

CapTech®

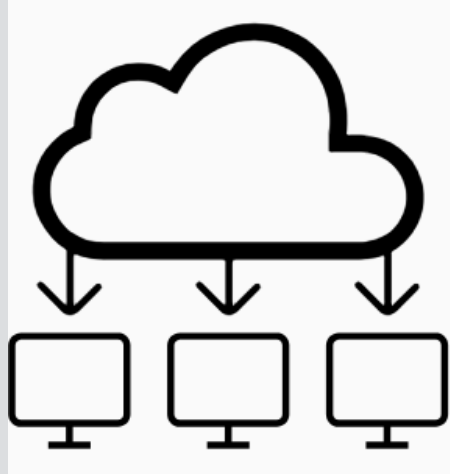
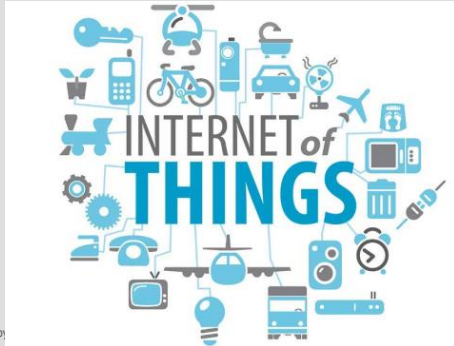
Falling Creek Middle
School Alexa Code
Academy

Others Talk,
We Listen®

Agenda

- Review Concepts
- Create Sample Skill
- Slack Demo
- Github Demo

Review



What/who is Alexa?

A **voice-controlled personal assistant** developed by Amazon. But also an example of...

Artificial Intelligence (AI). Alexa uses a service called Amazon Lex which uses **deep learning** to convert speech to text, and **natural language understanding** (NLU) to figure out the intent of the text.



Devices that use Alexa – the “Internet of Things”



Added in 2017:



Echo Look



Echo Show



Dash Wand

What are Alexa skills?

- Alexa has some built-in features (music, reminders, timers, calling other users, weather, facts, calendar integration, etc.)
- **Skills** can be created by any person or company to add new capabilities to Alexa.
- Anyone with a device that uses Alexa can enable and choose from thousands of skills

What can Alexa skills do?



Home Automation

"Alexa, set the basement to 68 degrees"



Food Ordering

"Alexa, open Domino's and place my Easy Order"



News

"Alexa, ask Washington Post for headlines"

