

# CREATE YOUR FIRST ALEXA SKILL

PRESENTED BY

**CapTech**<sup>®</sup>

Others Talk, We Listen.



“DEAR WOMEN,  
WE NEED YOU”

- The Tech Industry

# 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

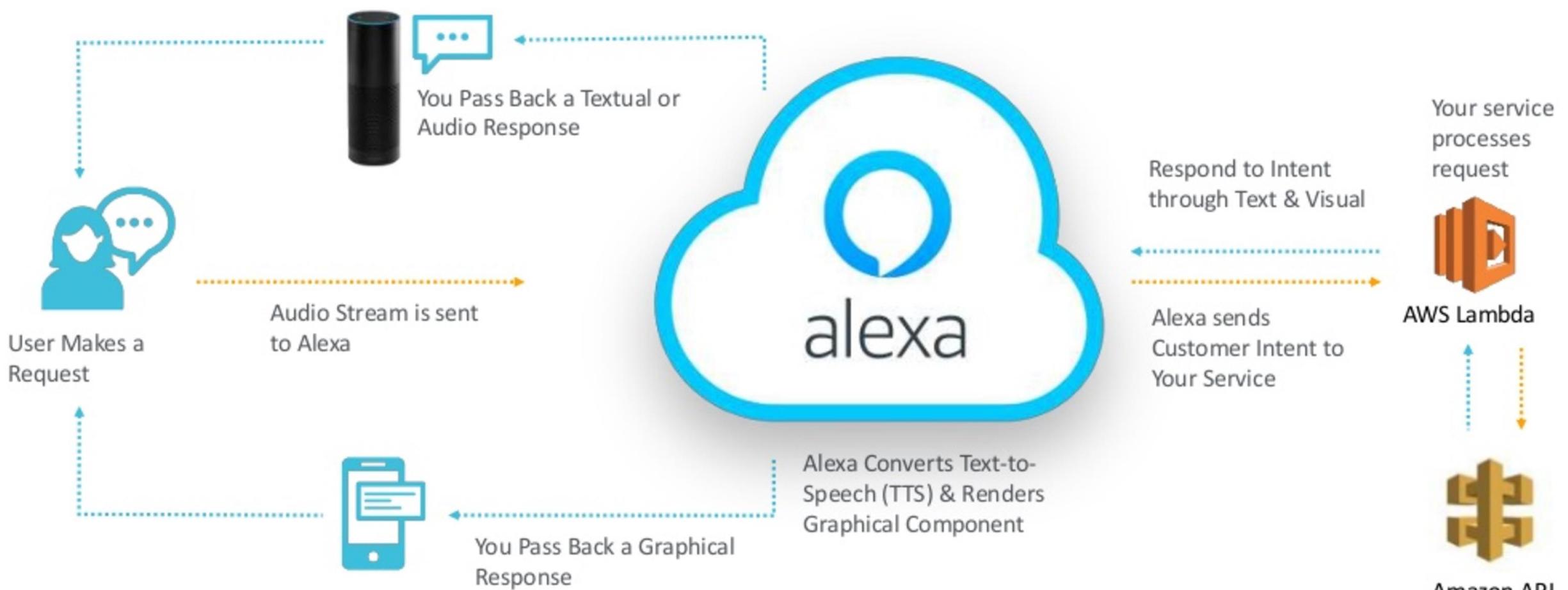
"Alexa, play Jeopardy"

