Build, Deploy and Monitor A Chatbot

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Amazon Web Services

STAR WARS CHATBOT

Docker Captain

Java Champion

JavaOne Rock Star (4 years)

NetBeans Dream Team

Silicon Valley JUG Leader

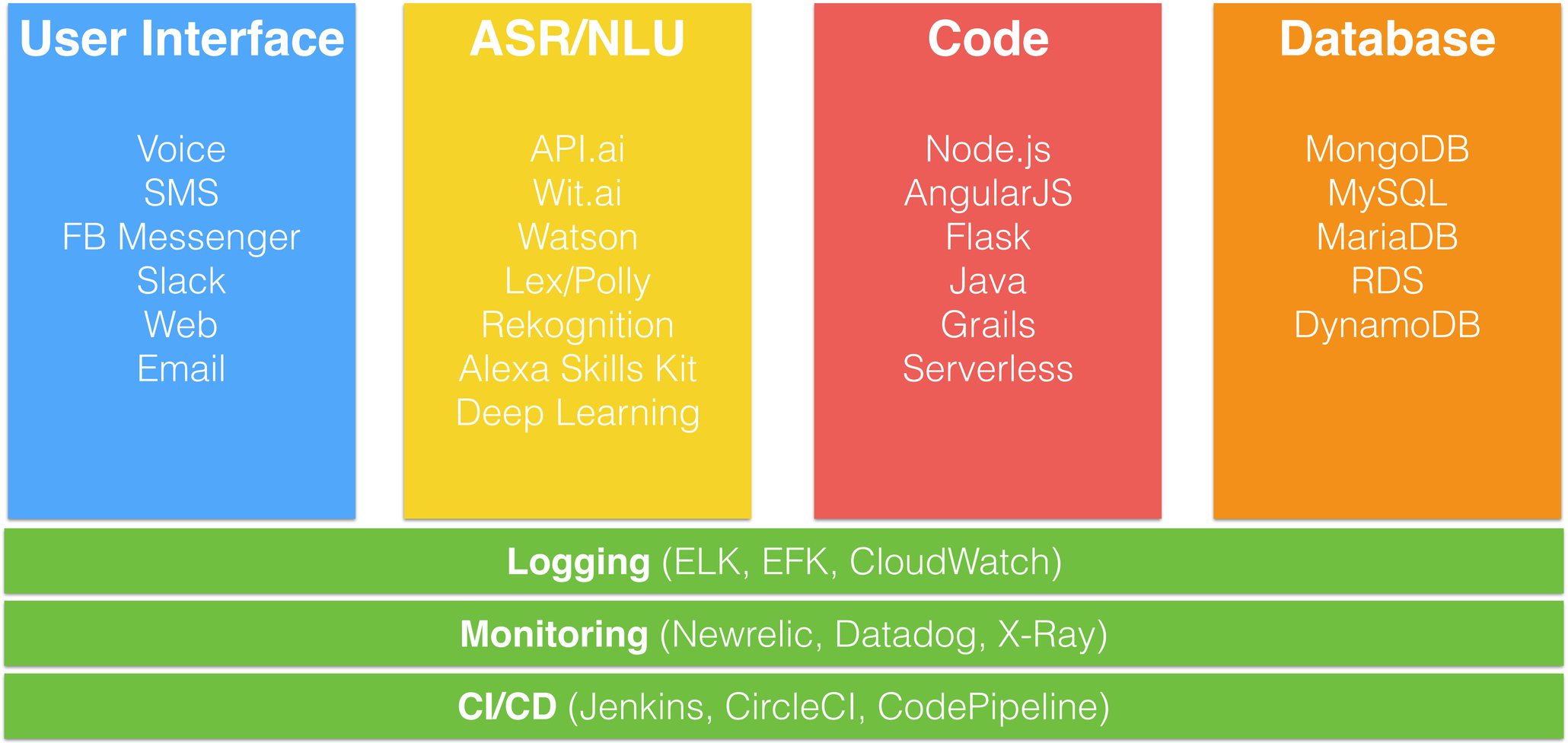
Author

Runner

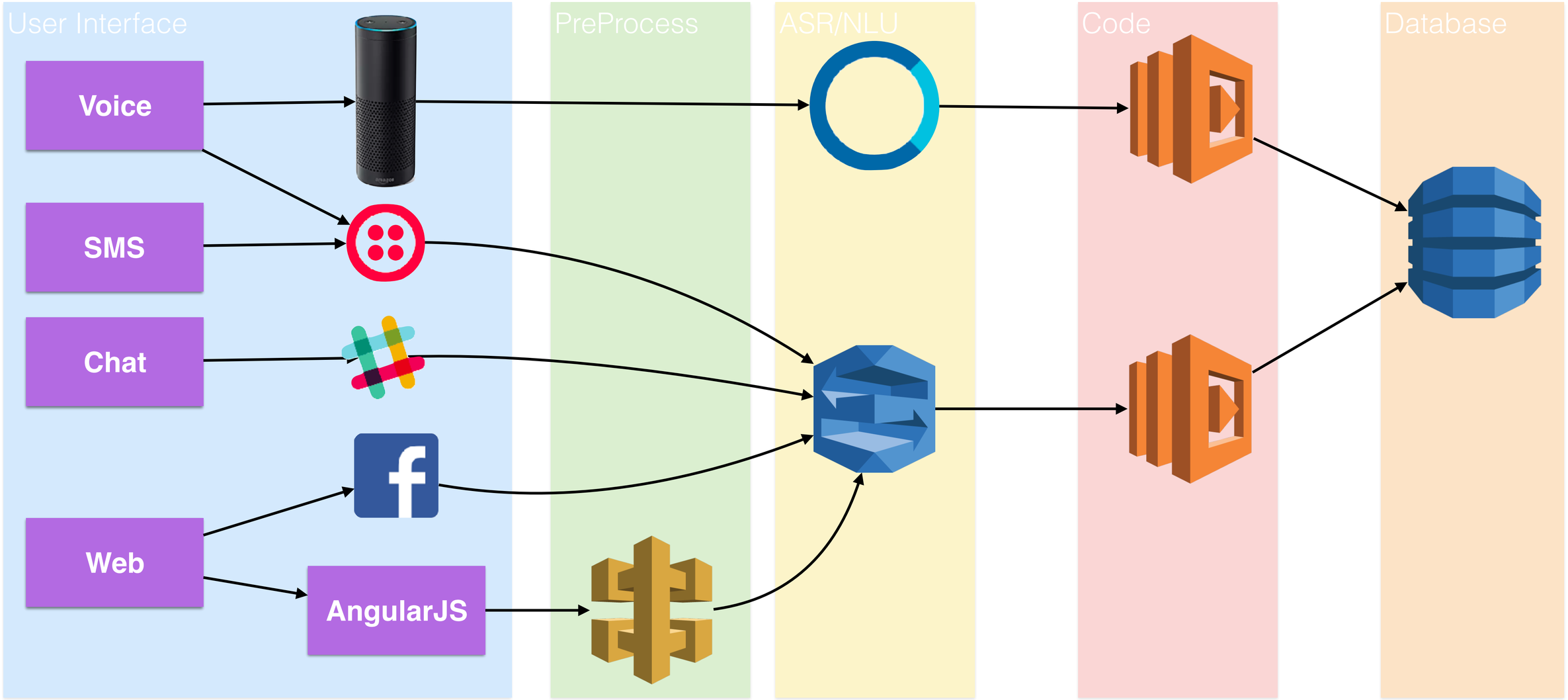
Lifelong learner

Tell me a Yoda quote

Chatbot Components

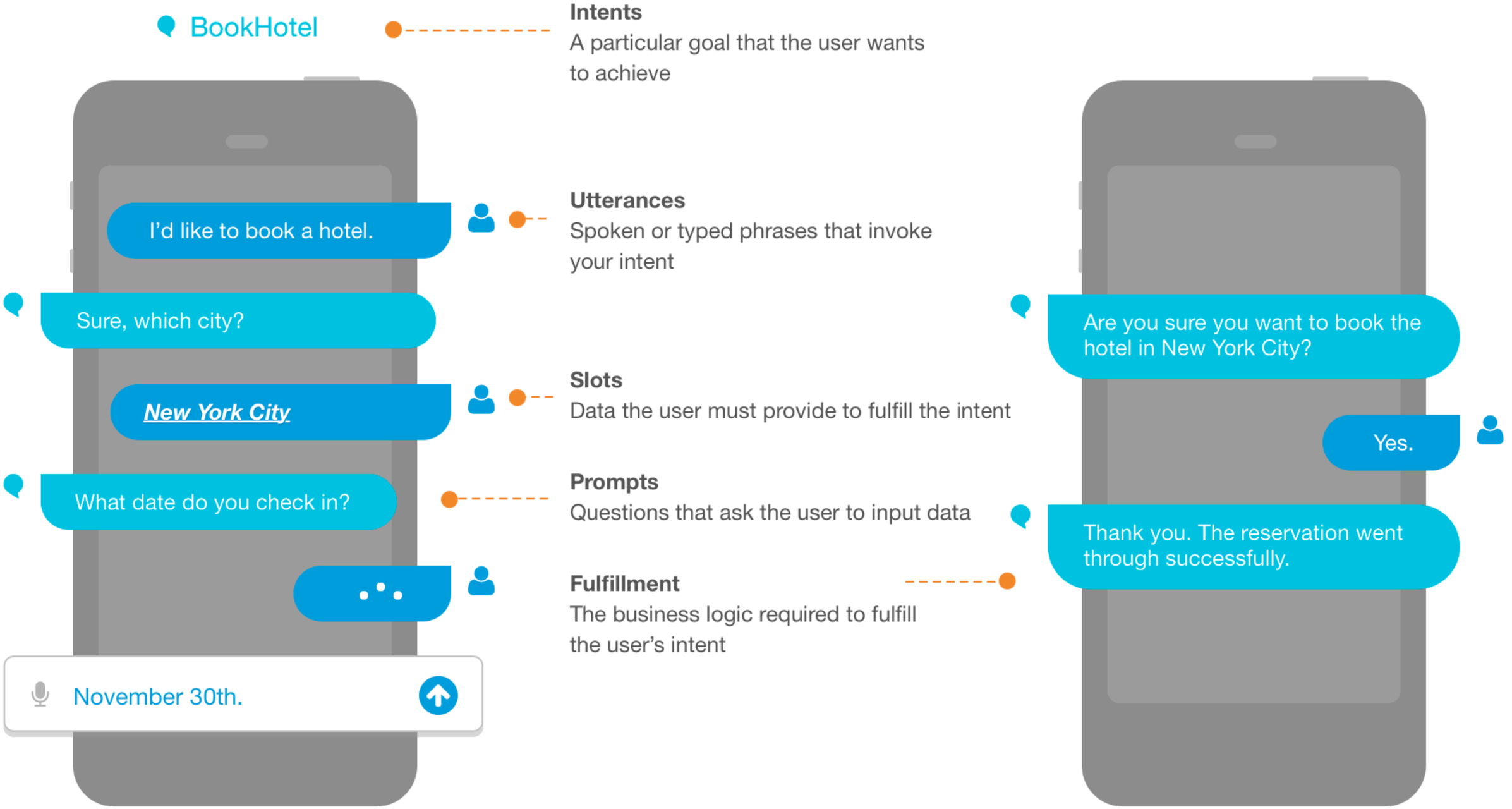


Chatbot Architecture



Amazon Lex

- Service for building conversational interfaces using voice and text
- Provides
  - Automatic Speech Recognition (ASR): speech -> text
  - Natural Language Understanding (NLU): text -> intent
- Powered by the same deep learning technologies as Alexa
- http://aws.amazon.com/lex



