



Global  
Accounts

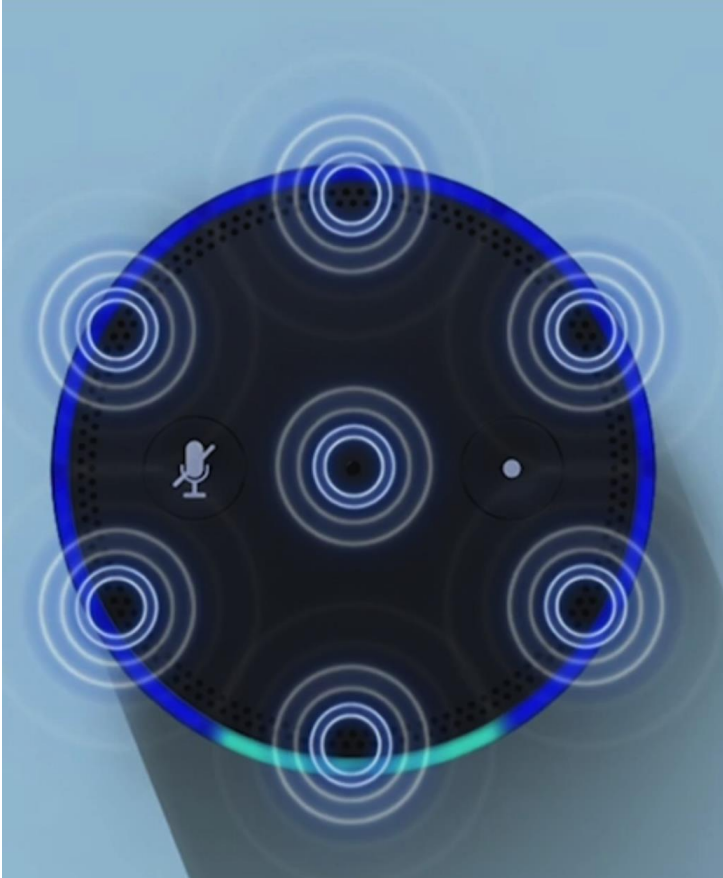
# Geophysics Hackathon 2017

Alexa Skill Kit Workflow

[Team Hutton]

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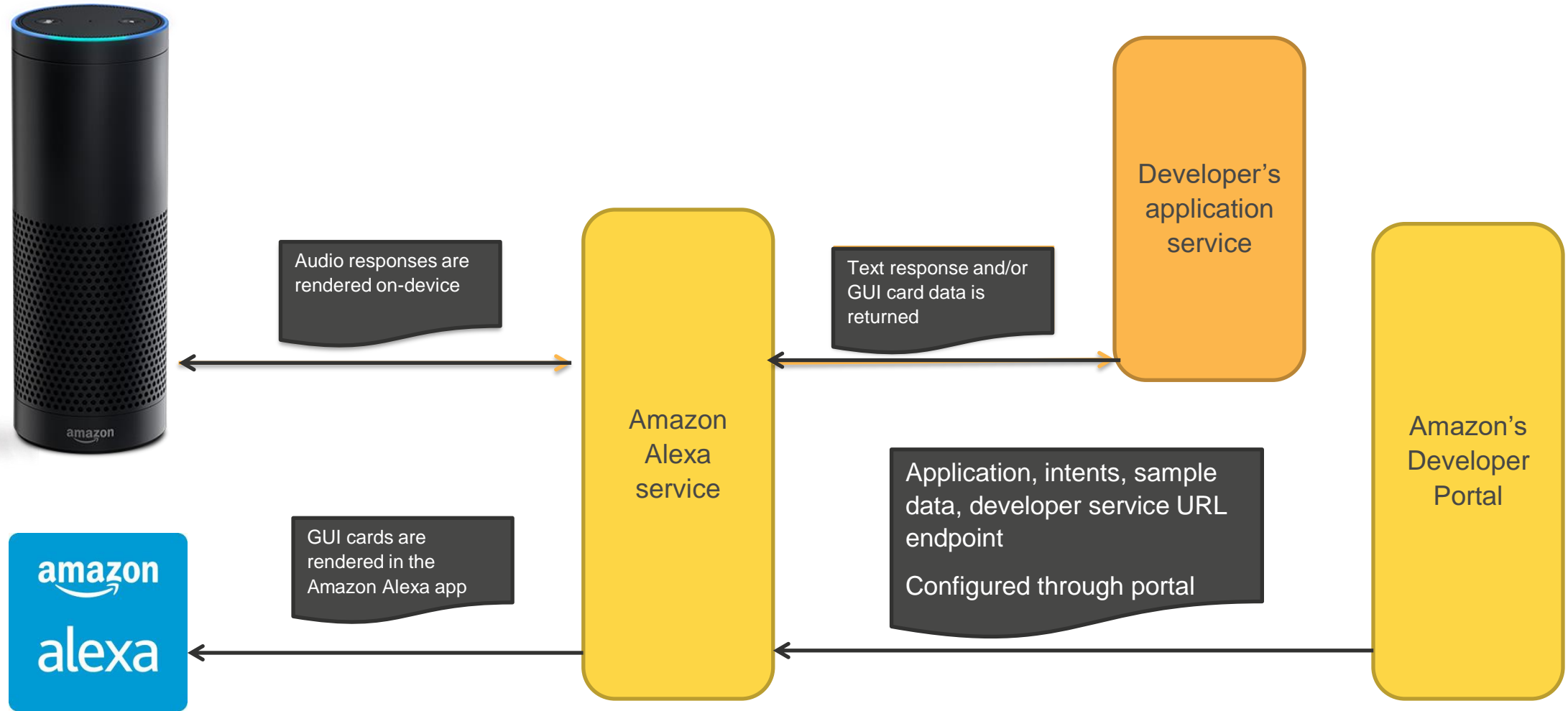
# Creating your own Alexa Skills

