

CREATE YOUR FIRST ALEXA SKILL

PRESENTED BY



CapTech.

Others Talk, We Listen.



“DEAR WOMEN,
WE NEED YOU”

- The Tech Industry



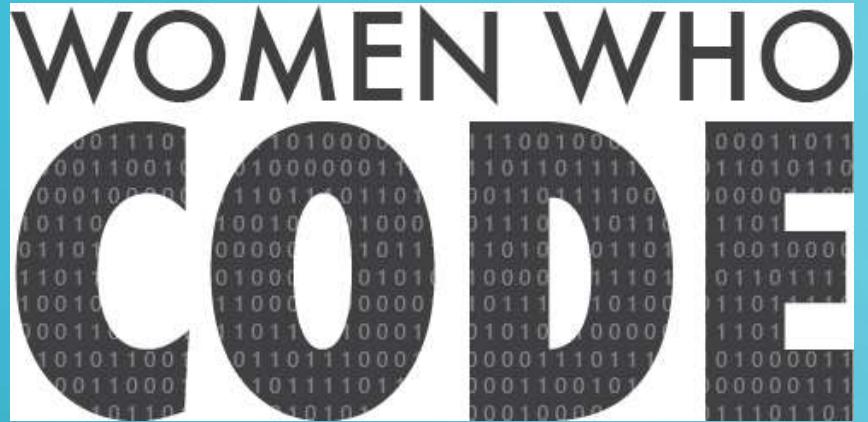
Tech jobs are growing. **Fast.**

THE MARKET IS NOT PREPARED TO FILL **600,000+ jobs**

Women in the Workforce

- 51% of professional occupations
- 26% of 3.8 million computing jobs
- 4.2% of investing Venture Partners
- 7% of Venture Capital recipients





OUR MISSION

Inspiring women to excel in
technology careers





60
cities

20
countries



*Study Groups
Patterns
Languages
Dev Ops*

*New Technology Trends
UI/UX
Microservices*

*Infrastructure
Workshops*

*Networking
Hack-A-Thons
Security
Hands On Skill Development*

Technical Talks

AND SO MUCH MORE...

**PRESENTED TO WOMEN BY WOMEN
ALL ARE WELCOME**

**WE HELP DEVELOP
EACH OTHERS' SKILLS**

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.



“The age of touch could soon come to an end. From smartphones and smartwatches, to home devices, to in-car infotainment systems, touch is no longer the primary user interface.”

Source: Design News

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"

STEP 1: SET UP THE VOICE USER INTERFACE (VUI) USING THE ALEXA SKILLS KIT (ASK)





OPEN THE SAMPLE CODE IN GITHUB

<https://github.com/techemstudios/inspiring-women-alexam/>

LOGIN TO OUR DEMO AMAZON DEVELOPERS ACCOUNT

<https://developer.amazon.com>

Username: alexa@techemstudios.com

Password: techme17

DASHBOARD

APPS & SERVICES

ALEXA

REPORTING

Get started with Alexa

Add new voice-enabled capabilities using the Alexa Skills Kit, or add voice-powered experien



Alexa Skills Kit

Easily add new skills to Alexa

[Get Started >](#)



Alexa Voice Service

Bring voice capabilities to your connected device

[Get Started >](#)

Skill Information	<input checked="" type="checkbox"/>
Interaction Model	<input checked="" type="checkbox"/>
Configuration	<input checked="" type="checkbox"/>
SSL Certificate	<input checked="" type="checkbox"/>
Test	<input checked="" type="checkbox"/>
Publishing Information	<input checked="" type="checkbox"/>
Privacy & Compliance	<input checked="" type="checkbox"/>

Skill Type

Define a custom interaction model or use one of the predefined skill APIs. [Learn more](#)

Custom Interaction Model

Smart Home Skill API

Flash Briefing Skill API

Video Skill API

Language

Language of your skill

English (U.S.) ▾

Name

Name of the skill that is displayed to customers in the Alexa app. Must be between 2-50 characters.

Inspirational Women

Invocation Name

The name customers use to activate the skill. For example, "Alexa ask Tide Pooler..."

Inspirational Women

 For successful Alexa Skills Certification, please review and follow our [Invocation Name Guidelines](#) as well as our [Certification Requirements](#).

Global Fields

These fields apply to all languages supported by the skill.

Audio Player

Does this skill use the audio player directives?

Yes No

[Learn more](#)

Video App

Does this skill use the video app directives?

Yes No

[Learn](#)

[more](#)

Render Template

Does this skill use the Render Template directives?

Yes No

[Learn more](#)

Save

[Back to All Skills](#)



Inspirational Women

Custom

ID: amzn1.ask.skill.356422e7-c0c8-4f0b-b3f0-568308f99ae2

English (U.S.)

Add a New Language

Skill Information

Interaction Model

Configuration

Test



Try the skill builder (beta), an intuitive interface for building your interaction model and creating dialog prompts