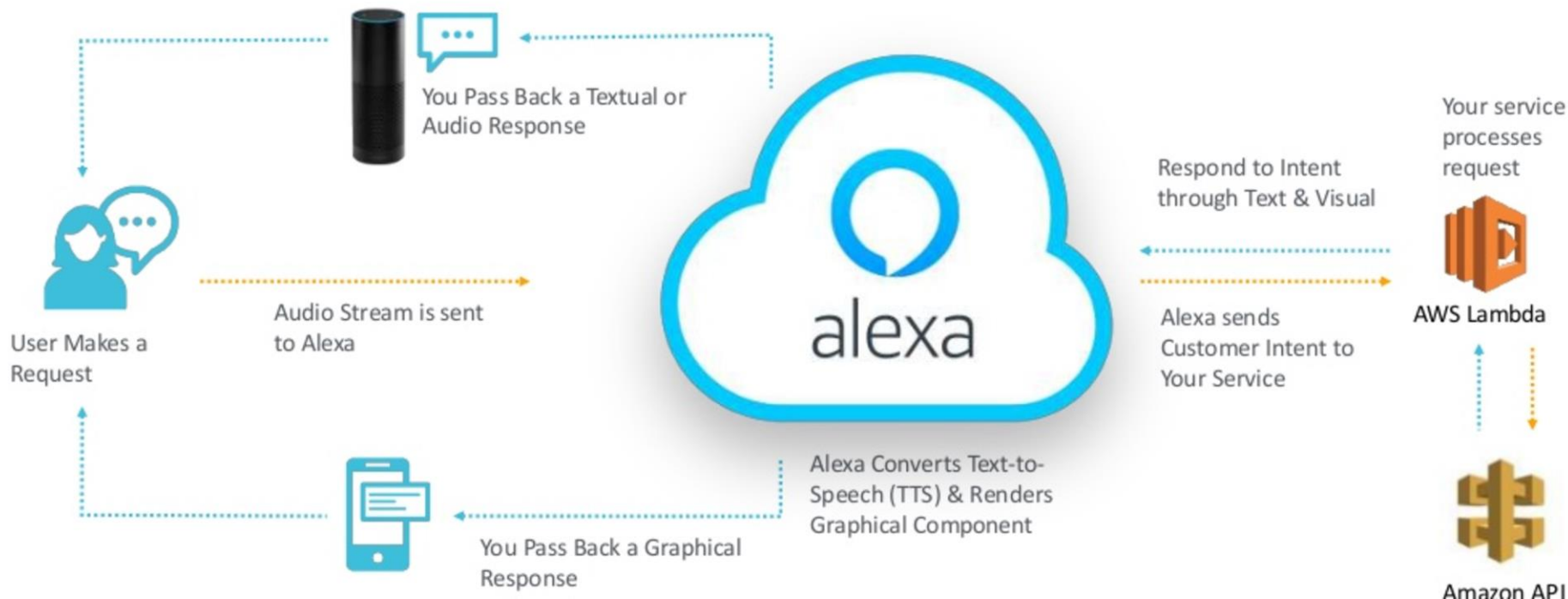


Games

"Alexa, play Jeopardy"

The Life Cycle of our Skill

A look at how the Alexa Skills Kit process a request and returns an appropriate response



Open the Sample Code in Github

<https://github.com/captechconsulting/falling-creek-middle-school>

Login to Demo Amazon Developers Account

In another tab, visit <https://developer.amazon.com>

Username: fcms.alexacode.academy@gmail.com

Password: fcms shared account password

Step 1: Set up the voice user interface (VUI) using the Alexa Skills Kit (ASK)



Amazon Developer Services and Technologies



amazon alexa

Alexa

Build natural voice experiences that offer customers a more intuitive way to interact with technology



Amazon Appstore

Develop Android apps and games for Amazon Fire TV, Fire tablet, and mobile platforms



Amazon Web Services

Reliable, scalable, and inexpensive cloud computing services



Amazon Software + Games

Publish your desktop software and games on PC & MAC platforms



Dash Services

Build Amazon reordering experiences into your devices

1 

Add Capabilities to Alexa
Alexa Skills Kit



Integrate Alexa into Your Device
Alexa Voice Service

Alexa Skills Kit

Learn

Design

Build

Launch

Start a Skill

2

3

Create Skill

Create a new skill

Create Skill

Skill name

La Contenta

11/50 characters

Default language

English (US)



More languages can be added to your skill after creation

Choose a model to add to your skill

There are many ways to start building a skill. You can design your own custom model or start with a pre-built model. Pre-built models are interaction models that contain a package of intents and utterances that you can add to your skill.

Custom

Design a unique experience for your users. A custom model enables you to create all of your skill's interactions.

SELECTED

Flash Briefing

Give users control of their news feed. This pre-built model lets users control what updates they listen to.

"Alexa, what's in the news?"

Smart Home

Give users control of their smart home devices. This pre-built model lets users turn off the lights and other devices without getting up.

"Alexa, turn on the kitchen lights"

Video

Let users find and consume video content. This pre-built model supports content searches and content suggestions.

"Alexa, play Interstellar"

Developer Screen

amazon alexa

Your Alexa Consoles

A

?

Q

Feedback forum

< Your Skills

La Contenta

Build

Test

Distribution

Certification

Analytics

English (U.S.)