Alexa Skills have two parts:

**Configuration** data in  
Amazon Developer Portal

**Hosted Service** responding to user  
requests

# Alexa Skills Kit architecture





# Building an Alexa Skill

## Developer's Application Service

- Can be a hosted web service or Lambda
- Adheres to ASK service interface
- Uses HTTP over **SSL/TLS** on **port 443**
- Must be **Internet-accessible**
- Presents a **trusted certificate** matching domain name
  - Can use self-signed certificate for development
  - Trusted certificate required for certification

```

{
  "intents": [
    {
      "intent": "GetHoroscope",
      "slots": [
        {
          "name": "Sign",
          "type": "LITERAL"
        },
        {
          "name": "Date",
          "type": "DATE"
        }
      ]
    },
    {
      "intent": "GetLuckyNumbers",
      "slots": []
    }
  ]
}

```

# Building an Alexa skill

- You **define** interactions for your voice app through **intent schemas**
- Each intent consists of two fields. The **intent field** gives the name of the intent. The slots field lists the slots associated with that intent.
- Slots can also included types, such as **LITERAL**, **NUMBER**, **DATE**, etc.

# Building an Alexa skill

- “what is...”
- “what’s...”
- “tell me...”
- “give...”
- “give me...”
- “get...”
- “get me...”
- “find...”
- “find me...”

- The mappings between intents and the typical utterances that invoke those intents are provided in configuration
- Each possible phrase is assigned to one of the defined intents.
- GetHoroscope what is the horoscope for {pisces|Sign}
- GetHoroscope what will the horoscope for {leo|Sign} be {next tuesday|Date}