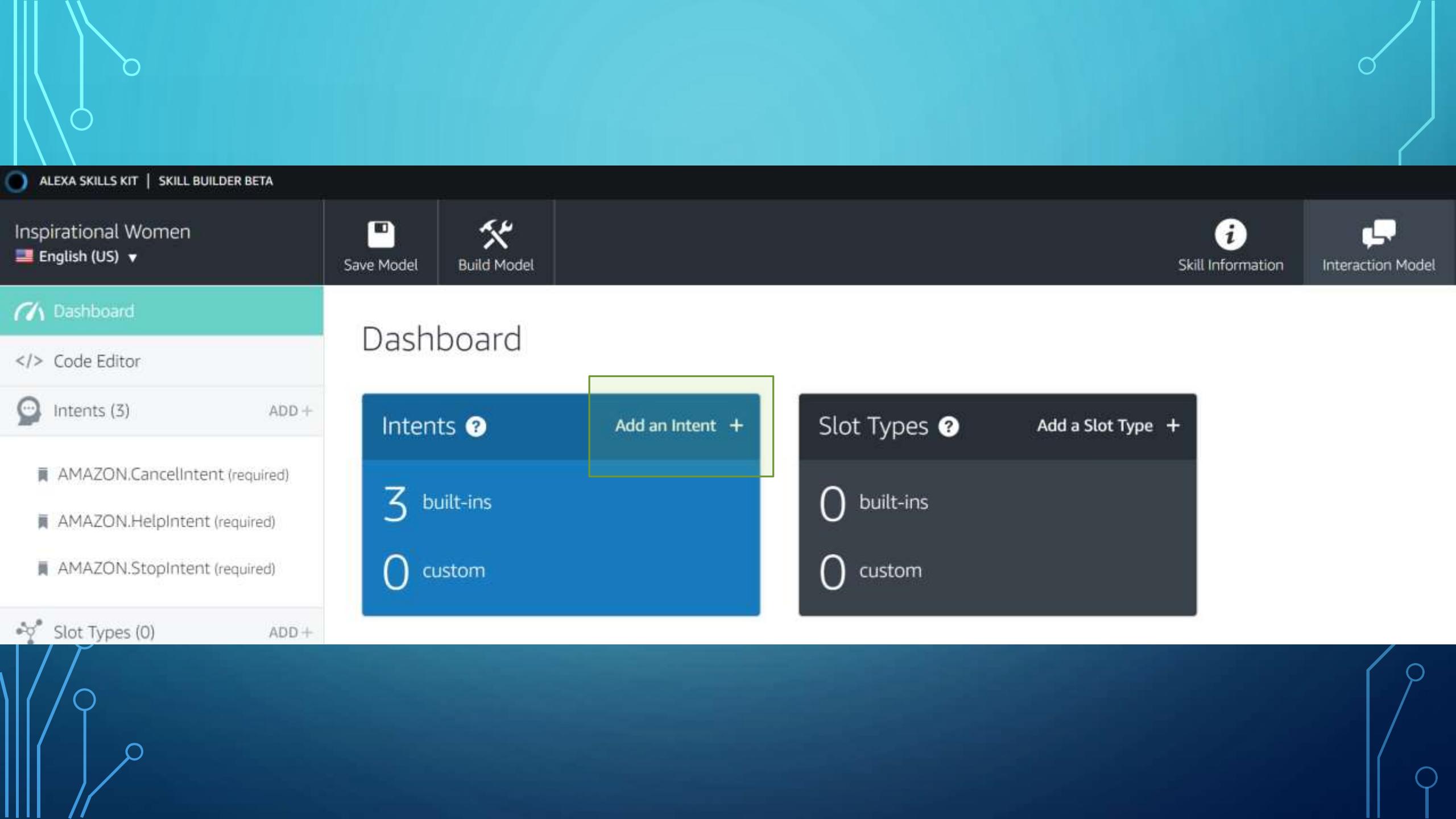
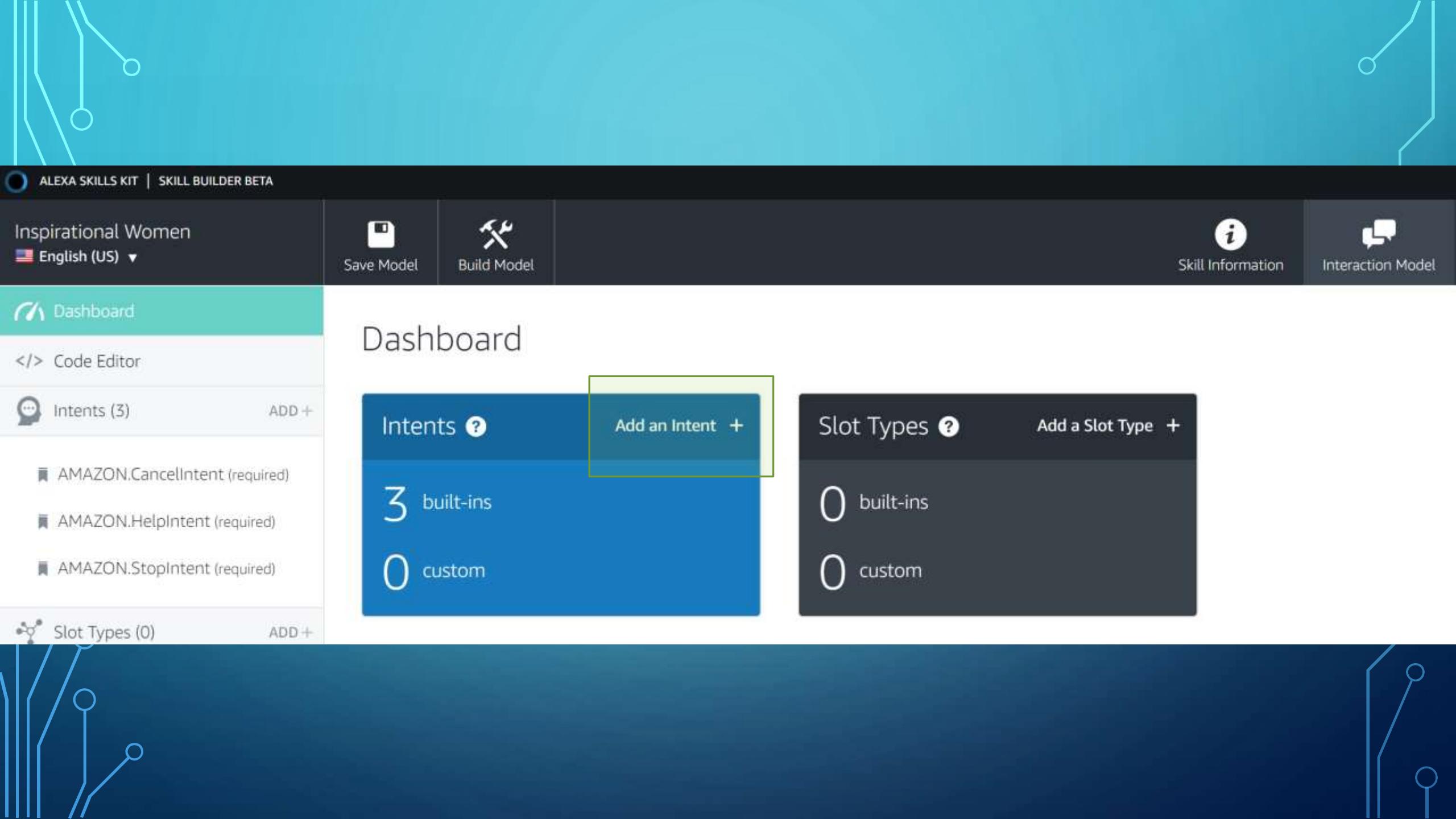
[Launch Skill Builder BETA](#)