CUSTOM

Interaction Model

Invocation

Intents (4) + Add

Built-In Intents (4)

AMAZON.FallbackIntent

AMAZON.CancelIntent

AMAZON.HelpIntent

AMAZON.StopIntent

Slot Types (0) + Add

JSON Editor

Interfaces

Endpoint

Intent History

How to get started

Alexa Skills Kit Developer Console: Build

amazon alexa
Developer Console: Build

Resources

[Documentation](#)

Refer to our technical documents for detailed guides on building custom skills.

[Sample Alexa Projects](#)

Skill builder checklist

Complete these steps to be able to test your skill using the simulator in the test tab, or with your echo device.

REQUIRED

1. Invocation Name >

Enter an invocation name for your skill



REQUIRED

2. Intents, Samples, and Slots >

Add at least one intent and one sample utterance



REQUIRED

3. Build Model >

Successfully build your interaction model



REQUIRED

4. Endpoint >

Set a web service endpoint to handle skill requests





 English (U.S.)



Save Model



Build Model

CUSTOM



Interaction Model

Invocation

Intents (4)



Add

Built-In Intents (4)

AMAZON.FallbackIntent

AMAZON.CancelIntent


AMAZON.HelpIntent

AMAZON.StopIntent



Invocation

Users say a skill's invocation name to begin an interaction with a particular custom skill. For example, if the invocation name is "daily horoscopes", users can say:

User: Alexa, ask daily horoscopes for the horoscope for Gemini

Skill Invocation Name 


la contenta

 English (U.S.) 




 Save Model

 Build Model

CUSTOM

 Interaction Model

Invocation

-  Intents (4)
-  Add
-  Built-In Intents (4)
- AMAZON.FallbackIntent
- AMAZON.CancelIntent
- AMAZON.HelpIntent
- AMAZON.StopIntent

Invocation

Users say a skill's invocation name to begin an interaction with a particular custom skill. For example, if the invocation name is "daily horoscopes", users can say:

User: Alexa, ask daily horoscopes for the horoscope for Gemini

Skill Invocation Name 

la contenta

Terminology

Alexa, tell Personality Type to start the quiz.

Wake word Launch Skill Invocation Name Utterance




Executes the "Quiz" intent

Alexa, ask Personality Type for a fun fact.

Wake word Launch Skill Invocation Name Utterance



Executes the "Fact" intent

 English (U.S.) 



Save Model



Build Model

CUSTOM



Interaction Model

Invocation

Intents (4)

 Add

Built-In Intents (4)

AMAZON.FallbackIntent

AMAZON.CancelIntent

AMAZON.HelpIntent

AMAZON.StopIntent

Slot Types (0)

 Add

Add Intent

An intent represents an action that fulfills a user's spoken request. [Learn more](#) about intents.

☒ Create custom intent 

About

Create custom intent

☐ Use an existing intent from Alexa's built-in library 

'[Learn more](#) about using built-in intents.

Search built-ins



English (U.S.)

CUSTOM

Interaction Model

Invocation

Intents (5)

+ Add

About



Built-In Intents (4)

AMAZON.FallbackIntent

AMAZON.CancelIntent

AMAZON.HelpIntent

AMAZON.StopIntent

Slot Types (0)

+ Add

JSON Editor

Save Model

Build Model

Intents / About

Sample Utterances (4) ?