# Utterances and Intents

Alexa, ask Anime Facts for a fact



One more please



slot value

---

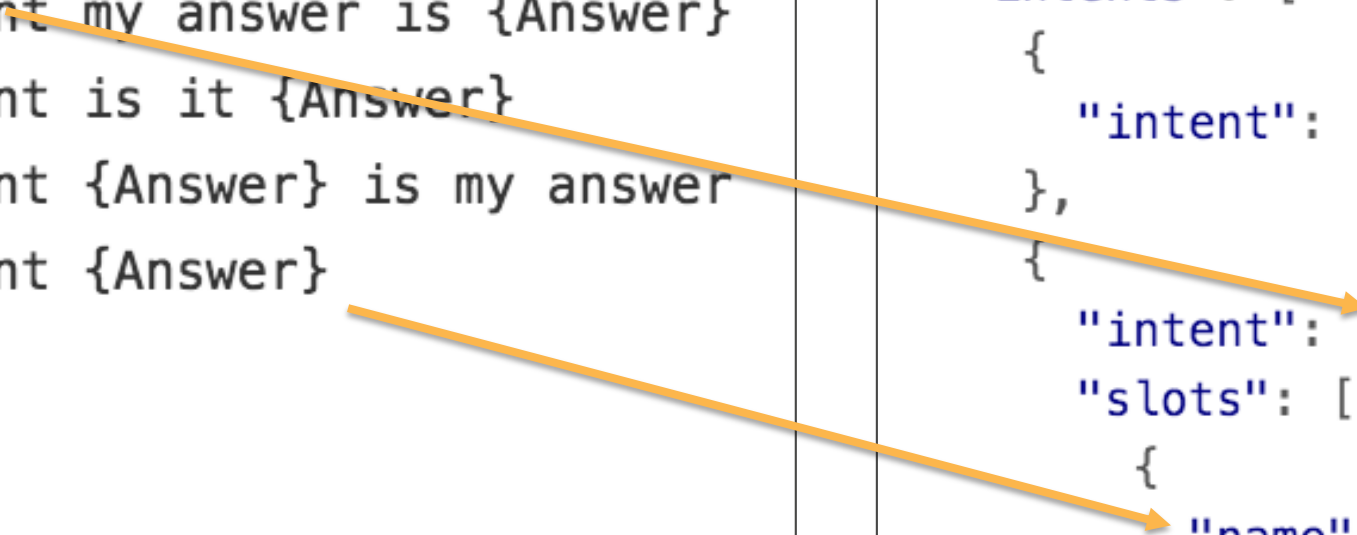
GetFactIntent



# Utterances and Intent Schema

## Utterances

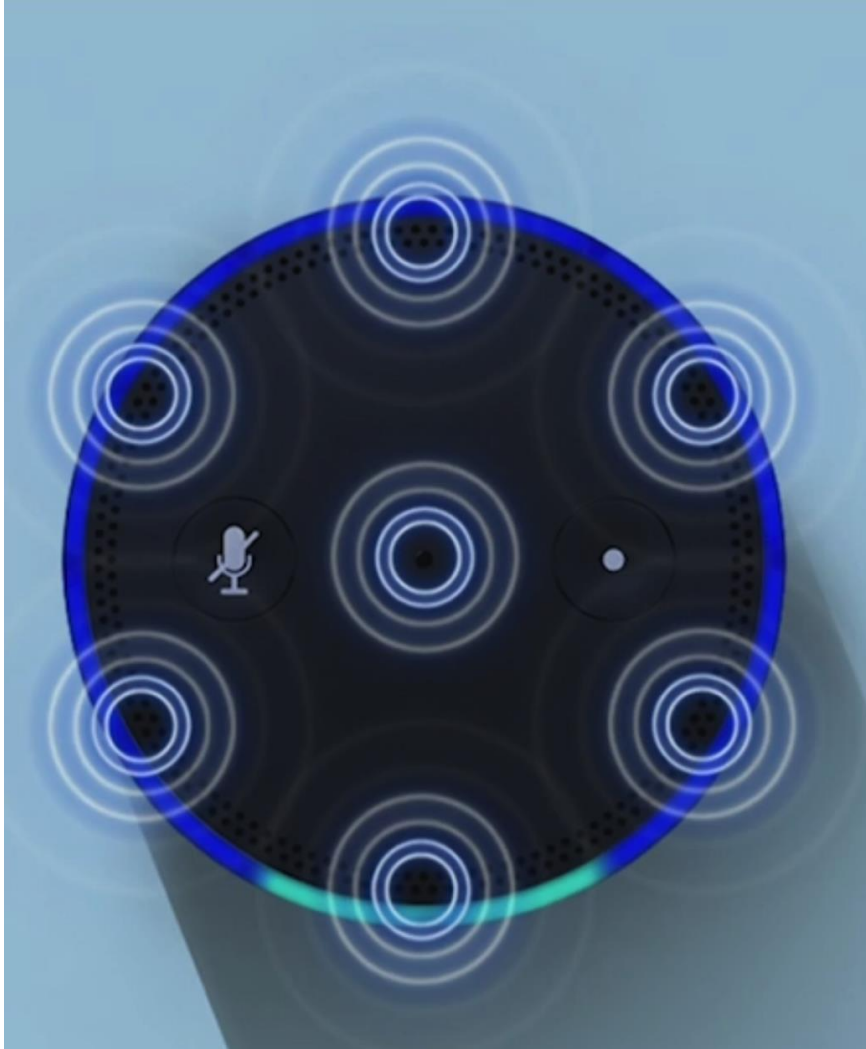
```
AnswerIntent the answer is {Answer}  
AnswerIntent my answer is {Answer}  
AnswerIntent is it {Answer}  
AnswerIntent {Answer} is my answer  
AnswerIntent {Answer}
```