# COMPONENTS OF AN ALEXA SKILL



# 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/full-steam-ahead/alexam>

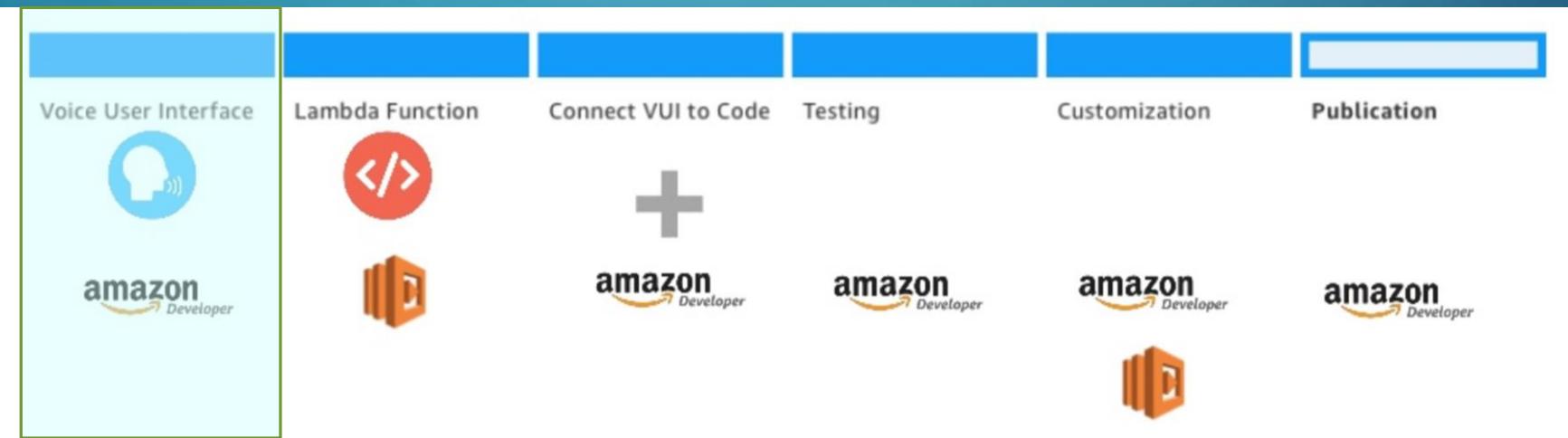
IN ANOTHER TAB, LOGIN TO OUR DEMO AMAZON  
DEVELOPERS ACCOUNT

<https://developer.amazon.com>

**Username:** alexa@techemstudios.com

**Password:** techme17

# 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



## 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

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"

amazon alexa

Your Alexa Consoles A ? Q

Your Skills La Contenta Build Test Distribution Certification Analytics Feedback forum

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)

▼ Built-In Intents (4)

AMAZON.FallbackIntent

AMAZON.CancelIntent

AMAZON.HelpIntent

AMAZON.StopIntent

 Add

## Invocation

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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

amazon alexa

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

Save Model Build Model

## 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 

amazon alexa

Your Alexa Consoles A ?

Your Skills La Contenta Build Test Distribution Certification Analytics Feedback forum

English (U.S.)

**CUSTOM**

Interaction Model

Invocation

Intents (5) + Add

**About** + Delete

Built-In Intents (4)

- AMAZON.FallbackIntent
- AMAZON.CancelIntent
- AMAZON.HelpIntent
- AMAZON.StopIntent

Slot Types (0) + Add

JSON Editor

Save Model Build Model

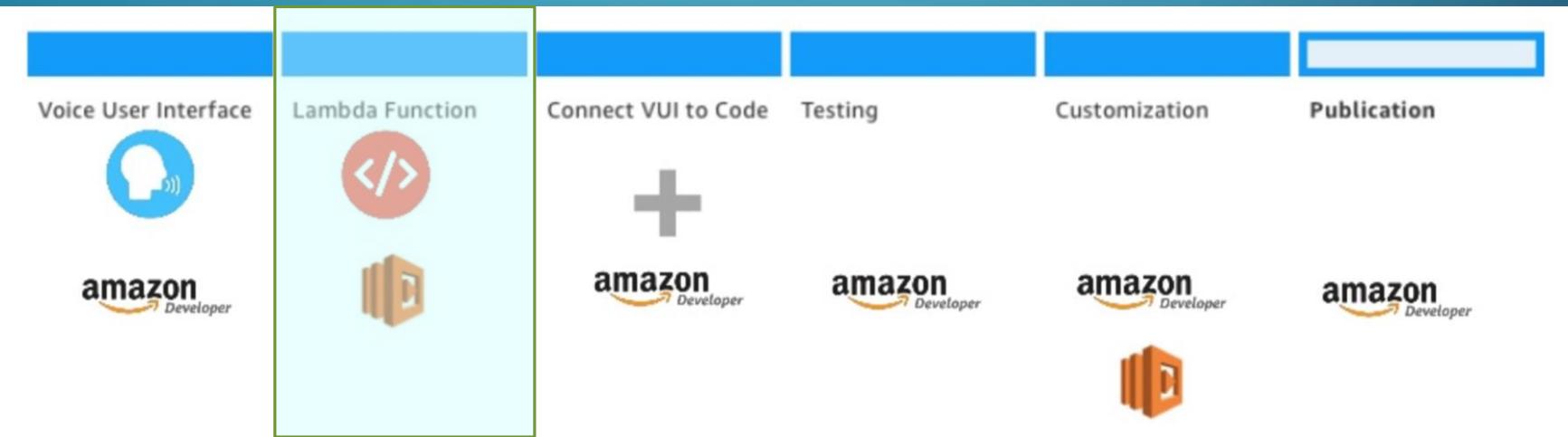
## Intents / About

Sample Utterances (4) ? Bulk Edit Export

Utterance	Action
about this skill	+ <span style="color: red;">Delete</span>
info	<span style="color: red;">Delete</span>
details	<span style="color: red;">Delete</span>
information	<span style="color: red;">Delete</span>
about	<span style="color: red;">Delete</span>