Bulk Edit Export

about this skill

+

info



details



information



about

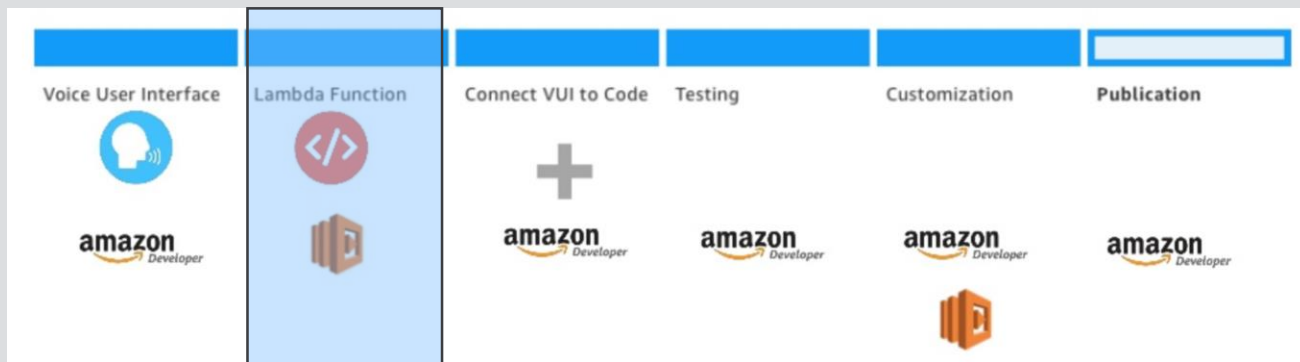


< 1 - 4 of 4 >

Components of an Alexa Skill



Step 2: create your skill logic using an AWS Lambda Function



What is the cloud?



The **cloud** is software and services that run on the internet (a.k.a someone else's server) instead of from your computer.



Amazon Web Services (AWS) is a cloud services platform. AWS Lambda is one of those services – it lets you build and run your code online.

In a New Tab, Login to our demo AWS account

<https://captech-training.signin.aws.amazon.com/console>

Username: fcms-lambda

Password: @l3xaTra1n

AWS services

Find a service by name or feature (for example, EC2, S3 or VM, storage).



> Recently visited services

✓ All services



Compute

EC2

Lightsail

Elastic Container Service

EKS

Lambda

Batch

Elastic Beanstalk



Management Tools

CloudWatch

AWS Auto Scaling

CloudFormation

CloudTrail

Config

OpsWorks

Service Catalog

Systems Manager



Mobile Services

Mobile Hub

AWS AppSync

Device Farm

Mobile Analytics

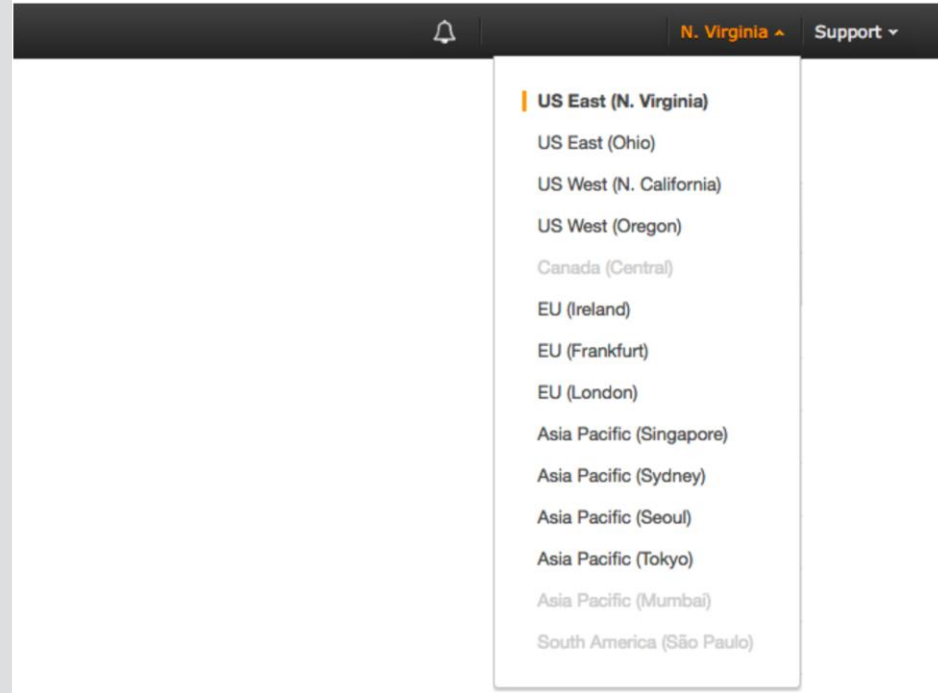


AR & VR

Amazon Sumerian

Confirm That you are in US East Region

Check your AWS region. AWS Lambda only works with the Alexa Skills Kit in two regions: US East (N. Virginia) and EU (Ireland). Make sure you choose the region closest to your customers.