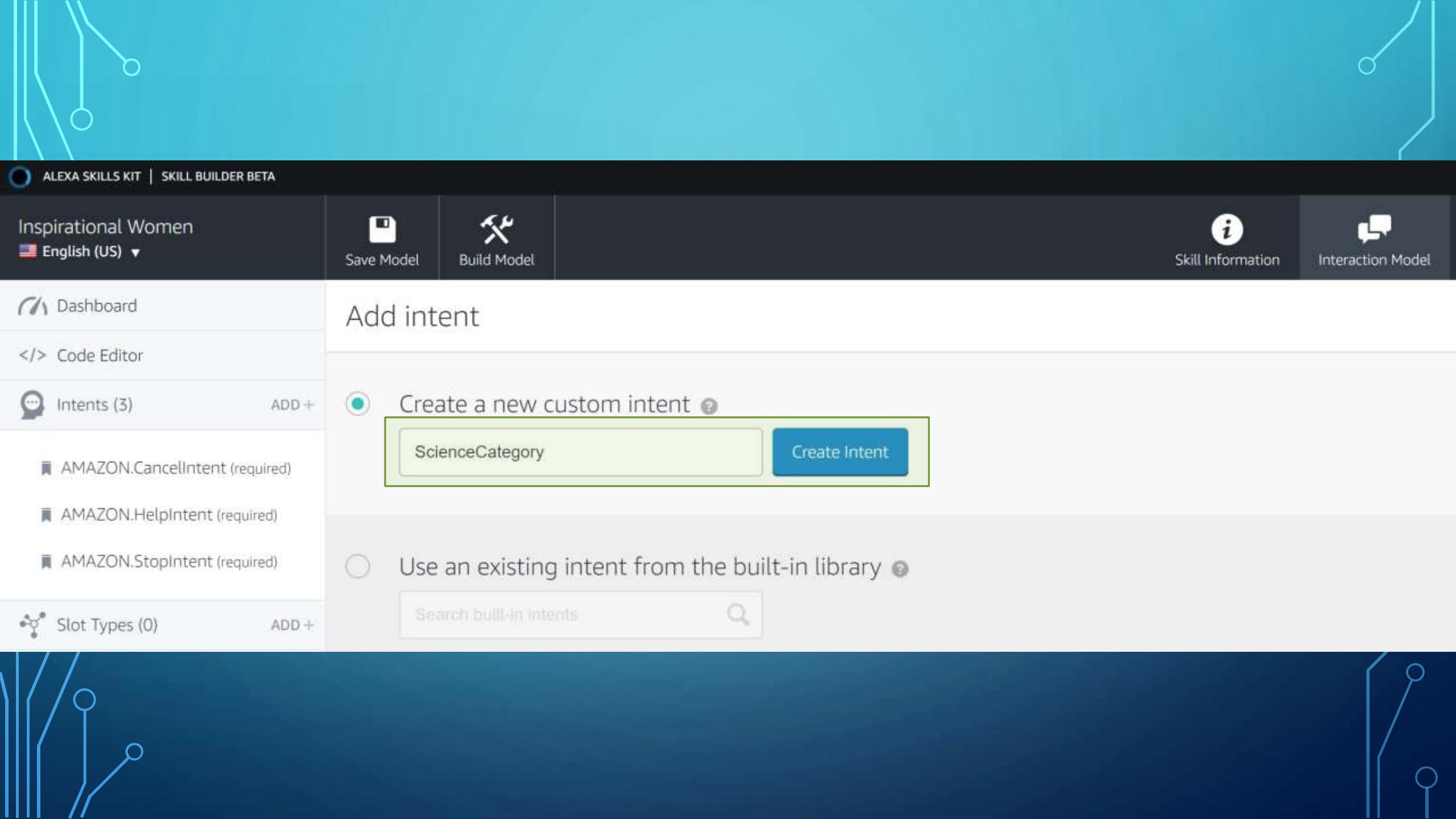
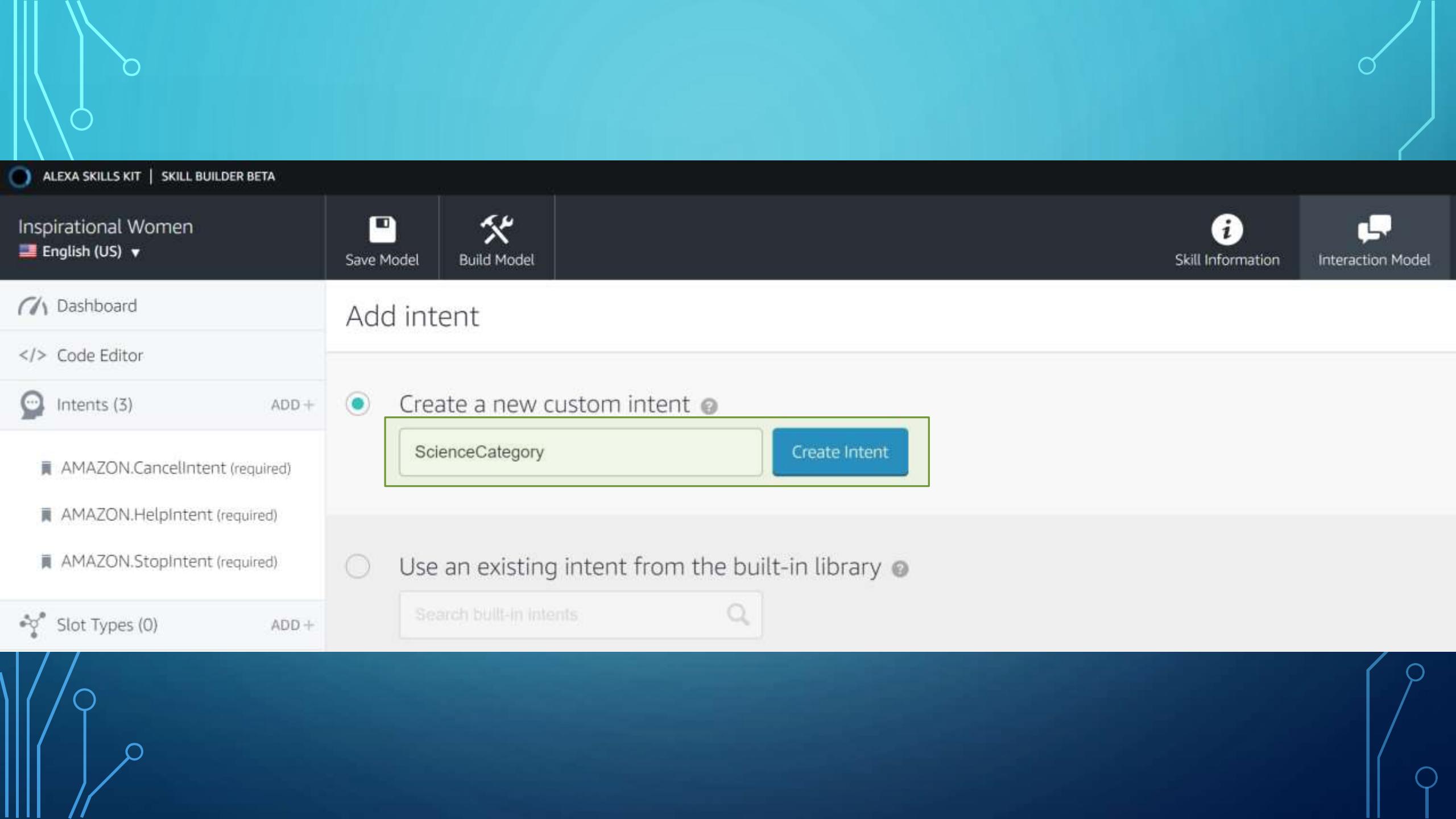