Intents
A particular goal that the user wants to achieve

Utterances
Spoken or typed phrases that invoke your intent

Slots
Data the user must provide to fulfill the intent

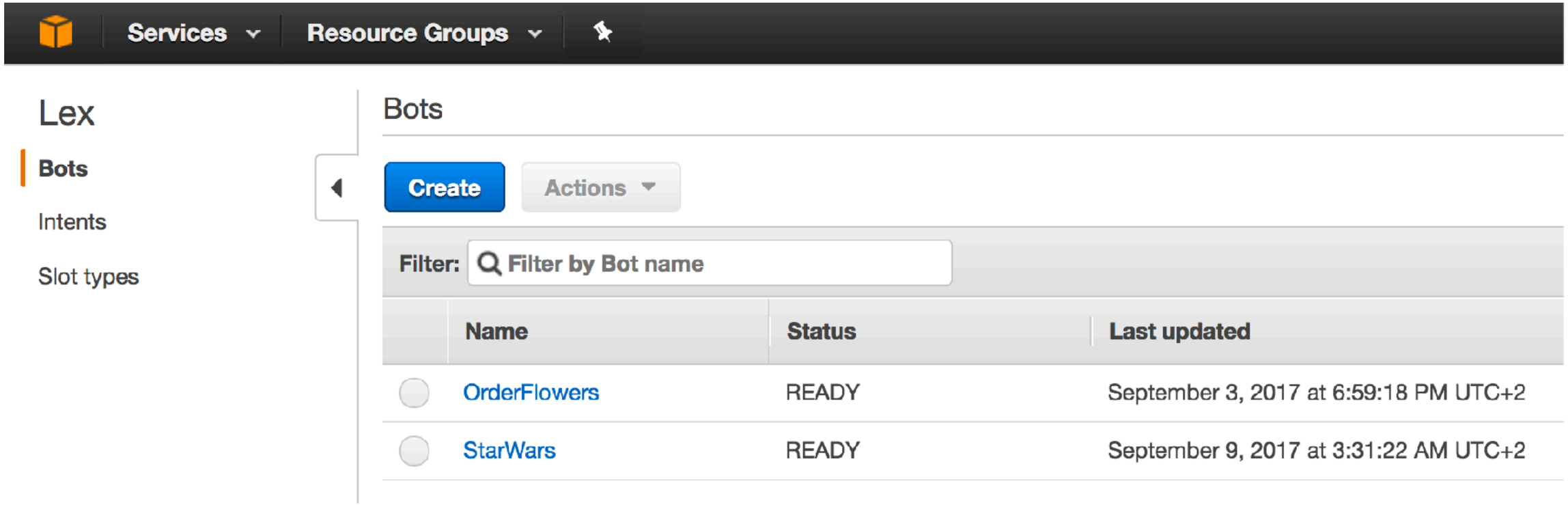
Prompts
Questions that ask the user to input data