Services ▾

Resource Groups ▾



lambda@techemstudios.com @... ▾

N. Virginia ▾

Supp

AWS Lambda



Lambda > Functions

Dashboard

Functions

Functions (52) ↻

Actions ▾

Create function



Filter by tags and attributes or search by keyword



1

2

3

4

5

6



Function name ▾



Description

Runtime ▾

Code
size ▾

Last
Modified ▾

Create function

Author from scratch ☒

Start with a simple "hello world" example.



Blueprints ☐

Choose a preconfigured template as a starting point for your Lambda function.



Author from scratch [Info](#)

Name

la_contenta

Runtime

Python 3.6

Role

Defines the permissions of your function. Note that new roles may not be available for a few minutes after creation. [Learn more](#) about Lambda execution roles.

Choose an existing role

Existing role

You may use an existing role with this function. Note that the role must be assumable by Lambda and must have Cloudwatch Logs permissions.

service-role/basic_lambda_role

Create function

la_contenta

Throttle

Qualifiers ▼

Actions ▼

Select a test event.. ▼

Test

Save



Congratulations! Your Lambda function "la_contenta" has been successfully created. You can now change its code and configuration. Click on the "Test" button to input a test event when you are ready to test your function.



Configuration

Monitoring

▼ Designer

Add triggers

Click on a trigger from the list below to add it to your function.

API Gateway

AWS IoT

Alexa Skills Kit

Alexa Smart Home

CloudFront



la_contenta



Alexa Skills Kit

ⓘ Configuration required



Add triggers from the list on the left



Amazon CloudWatch Logs

Resources the function's role has access to will be shown here

la_contenta

Throttle

Qualifiers ▼

Actions ▼

Select a test event.. ▼

Test

Save

Configure triggers



It is a best practice to enable Skill ID verification. If you have existing triggers with Skill ID verification 'Enable', you will not be able to create a new trigger with Skill ID verification 'Disable'. [Learn more](#). ✕

Skill ID verification

☐ Enable (recommended)

☒ Disable

Lambda will add the necessary permissions for Amazon Alexa to invoke your Lambda function from this trigger. [Learn more](#) about the Lambda permissions model.

Cancel

Add

la_contenta

Throttle

Qualifiers ▼

Actions ▼

tst ▼

Test

Save

CloudFront ▼

Function code [Info](#)

Code entry type

Edit code inline ▼

Runtime

Python 3.6 ▼

Handler [Info](#)