A **voice user interface** (VUI) allows people to use their voice to control computers and devices.

TERMINOLOGY







ALEXA SKILLS KIT | SKILL BUILDER BETA

Inspirational Women English (US) ▾

Save Model Build Model

Skill Information Interaction Model Configuration

Dashboard

</> Code Editor

Intents (7) ADD +

AMAZON.CancelIntent (required)

AMAZON.HelpIntent (required)

AMAZON.StopIntent (required)

EngineeringCategory

MathCategory

ScienceCategory

TechnologyCategory

(2) (3) MathCategory

Sample Utterances (6) ? (1)

math +

mathematicians

mathematical

mathematical category

mathematics category

mathematics

math category

Intent Slots (0) ?

ORDER REQ SLOT

Create a new slot...

The screenshot shows the Alexa Skills Kit Skill Builder Beta interface. The top navigation bar includes 'ALEXA SKILLS KIT | SKILL BUILDER BETA', 'Inspirational Women' (selected), 'English (US)', and buttons for 'Save Model', 'Build Model', 'Skill Information', 'Interaction Model', and 'Configuration'. The left sidebar lists intents: 'AMAZON.CancelIntent (required)', 'AMAZON.HelpIntent (required)', 'AMAZON.StopIntent (required)', 'EngineeringCategory', 'MathCategory' (selected and highlighted in green), 'ScienceCategory', and 'TechnologyCategory'. The main content area is titled 'MathCategory' with '(2)' and '(3)' annotations. It shows a list of sample utterances: 'math', '*mathematicians*', '*mathematical*', '*mathematical category*', '*mathematics category*', '*mathematics*', and '*math category*'. A green box highlights the first utterance 'math' with annotation '(1)'. To the right, there's a section for 'Intent Slots (0)' with columns for 'ORDER', 'REQ', and 'SLOT', and a button to 'Create a new slot...'. The overall theme features a teal and white color scheme with decorative blue line art at the top and bottom.

STEP 2: CREATE YOUR SKILL LOGIC USING AN AWS LAMBDA FUNCTION



COMPONENTS OF AN ALEXA SKILL



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.

LOGIN TO OUR DEMO AWS ACCOUNT

<https://console.aws.amazon.com/>

Account ID: 694910018021

Username: lambda@techemstudios.com

Password: techme17



Services ▾

Resource Groups ▾



lambda@techemstudios.com @...

Lambda

AWS Lambda

Run code without thinking about servers.
Pay for only the compute time you consume.

Get started

Author a Lambda function from scratch, or choose from one of many preconfigured examples.