1 – 4 of 4

## 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://techem.signin.aws.amazon.com/console>

**Username:** lambda@techemstudios.com

**Password:** techme17

[Services](#)[Resource Groups](#)

Iam

# 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](#)

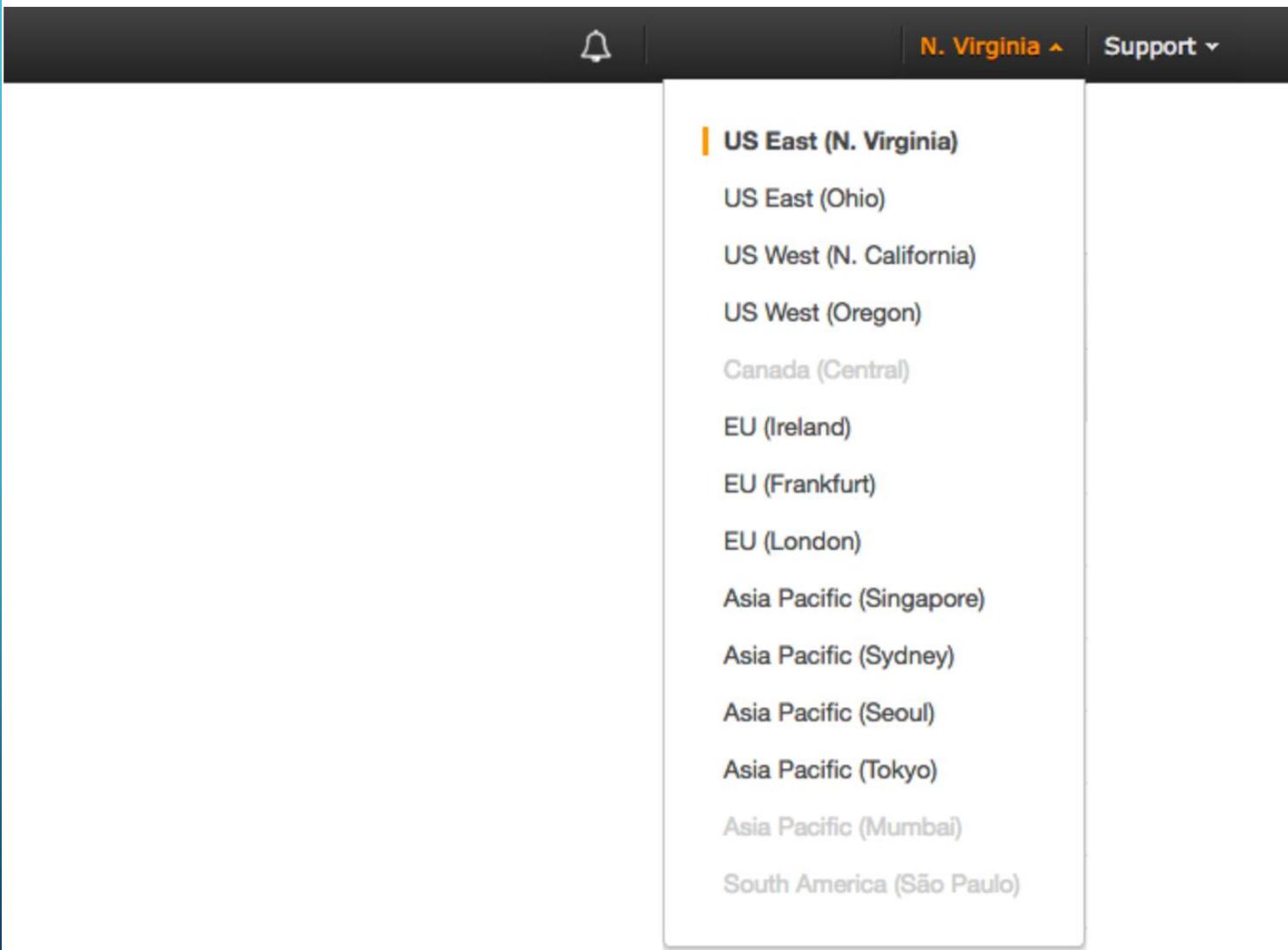
## Mobile Services

[Mobile Hub](#)[AWS AppSync](#)[Device Farm](#)[Mobile Analytics](#)