lambda_function.lambda_handler

File Edit Find View Goto Tools Window

Environment

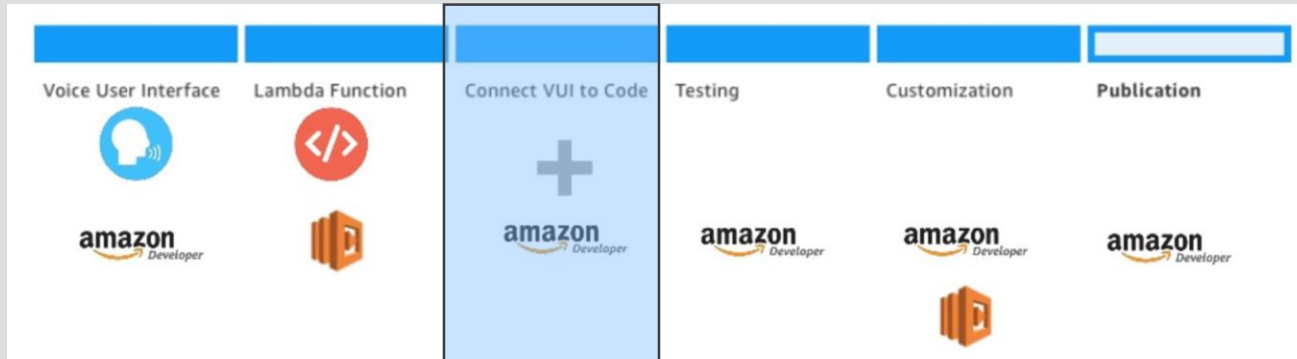
- la_contenta
 - lambda_function.py

lambda_function × +



```
1 def lambda_handler(event, context):
2     # TODO implement
3     return 'Hello from Lambda'
4 |
```


paste the lambda code from GitHub here

Step 3: Connect Your Voice User Interface To Your Lambda Function



Grab ARN

 Services ▾ Resource Groups ▾ 

 lambda@techemstudios.com @... ▾ N. Virginia ▾ Support ▾

[Lambda](#) > [Functions](#) > la_contenta

la_contenta

ARN - arn:aws:lambda:us-east-1:694910018021:function:la_contenta

Throttle

Qualifiers ▾

Actions ▾

Select a test event.. ▾

Test

Save

Upcoming



▼ Built-In Intents (4)

AMAZON.FallbackIntent

AMAZON.CancelIntent

AMAZON.HelpIntent

AMAZON.StopIntent

Slot Types (0)

[+ Add](#)

JSON Editor



Interfaces



Endpoint



Intent History

Service Endpoint Type

Select how you will host your skill's service endpoint.

☒ AWS Lambda ARN [?](#)
(Recommended)

Your Skill ID [?](#)

amzn1.ask.skill.1983629b-f8ea-48f1-955c-e536c91fdb2b

[Copy to Clipboard](#)

Default Region [?](#)
(Required)

arn:aws:lambda:us-east-1:694910018021:function:la_contenta

North America [?](#)
(Optional)

arn:aws:lambda:us-east-1:<aws_account_id>:function:<lambda_name>

Europe and India [?](#)
(Optional)

arn:aws:lambda:eu-west-1:<aws_account_id>:function:<lambda_name>

[Save Endpoints](#)

Step 4: Test the Alexa Skill



English (US)

Save Model

Building

CUSTOM

Interaction Model

Invocation

Intents (6) + Add

About

Built-In Intents (5)

AMAZON.FallbackIntent

AMAZON.CancelIntent

AMAZON.HelpIntent

AMAZON.StopIntent

AMAZON.NavigateHomeIntent

Slot Types (0) + Add

JSON Editor

Intents / About

Sample Utterances (6) ?

Bulk Edit Export

What might a user say to invoke this intent?