[Create a function](#)

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.

The screenshot shows a portion of the AWS Lambda console interface. At the top, there is a dark header bar with a bell icon, the text "N. Virginia ▾", and a "Support" dropdown. Below this, a vertical list of AWS regions is displayed. The "US East (N. Virginia)" region is highlighted with a yellow vertical bar to its left. The other regions listed are: US East (Ohio), US West (N. California), US West (Oregon), Canada (Central), EU (Ireland), EU (Frankfurt), EU (London), Asia Pacific (Singapore), Asia Pacific (Sydney), Asia Pacific (Seoul), Asia Pacific (Tokyo), Asia Pacific (Mumbai), and South America (São Paulo).

- US East (N. Virginia)**
- US East (Ohio)
- US West (N. California)
- US West (Oregon)
- Canada (Central)
- EU (Ireland)
- EU (Frankfurt)
- EU (London)
- Asia Pacific (Singapore)
- Asia Pacific (Sydney)
- Asia Pacific (Seoul)
- Asia Pacific (Tokyo)
- Asia Pacific (Mumbai)
- South America (São Paulo)



Services ▾

Resource Groups ▾



lambda@techemstudios.com @...

Lambda > Functions > Create function

ⓘ Welcome to AWS Lambda! You can get started on creating your first Lambda function by choosing one of the blueprints below. X

Blueprints Info

[Export](#)[Author from scratch](#) Filter by tags and attributes or search by keyword< 1 2 3 4 5 6 7 ... 11 >



Services ▾

Resource Groups ▾



lambda@techemstudios.com @...

Lambda > Functions > Create function > Author from scratch

Basic information Info

Name*

InspirationalWomen

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.

lambda_basic_execution

* These fields are required.

Cancel

Previous

Create function



Inspiration alWomen

Qualifiers ▾

Actions ▾

Save

Select a test event.. ▾

Save and test

Configuration

Triggers

Monitoring

(3)

▼ Function code

Code entry type

Edit code inline

Runtime

Python 3.6

Handler [Info](#)

index.handler

(1)

index.py

```
1 * exports.handler = (event, context, callback) => {
2     // TODO implement
3     callback(null, 'Hello from Lambda');
4 };
```

(2) – paste your lambda code here



Services ▾

Resource Groups ▾



lambda@techemstudio

Lambda > Functions > InspirationalWomen

ARN - arn:aws:lambda:us-east-2:694910018021:function:InspirationalWomen

InspirationalWomen

Qualifiers ▾

Actions ▾

Test ▾

Test

Configuration

Triggers

Monitoring

You do not have any triggers for this function.

+ Add trigger

⟳ Refresh triggers

▶ View function policy

Add trigger

Configure your Lambda function **InspirationalWomen** to respond to events from the selected trigger. Click on the box below to select your trigger type.



Filter integrations



API Gateway



AWS IoT



Alexa Skills Kit



Alexa Smart Home

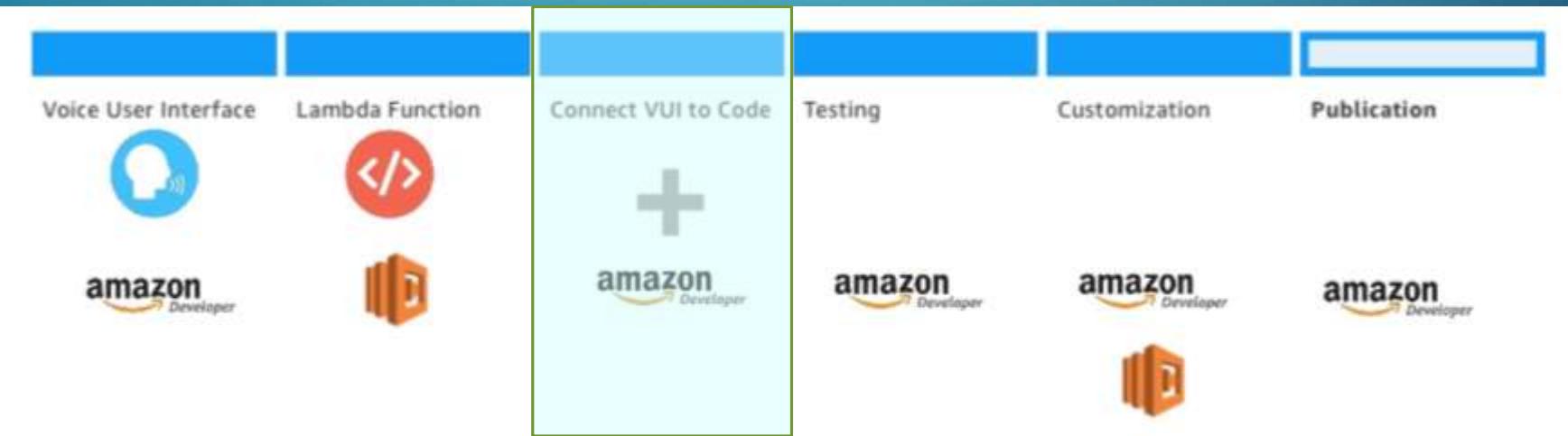


CloudFront

Cancel

Submit

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



Copy this

Lambda > Functions > InspirationalWomen

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

InspirationalWomen

Qualifiers ▾

Actions ▾

Save

Select a test event.. ▾

Save and test

✓ Successfully added the trigger to function InspirationalWomen. The function is now receiving events from the trigger. To configure the Alexa service to work with your Lambda function, go to the [Alexa Developer portal](#). X

Configuration

Triggers

Monitoring



Alexa Skills Kit

alexa-appkit.amazon.com

Delete

To configure your Alexa skill, go to the [Alexa Developer Portal](#).

English (U.S.)