## Intent Schema

```
{  
  "intents": [  
    {  
      "intent": "AMAZON.HelpIntent"  
    },  
    {  
      "intent": "AnswerIntent",  
      "slots": [  
        {  
          "name": "Answer",  
          "type": "AMAZON.NUMBER"  
        }  
      ]  
    }  
  ]  
}
```





# The Amazon Alexa service Posts events

## LaunchRequest

Maps to **onLaunch()** and occurs when the user launches the app without specifying what they want

## IntentRequest

Maps to **onIntent()** and occurs when when the user specifies an intent

## SessionEndedRequest

Maps to **OnSessionEnded()** and when the user ends the session

# Session Attributes

## Lambda Request

```
1 {
2   "session": {
3     "sessionId": "SessionId.e0174f7b-2249-4932-93f
4     "application": {
5       "applicationId": "amzn1.echo-sdk-ams.app.f0a
6     },
7     "attributes": {
8       "score": 0,
9       "currentQuestionIndex": 0,
10      "speechOutput": "Question 1. Is this year go
11      "correctAnswerText": "no. there will be an a
12      "repromptText": "Question 1. Is this year go
13      "questions": [
14        2,
15        21,
16        14,
17        11,
18        10
19      ],
20      "correctAnswerIndex": 1
21    },
22    "user": {
23      "userId": "amzn1.ask.account.AFP3ZWPOS2BGJR7
24    },
25    "new": false
```

## Lambda Response

```
1
2 "version": "1.0",
3 "response": {
4   "outputSpeech": {
5     "type": "PlainText",
6     "text": "That answer is correct. Your score :
7   },
8   "card": {
9     "content": "That answer is correct. Your sco
10    "title": "President Picker",
11    "type": "Simple"
12  },
13  "reprompt": {
14    "outputSpeech": {
15      "type": "PlainText",
16      "text": "Question 2. Who is playing the ro
17    }
18  },
19  "shouldEndSession": false
20 },
21 "sessionAttributes": {
22   "score": 1
```

Listen



# Build Sample DSIS Search skill



[developer.amazon.com](https://developer.amazon.com)

Skill information  
Interaction model  
End to end testing



[aws.amazon.com](https://aws.amazon.com)

Skill logic  
Lambda  
Lambda testing

# Development Environment

WebBrowser for AWS and Amazon Developer Console

- Credentials for AWS

Echosim.io for skill testing

# Register Amazon developer account

<https://developer.amazon.com>



## Sign in

Email (phone for mobile accounts)

Password

[Forgot your password?](#)

Sign in

☐ Keep me signed in. [Details](#) ▾

— New to Amazon Developer? —

Create your Amazon Developer account

# Create your Alexa Skill

Navigate to Alexa -> Alexa Skill Kit - > Get Started

Add a New Skill

Complete Skill Information tab

- Skill Type – Custom Interaction Model
- Name - Name of the skill that is displayed to customers in the Alexa app. Must be between 2-50 characters.
- Invocation Name - The name customers use to activate the skill. For example, "Alexa ask Tide Pooler..."