about



details



info

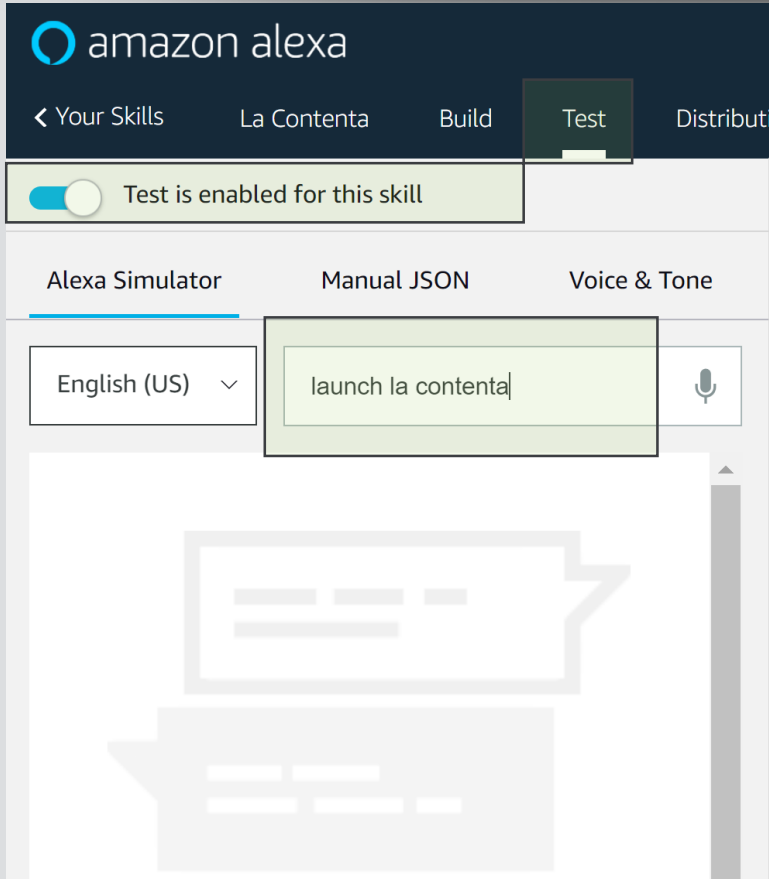


how do I use this skill



what this skill does





Note: To test intents, you have to include the skill's invocation name ("la contenta" in this case) with the utterance ("launch" in this case).

If you don't have an Alexa-enabled device, you can perform verbal testing of your skill on Echosim.io instead

Echosim.io
COMMUNITY EDITION



Log Out Resources Help Language **EN-US** Console **OFF**

Echosim.io provided by iQuarius Media. Special thanks to Sam Machin for his Alexa in the Browser [project](#).

Alexa Skill Testing Tool

Click and **hold** the microphone button
or hold down the space bar on your keyboard to activate the microphone.

Ready...



Troubleshoot Errors

Copy the service request from the Service Simulator and paste into the Lambda's "Configure test events" modal. Then click "Test". Error details will be under the Execution result's Details section.

Service Simulator

Use Service Simulator to test your HTTPS endpoint: `arn:aws:lambda:us-east-1:694910018021:function:InspirationalWomen`

Note: {} does not currently support testing audio player directives, dialog model, customer permissions and customer account linking.

Text **JSON**

Enter Utterance

science

Ask Inspirational Women Reset

Service Request

```
1 {
2   "session": {
3     "new": true,
4     "sessionId": "SessionId.ae065503-a224-43ba-e
5     "application": {
6       "applicationId": "amzn1.ask.skill.356422e7
7     },
8     "attributes": {},
9     "user": {
10      "userId": "amzn1.ask.account.AFQFHLX566V
11    }
12  },
13  "request": {
14    "type": "IntentRequest",
15    "requestId": "EdwRequestId.c65bef31-6ac3-4a4
16  }
```

Service Response

1 The remote endpoint could not be called, or the r

Listen

aws

Services ▾ Resource Groups ▾

lambda@techemstudio

Lambda > Functions > InspirationalWomen

ARN - arn:aws:lambda:us-east-1:694910018021:function:InspirationalWomen

InspirationalWomen

Qualifiers ▾

Actions ▾

Select a test event.. ▾

Configure test events

Test

Execution result: failed (logs)

[Details](#)

Configuration

Triggers

Monitoring

▼ Function code

Code entry type

Runtime

Handler [Info](#)

Edit code inline ▾

Python 3.6 ▾

index.handler

Step 5: Customize the Skill to be Yours



Step 6: optional - Get Your Skill Certified and Published



How to Publish Your Skill

- Publish your Alexa skill by following these instructions!
 - Amazon will either provide feedback OR publish the skill within 7 days of you submitting it for certification. It may take you several submissions to get your skill certified if it doesn't meet all of Amazon's requirements.
- Every month, Amazon has been giving out **free stuff (like Dots!)** for anyone who publishes a skill! All you have to do is fill out this form once your skill has been published.

The logo for CapTech, featuring the word "CapTech" in a bold, white, sans-serif font. A registered trademark symbol (®) is located at the top right of the word "Tech".

CapTech®

Thank You

Others Talk,
We Listen®

Appendix