## AR & VR

[Amazon Sumerian](#)

**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 ▾

Support

## AWS Lambda X

Lambda &gt; Functions

## Functions (52)

Actions ▾

Create function

Filter by tags and attributes or search by keyword



&lt; 1 2 3 4 5 6 &gt;

Function name

Description

Runtime ▾

Code size ▾

Last Modified ▾

# Create function

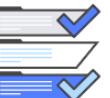
## Author from scratch

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. X

[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 X

 Amazon CloudWatch Logs

Add triggers from the list on the left

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.](#) 

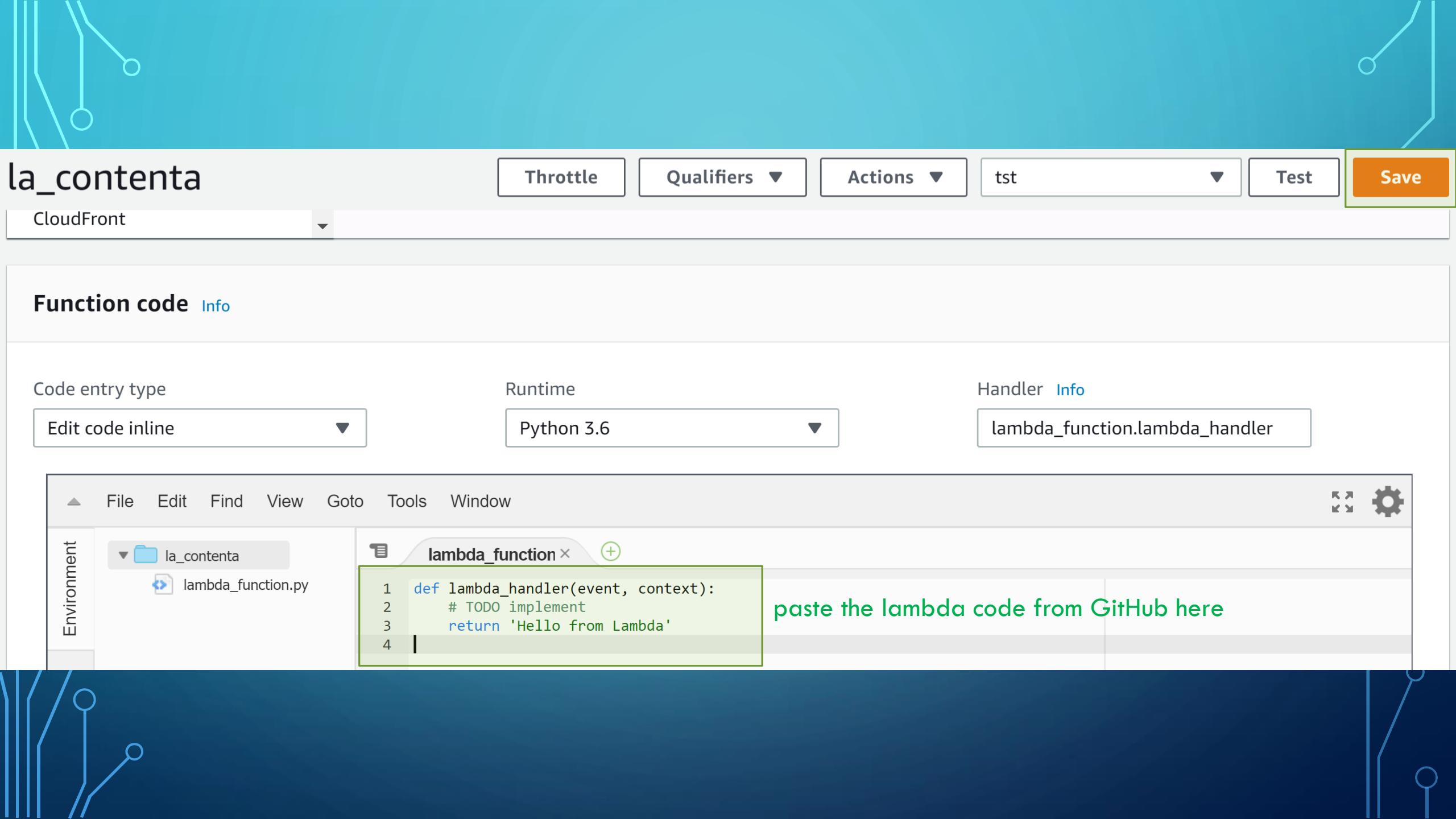
### Skill ID verification

- Enable (recommended)
- Disable

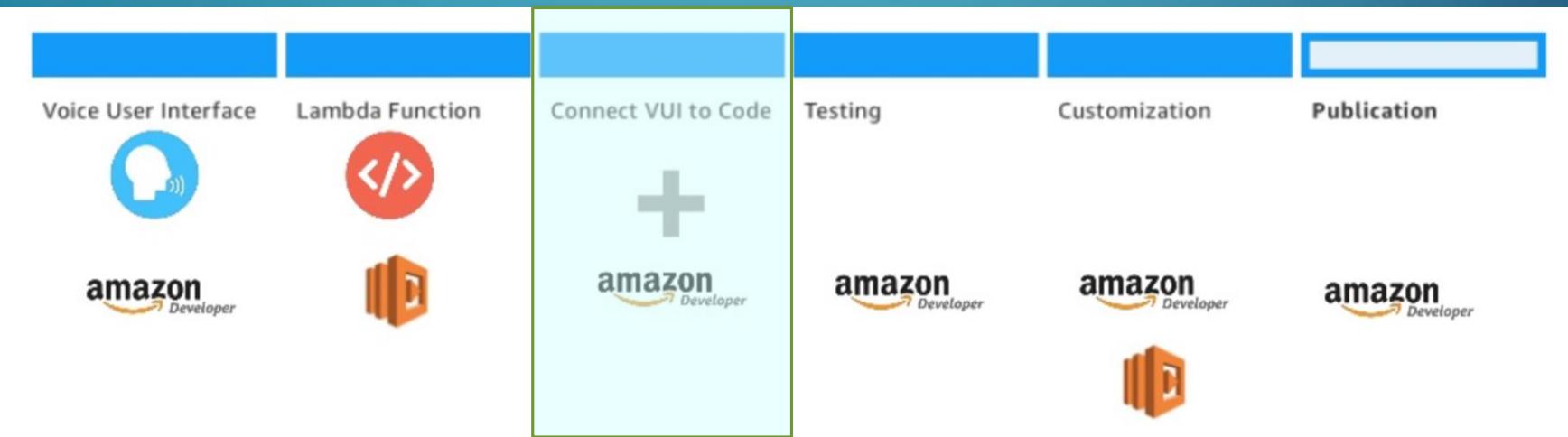
Lambda will add the necessary permissions for Amazon Alexa to invoke your Lambda function from this trigger. [Learn more](#) about the Lambda permissions model.