Fulfillment
The business logic required to fulfill the user's intent

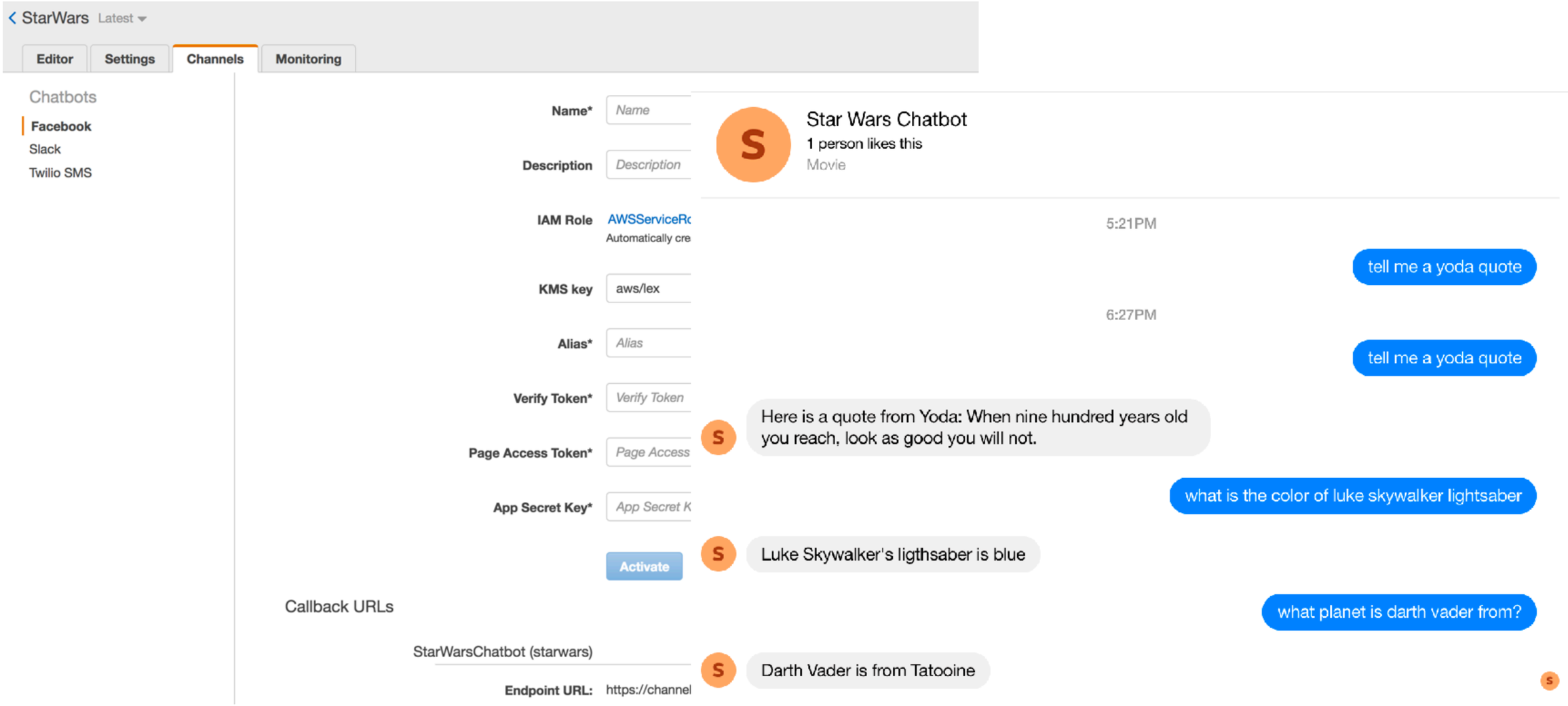
Chatbot in 3 steps

- Build a Lex bot
  - Integrate with Twilio
  - Integrate with Slack
  - Integrate with Facebook
  - Integrate with Web
  - Mobile client
- Export Lex bot configuration for Alexa Skills Kit
  - utterances, intent, slots, slot-types and prompts
- Build Alexa skill