Add a New Language

Skill Information



Interaction Model



Builder **BETA**

Configuration



Test



Publishing Information



Privacy & Compliance



Skills Beta Testing NEW

Status Not yet eligible

Global Fields

These fields apply to all languages supported by the skill.

Endpoint

Service Endpoint Type:



AWS Lambda ARN (Amazon Resource Name)

Recommended



HTTPS

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

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

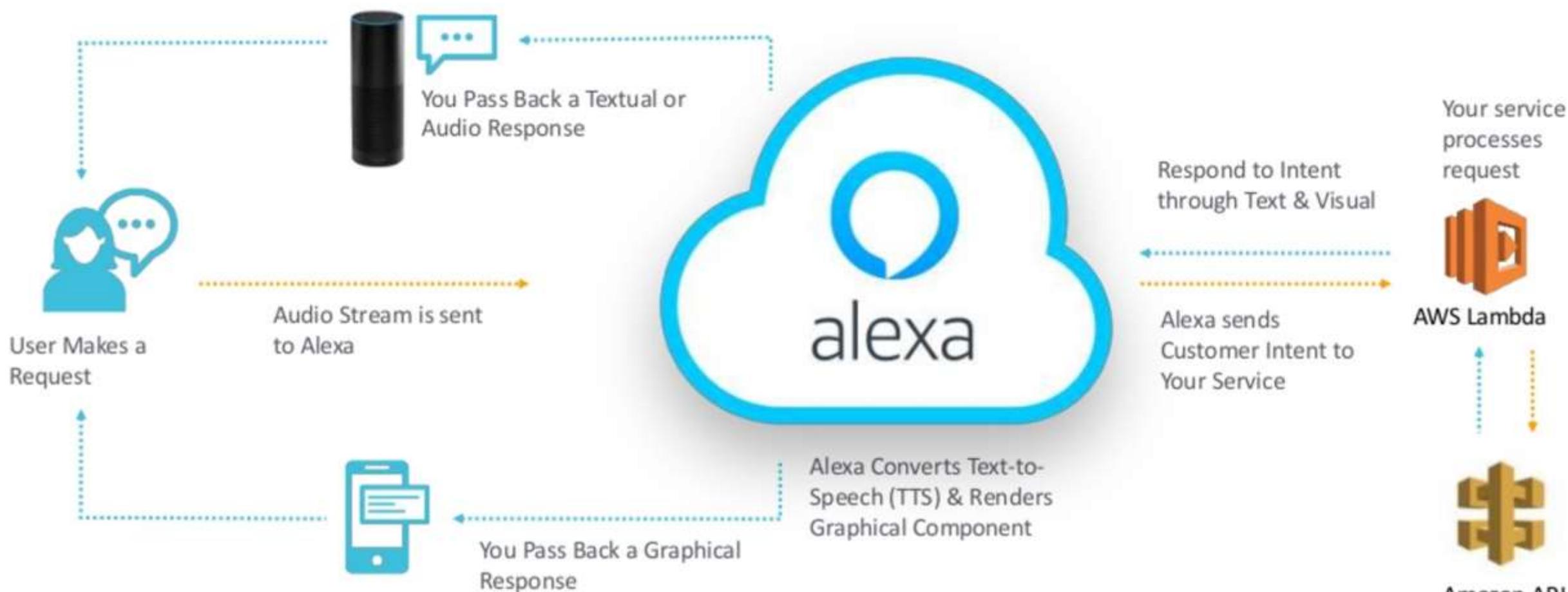
Provide geographical region endpoints?

(Optional)