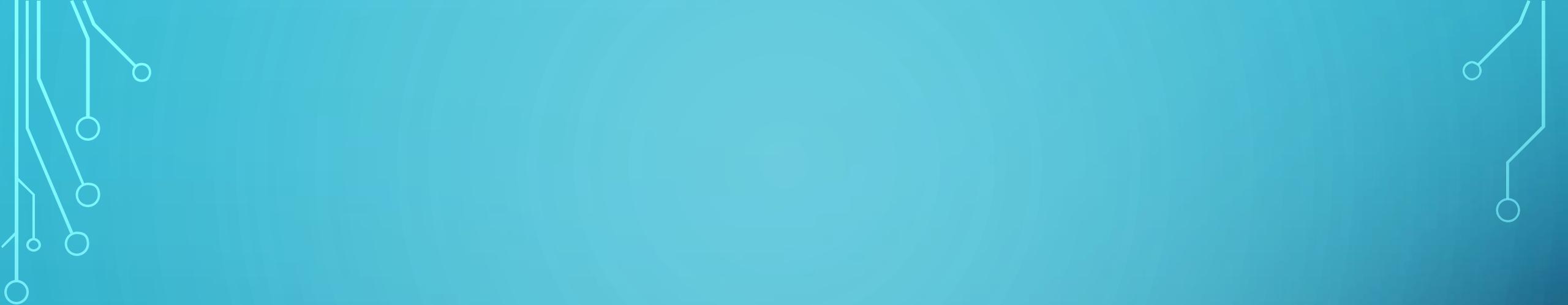
Cancel

Add



## STEP 3: CONNECT YOUR VOICE USER INTERFACE TO YOUR LAMBDA FUNCTION





Lambda > Functions > la\_contenta

ARN - arn:aws:lambda:us-east-1:694910018021:function:la\_contenta

## la\_contenta

Throttle

Qualifiers ▾

Actions ▾

Select a test event.. ▾

Test

Save



 Save Endpoints

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

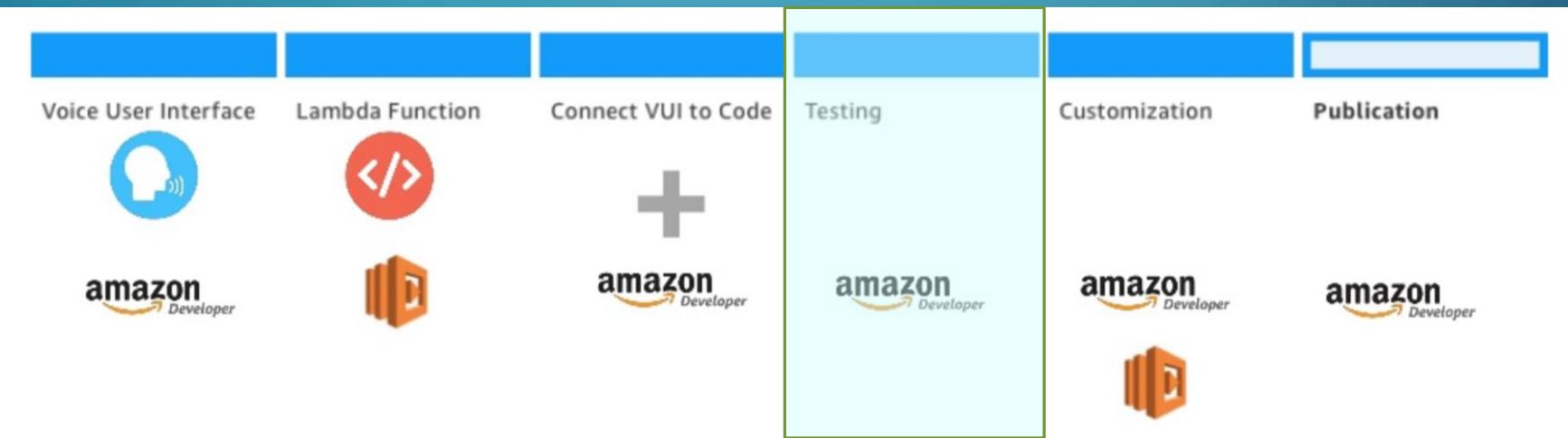
North America   
(Optional)

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>:

## STEP 4: TEST THE ALEXA SKILL



amazon alexa

Your Skills La Contenta Build Test Distribution

Test is enabled for this skill

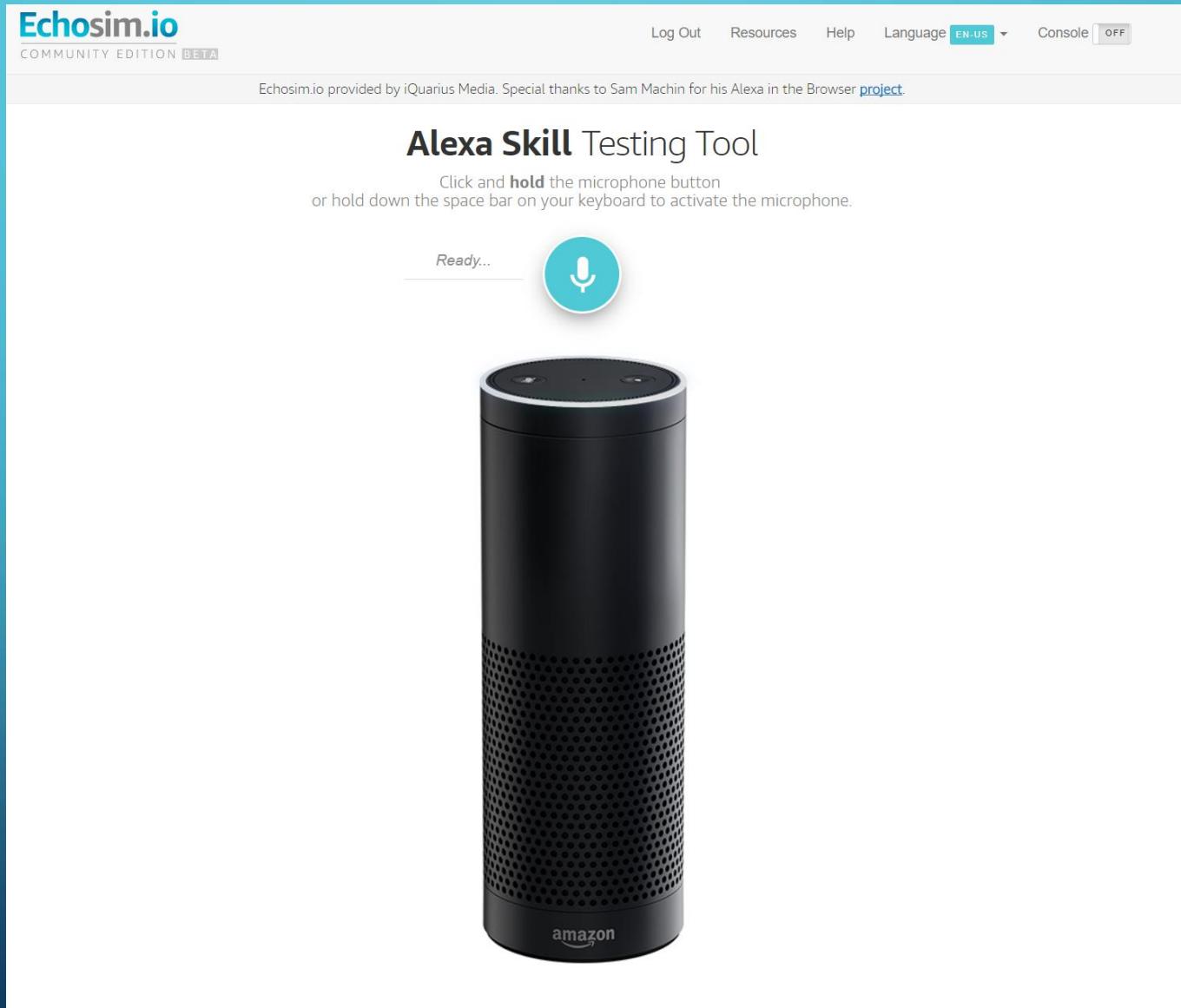
Alexa Simulator Manual JSON Voice & Tone

English (US)  launch la contenta

The screenshot shows the 'Test' tab of the Alexa Skills Kit interface. A green box highlights the 'Test is enabled for this skill' toggle switch. Below it, the 'Alexa Simulator' tab is active, showing a dropdown for language (English (US)) and a text input field containing 'launch la contenta'. A microphone icon is next to the input field. In the background, there are two blurred speech bubbles.

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



# 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: {0} 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

```
{  
  "session": {  
    "new": true,  
    "sessionId": "SessionId.ae065503-a224-43ba-a",  
    "application": {  
      "applicationId": "amzn1.ask.skill.356422e7",  
    },  
    "attributes": {},  
    "user": {  
      "userId": "amzn1.ask.account.AFQFHLCX566V",  
    }  
  },  
  "request": {  
    "type": "IntentRequest",  
    "requestId": "EdwRequestId.c65bef31-6ac3-4a4",  
  },  
}
```