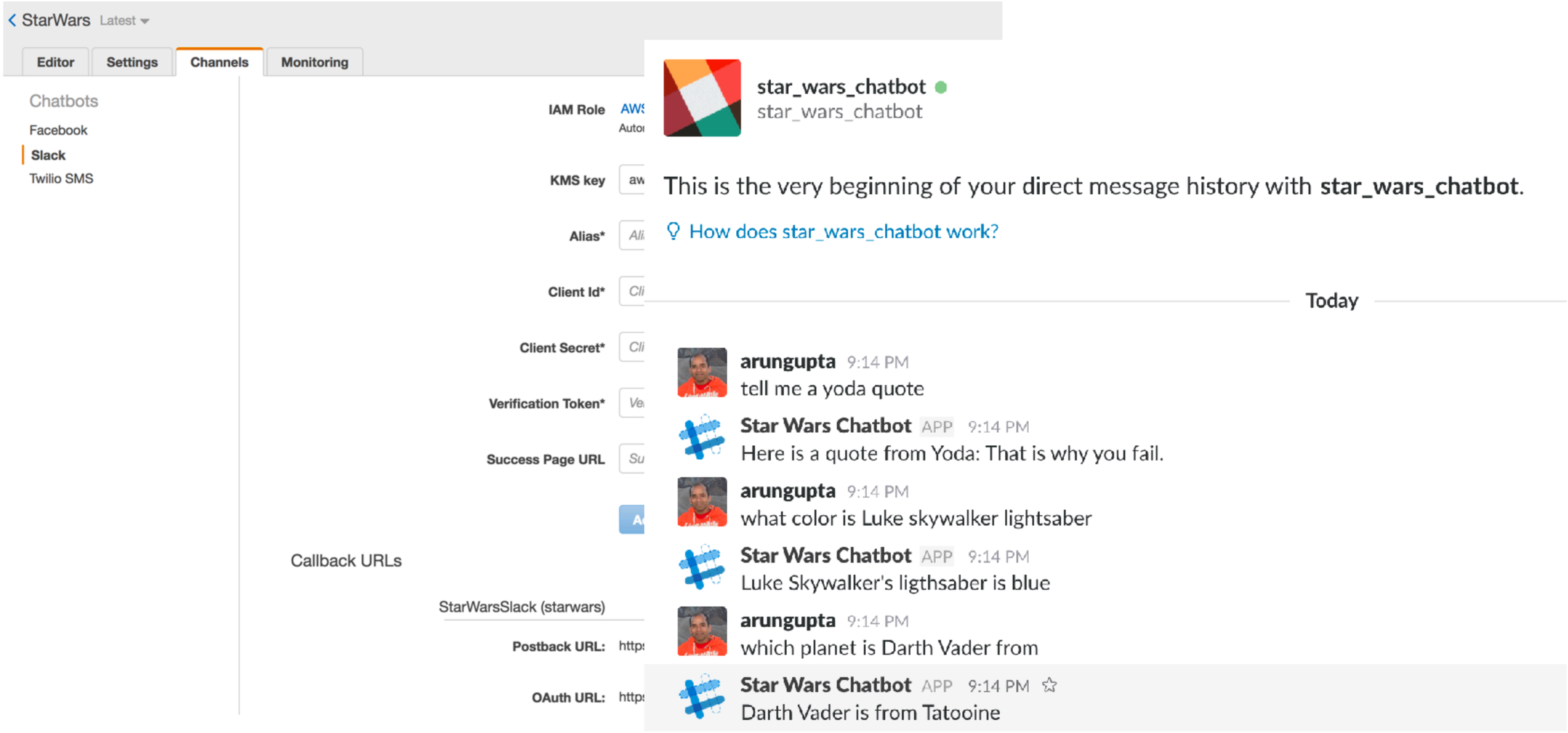
Build a Lex Bot



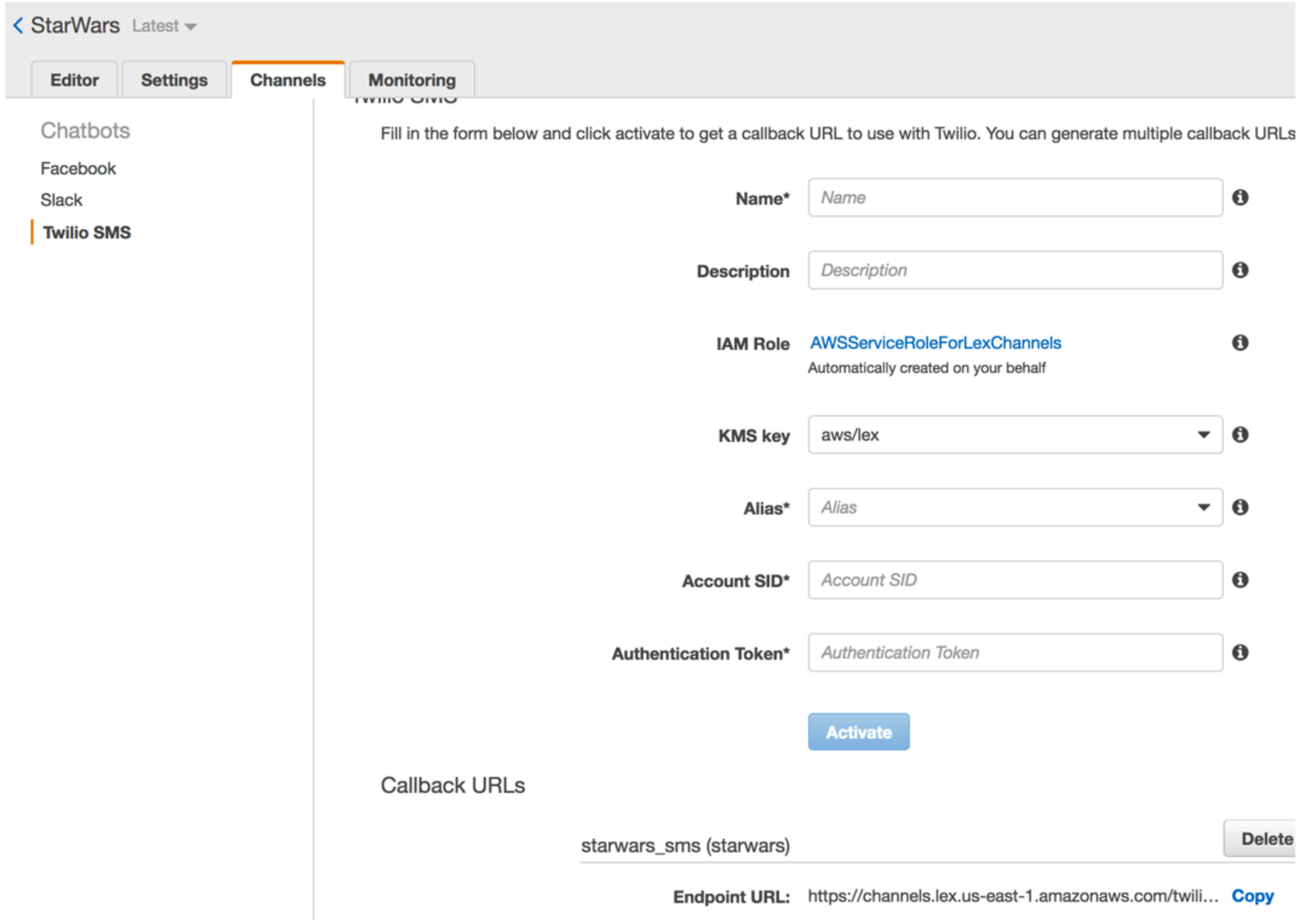
Facebook Messenger

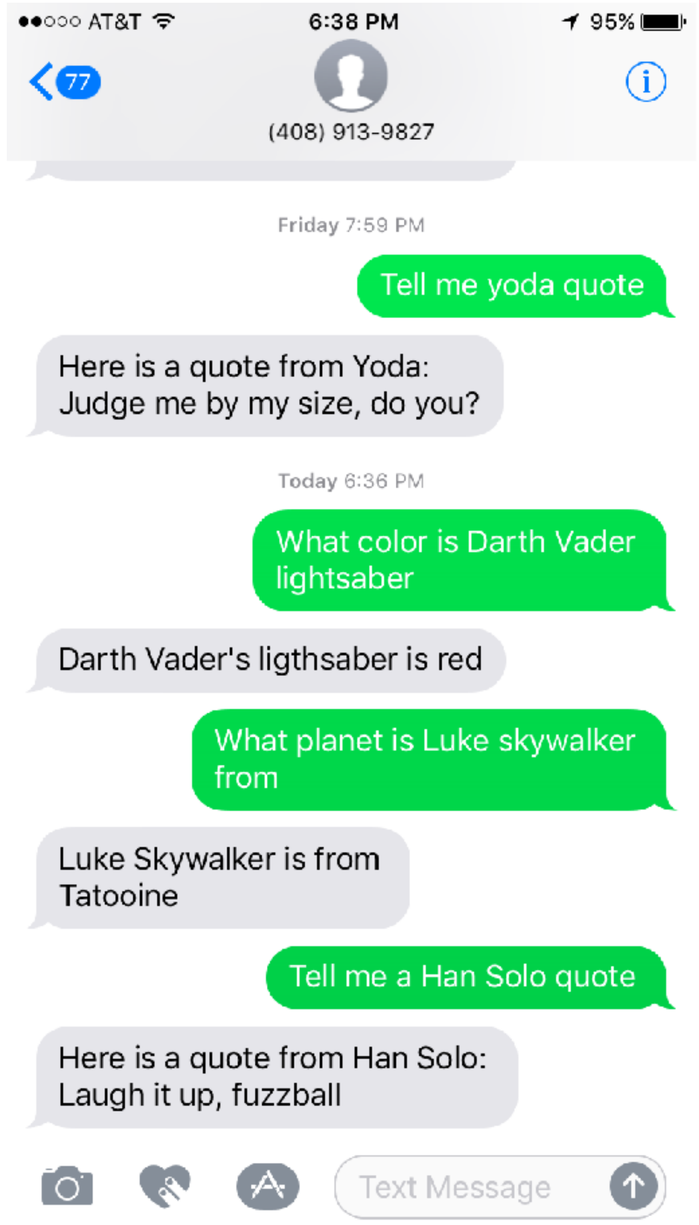


Slack


StarWars
Latest
Editor
Settings
Channels
Monitoring
Chatbots
Facebook
Slack
Twilio SMS
IAM Role
KMS key
Alias*
Client Id*
Client Secret*
Verification Token*
Success Page URL
Callback URLs
StarWarsSlack (starwars)
Postback URL:
OAuth URL:
star_wars_chatbot
star_wars_chatbot
This is the very beginning of your direct message history with star_wars_chatbot.
How does star_wars_chatbot work?
Today
arungupta 9:14 PM
tell me a yoda quote
Star Wars Chatbot APP 9:14 PM
Here is a quote from Yoda: That is why you fail.
arungupta 9:14 PM
what color is Luke skywalker lightsaber