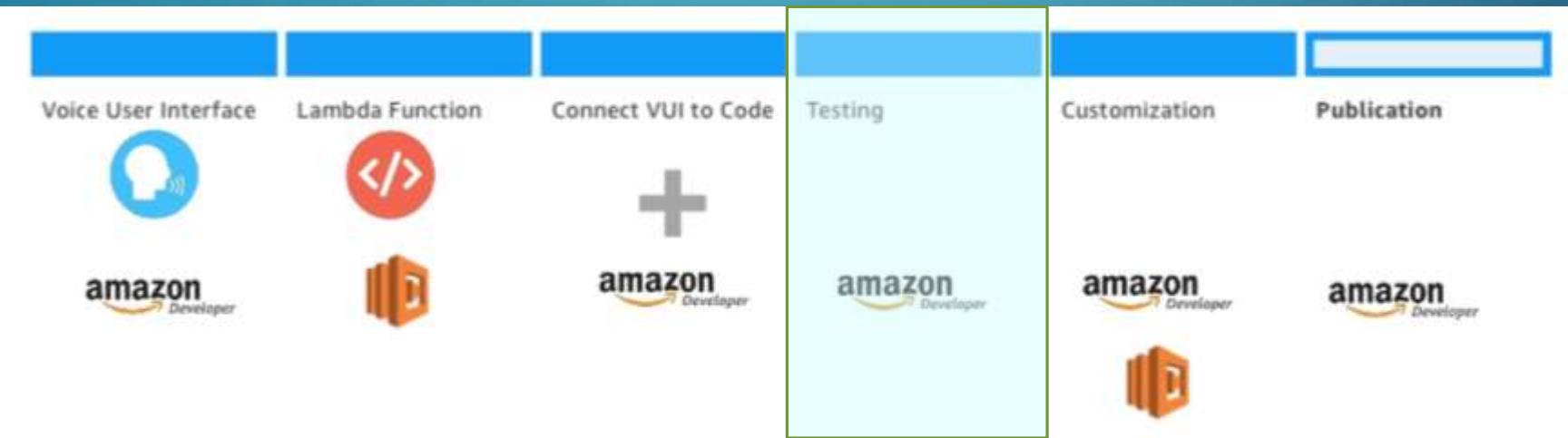
Yes No

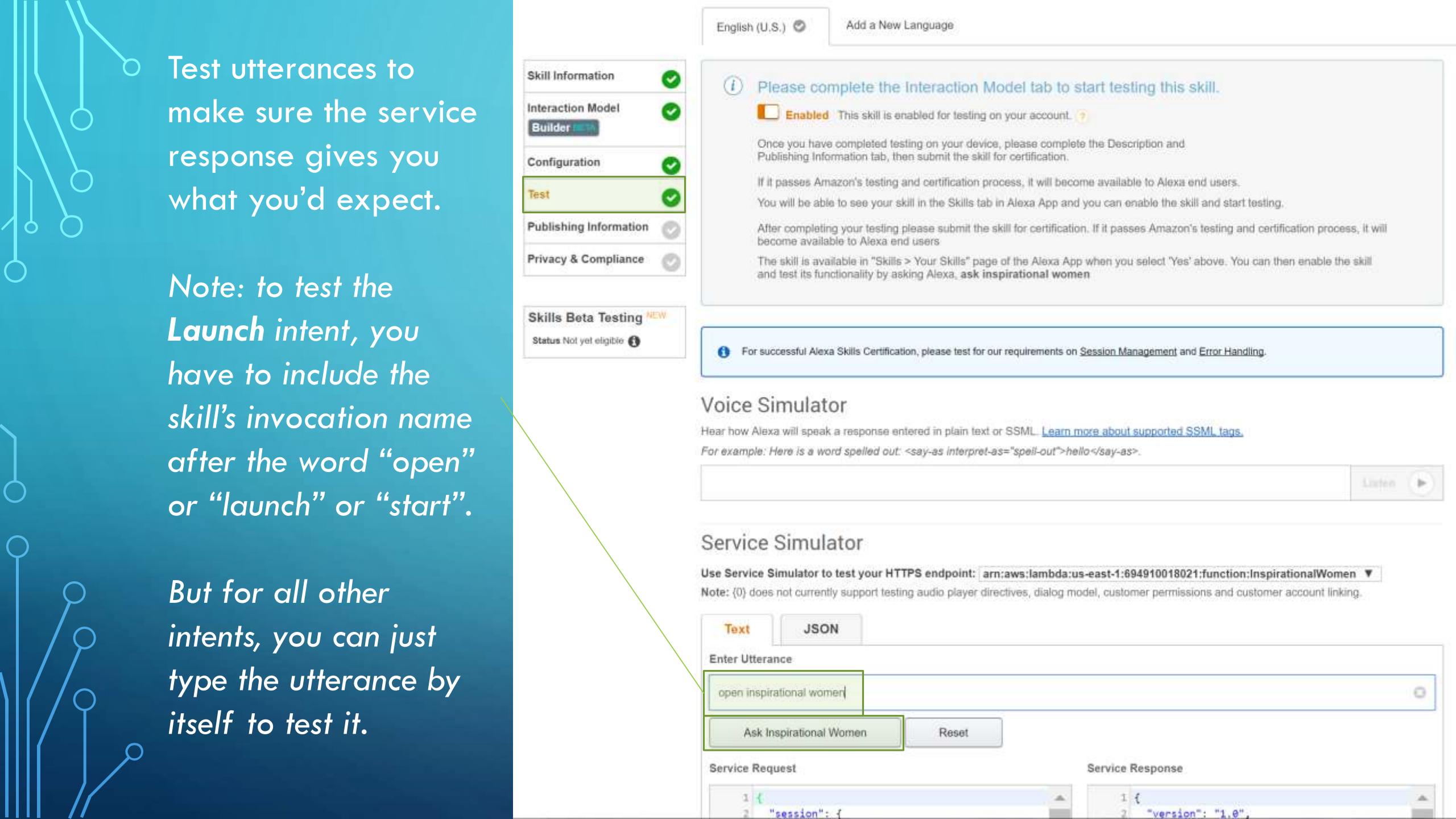
The Life Cycle of our Skill

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



STEP 4: TEST THE ALEXA SKILL





Test utterances to make sure the service response gives you what you'd expect.

*Note: to test the **Launch intent**, you have to include the skill's invocation name after the word “open” or “launch” or “start”.*

But for all other intents, you can just type the utterance by itself to test it.

English (U.S.)  Add a New Language

Skill Information  Interaction Model  Builder  Configuration  Test  Publishing Information  Privacy & Compliance 

Skills Beta Testing  Status Not yet eligible 

Please complete the Interaction Model tab to start testing this skill.
 Enabled This skill is enabled for testing on your account. 
Once you have completed testing on your device, please complete the Description and Publishing Information tab, then submit the skill for certification.
If it passes Amazon's testing and certification process, it will become available to Alexa end users.
You will be able to see your skill in the Skills tab in Alexa App and you can enable the skill and start testing.
After completing your testing please submit the skill for certification. If it passes Amazon's testing and certification process, it will become available to Alexa end users.
The skill is available in "Skills > Your Skills" page of the Alexa App when you select 'Yes' above. You can then enable the skill and test its functionality by asking Alexa, ask inspirational women

For successful Alexa Skills Certification, please test for our requirements on [Session Management](#) and [Error Handling](#).

Voice Simulator

Hear how Alexa will speak a response entered in plain text or SSML. [Learn more about supported SSML tags](#).
For example: Here is a word spelled out: <say-as interpret-as="spell-out">hello</say-as>.



