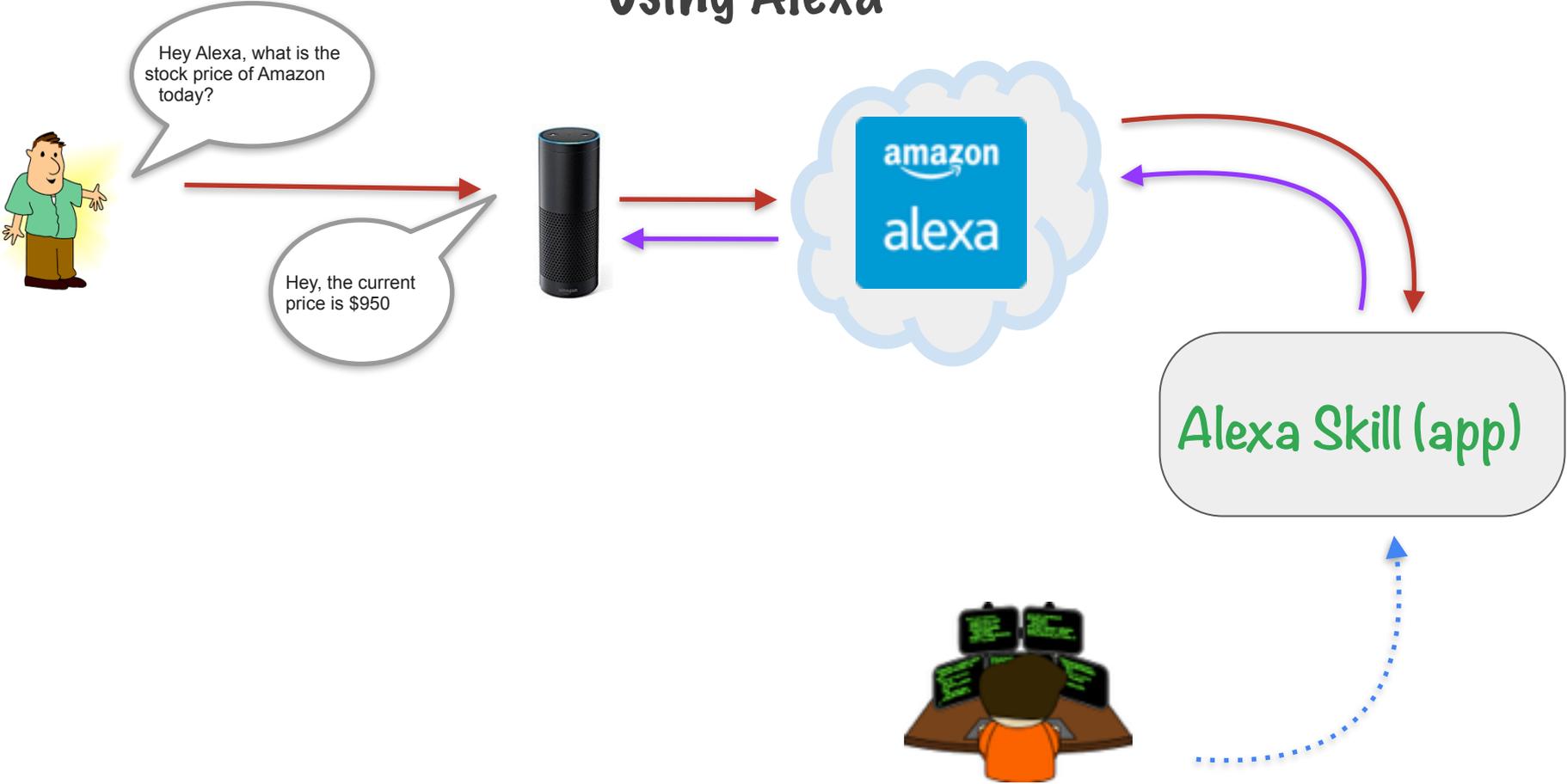
AMAZON.Date



Dialog

A free-flowing conversation in which Alexa keeps asking questions until it has values for slots that are required by the intent

Using Alexa





Hey Alexa, what is the stock price of Amazon today?

User



Hey, the current price is \$950

Alexa-
enabled device

Dialogs

Here the skill needs three slots (parameters) before it can send back a response

- Slot #1: The stock (Amazon)
- Slot #2: The date (today)
- Slot #3: The type of price information (opening/closing)

If the speaker does not provide these right away, a dialog ensues...

Dialog



I'm interested in Amazon

Opening, closing, high or low price?

Opening price

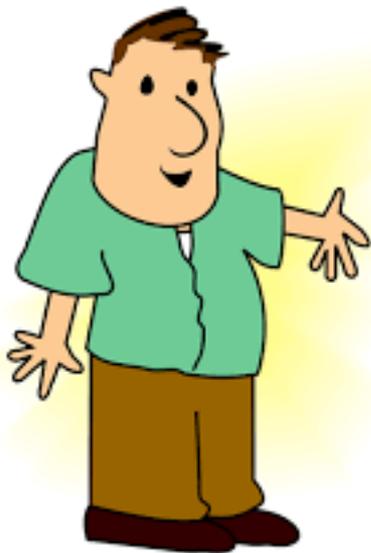
What day do you want this for?

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Prompts



I'm interested in Amazon

Opening, closing, high or low price?

Opening price

What day do you want this for?

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Utterances in Response to Prompts



I'm interested in Amazon

Opening, closing, high or low price?

Opening price

What day do you want this for?

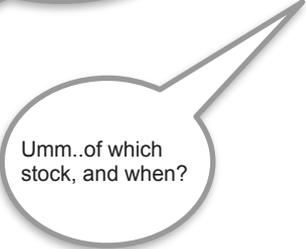
October 5, 2017

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Hey Alexa, what is the stock price?



Umm..of which stock, and when?



The stock is Amazon



For when please?



Today



Hey, the current price is \$950

Dialogs

The ASK (Alexa Skills Kit) offers ways for the app-developer to specify such dialog templates

Dialogs are defined using a dialog model

Dialog Model

SLOT

LIST_OF_STOCKS

LIST_OF_PRICETYPE

STOCK_DATE

VALUES

GOOGLE
AMAZON
VMWARE
MICROSOFT
IBM

opening
closing
minimum
maximum

AMAZON.DATE

PROMPT

What stock would you
like information about?

Would you like opening,
closing, minimum or
maximum price?

What date would you like
this for?

UTTERANCE

{StockName}
Tell me about {StockName}
Give me information on {StockName}

{PriceType}
{PriceType} price
I would like {PriceType} price

{StockDay}
I would like this for {StockDay}

Demo

Using the Intrinio backed platform

<https://intrinio.com/>

Demo

Build a skill which can hold a conversation with the user

Retrieves the specified price type of a specified stock on a specified day