Star Wars Chatbot APP 9:14 PM
Luke Skywalker's ligthsaber is blue
arungupta 9:14 PM
which planet is Darth Vader from
Star Wars Chatbot APP 9:14 PM
Darth Vader is from Tatooine

Twilio


StarWars Latest
Editor
Settings
Channels
Monitoring
Chatbots
Facebook
Slack
Twilio SMS
Fill in the form below and click activate to get a callback URL to use with Twilio. You can generate multiple callback URLs
Name*
Name
Description
Description
IAM Role
AWSServiceRoleForLexChannels
Automatically created on your behalf
KMS key
aws/lex
Alias*
Alias
Account SID*
Account SID
Authentication Token*
Authentication Token
Activate
Callback URLs
starwars_sms (starwars)
Delete
Endpoint URL:
https://channels.lex.us-east-1.amazonaws.com/twili...
Copy


AT&T
6:38 PM
95%
77
(408) 913-9827
Friday 7:59 PM
Tell me yoda quote
Here is a quote from Yoda: Judge me by my size, do you?
Today 6:36 PM
What color is Darth Vader lightsaber
Darth Vader's ligthsaber is red
What planet is Luke skywalker from
Luke Skywalker is from Tatooine
Tell me a Han Solo quote
Here is a quote from Han Solo: Laugh it up, fuzzball
Text Message

Steps to Build a Skill

- Design a Voice User Interface
  - Define intent schema
  - Map utterances to intent
  - Handle intent in Speechlet
- Setup the Skill in Developer Portal

Security

- AmazonServiceRoleForLexBots

Monitoring

- CloudWatch
- CloudTrail
- X-Ray

CI/CD Pipeline

References

- Amazon Lex: aws.amazon.com/lex
- Developer Portal: developer.amazon.com
- Slides & code: github.com/arun-gupta/chatbot