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  Enter Utterance

Ask Inspirational Women Reset

Service Request  Service Response

```
1 {  
2   "session": {  
3     "version": "1.0",  
4     "id": "12345678901234567890123456789012",  
5     "attributes": {},  
6     "user": {},  
7     "context": {}  
8   }  
9 }
```

Troubleshoot Service Response 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.356422a7  
    },  
    "attributes": {},  
    "user": {  
      "userId": "amzn1.ask.account.AFQPHLCX566V\\  
    }  
  },  
  "request": {  
    "type": "IntentRequest",  
    "requestId": "EdmRequestId.c65bef31-6ac3-4a4  
  }  
}
```

Service Response

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

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

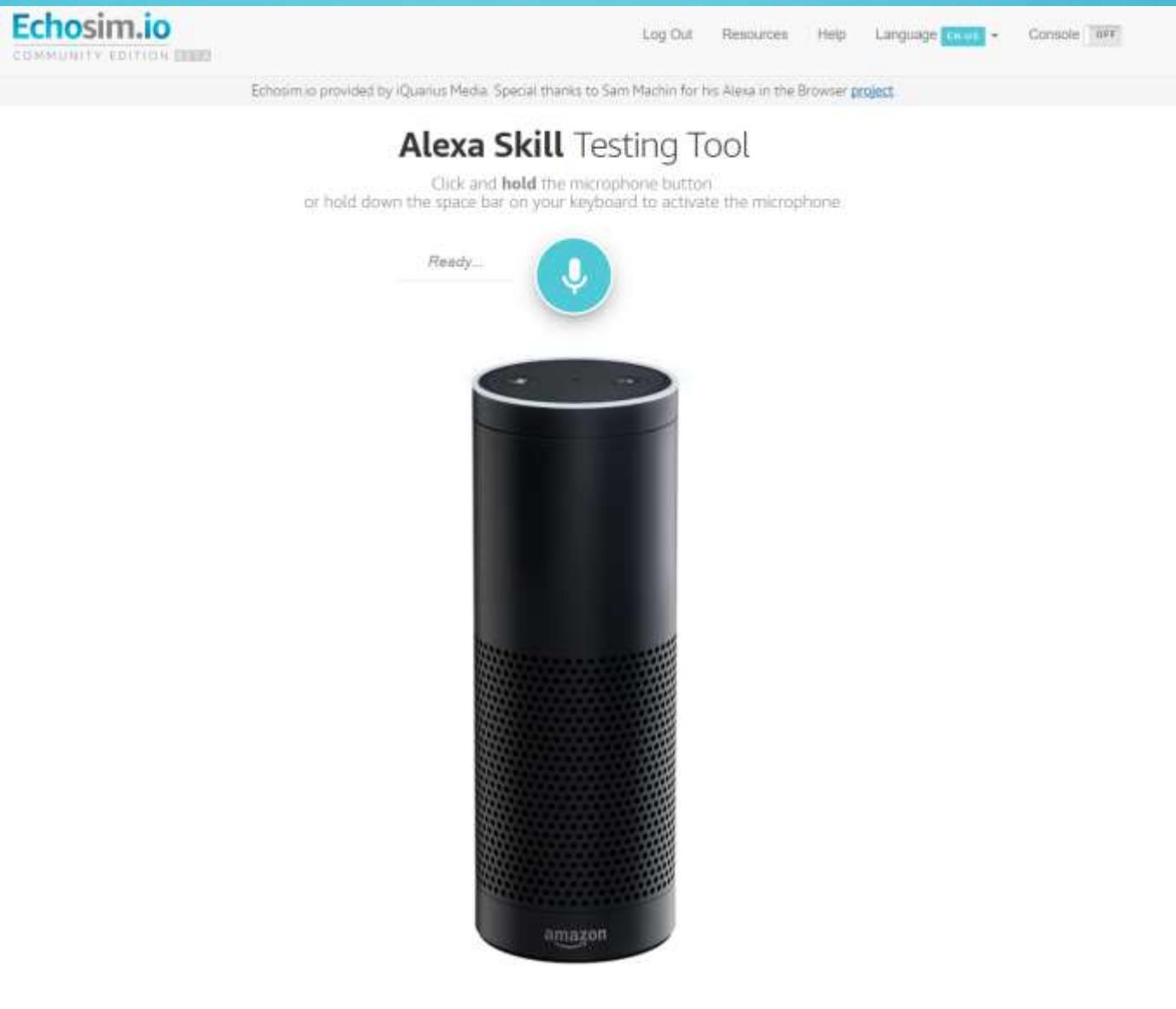
✖ Execution result: failed (logs)
▶ Details

Configuration Triggers Monitoring

▼ Function code

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

Go to Echosim.io to perform verbal testing of your skill if you don't have an Alexa-enabled device.



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.
- You can also apply to receive a \$100 AWS promotional credit and can receive an additional \$100 per month if your skill ever incurs AWS usage charges, making it free to build and host most Alexa skills.

GO FORTH AND DEVELOP!!

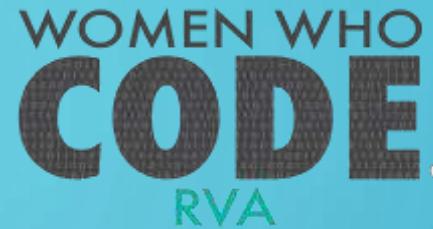
- 1) Sign up for an [Amazon Developers account](#)*.
- 2) Sign up for an [AWS account](#)*. When registering, select the Personal Account option. It will ask you for credit card information but will not charge your card if you're using the account just to create basic Alexa skills.
** If you already 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](#).



WWDC 17
iOS Lead at Circa
2.5 years iOS experience
Formerly Apple

#ApplaudHer

HOW TO GET INVOLVED!



- Join Us –
 - Sign up today at www.womenwhocode.com
 - Register for meetups at www.meetup.com/Women-Who-Code-Richmond
- Participate, participate, participate
- Send us ideas and feedback
- Lead (or help lead) a community or a single event
 - training, study groups, workshop, code circle
- Host an event
 - provide space, food and Wifi

STAY CONNECTED!

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wwcrva-slack.herokuapp.com



WOMEN WHO CODE

RVA

THANK YOU!