Service Response

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

Listen

aws Services Resource Groups λ lambda@techemstudio

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

**InspirationalWomen** Qualifiers Actions Select a test event.. Test

Configure test events

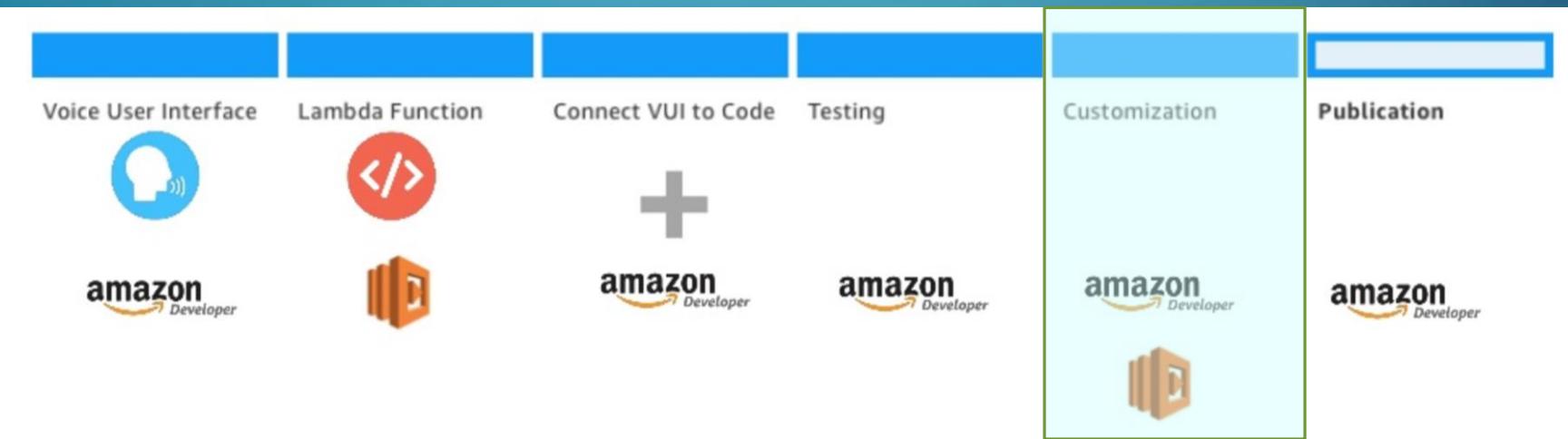
✖ Execution result: failed (logs)  
▶ Details

Configuration Triggers Monitoring

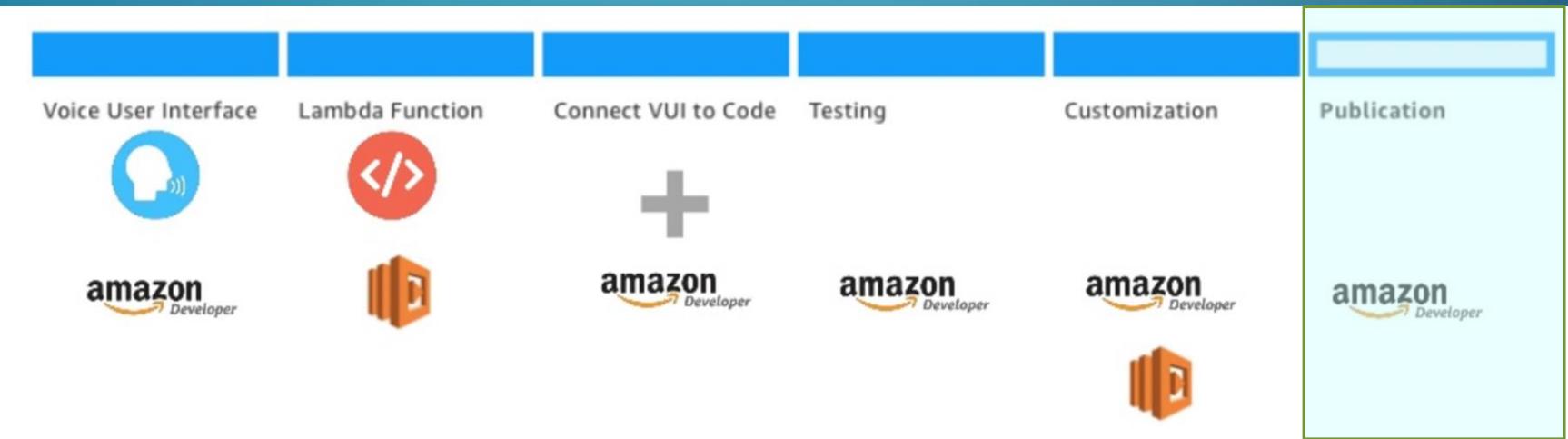
▼ Function code

Code entry type: Edit code inline Runtime: Python 3.6 Handler: Info 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.

# GO FORTH AND DEVELOP!!

- 1) Sign up for an [Amazon Developers account](#)\*.
- 2) Sign up for an [AWS account](#)\*. When registering, select the Personal Account option. It will ask you for credit card information but will not charge your card if you're using the account just to create basic Alexa skills.  
*\* If you already have an Amazon account, just sign in using your existing login.*
- 3) For step-by-step tutorials on how to create skills including a facts skill, a trivia skill, and a quiz game skill, use Amazon's [Alexa Skills Kit Tutorials](#).