# Configure your Interaction Model

Launch Skill Builder BETA tool

Reference

- <https://developer.amazon.com/public/solutions/alexa/alexa-skills-kit/docs/ask-define-the-vui-with-gui>

# Update your Lambda function

Login to AWS Console

Navigate to Lambda Service

Create a Lambda function

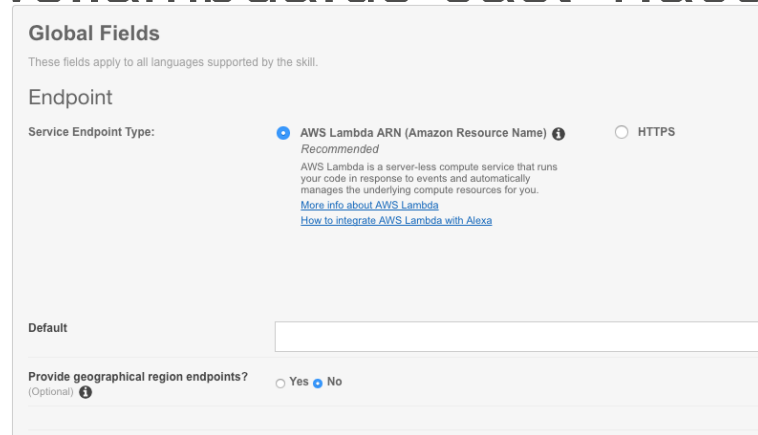
Follow one of the provided blueprints



# Complete Skill Configuration Tab

Enter Lambda function ARN into Configuration tab of developer.amazon.com portal

- Lambda function arn is on AWS Lambda Top Left section
- e.g.arn:aws:lambda:us-east-1:acctno:function:fncname



**Global Fields**  
These fields apply to all languages supported by the skill.

**Endpoint**

Service Endpoint Type: ☒ AWS Lambda ARN (Amazon Resource Name) ⓘ ☐ HTTPS

*Recommended*  
AWS Lambda is a server-less compute service that runs your code in response to events and automatically manages the underlying compute resources for you.  
[More info about AWS Lambda](#)  
[How to integrate AWS Lambda with Alexa](#)

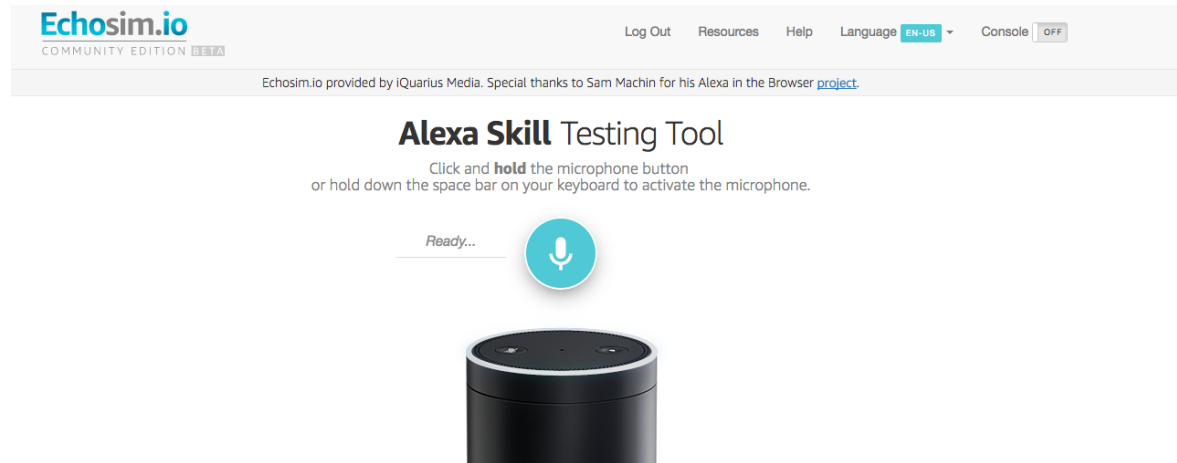
**Default**

**Provide geographical region endpoints?**  
(Optional) ⓘ ☐ Yes ☒ No

# Test Application

Can utilize Test section of Developer console

Log in to <https://echosim.io/> for an Echo emulator



# References

Getting Started Guide

<https://developer.amazon.com/public/solutions/alexa/alexa-skills-kit/getting-started-guide>

Tutorials

<https://developer.amazon.com/alexa-skills-kit/tutorials>

Alexa Sample Code

<https://github.com/alexa/>

Alexa Developer Forums

<https://forums.developer.amazon.com/spaces/23/index.html>