



WHOA THERE!

DELETE THIS SLIDE BEFORE PRESENTING

1. Copy these slides to your Google Drive Account or Download as a Powerpoint File.
2. Customize the Wifi info and Introduction slides for your event.
3. Rehearse this presentation at least 1 - 2 times before the workshop.

Workshop

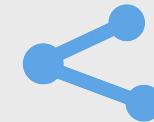
Hacking with Amazon Alexa

Welcome to *MLH Localhost: Hacking with Alexa!*



Wifi Network:
[Network]

Wifi Password:
[Password]



Event Hashtag:
#MLHLocalhost

Twitter Handle:
@MLHacks



- Welcome! My name is
[INSERT YOUR NAME].*
- 1** I'm here to lead this session & help you learn something new today!
 - 2** I'm a [LEVEL OF STUDY] at [SCHOOL].
 - 3** My favorite programming language / tool is [LANGUAGE OR TOOL].

1

*Using your Web Browser,
Open this URL & Fill out the Form:*

<http://mlhlocal.host/checkin>

2

Afterwards, Check your Email to Find:

- Setup Instructions
- An Invite to the MLH Slack
- The Code Samples
- A Workshop FAQ
- These Workshop Slides
- More Learning Resources



Our Mission is to Empower Hackers.

65,000+
HACKERS

12,000+
PROJECTS CREATED

3,000+
SCHOOLS

We hope you learn something awesome today!
Find more resources: <http://mlh.io/>



Sign up for the MLH Career Lab!

<http://mlhlocal.host/career-lab>

- Browse a curated list of hacker jobs.
- Apply for jobs and internships from companies that want to recruit directly from the MLH community.
- Receive updates and career advice from MLH!



What will you **learn today?**

- 1 Understand Voice User Interfaces & what you can build using them.
- 2 Meet Alexa, an intelligent personal assistant developed by Amazon.
- 3 Create your first voice powered app with Amazon Alexa.

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What is Alexa?

Alexa is a Voice User Interface (VUI), that lets you **speak** commands, instead of clicking buttons or typing on your keyboard.

Speech



Request



Response

Alexa listens to spoken input, uses it to execute tasks or skills in the cloud, and then returns output -- just like a JavaScript function.

Why do Voice UIs Matter?



Instead of typing, clicking, or tapping - we can physically separate ourselves from our devices and speak commands naturally.

Voice UIs can run code in the cloud and communicate with IoT devices, making them ideal for homes, cars, & more.

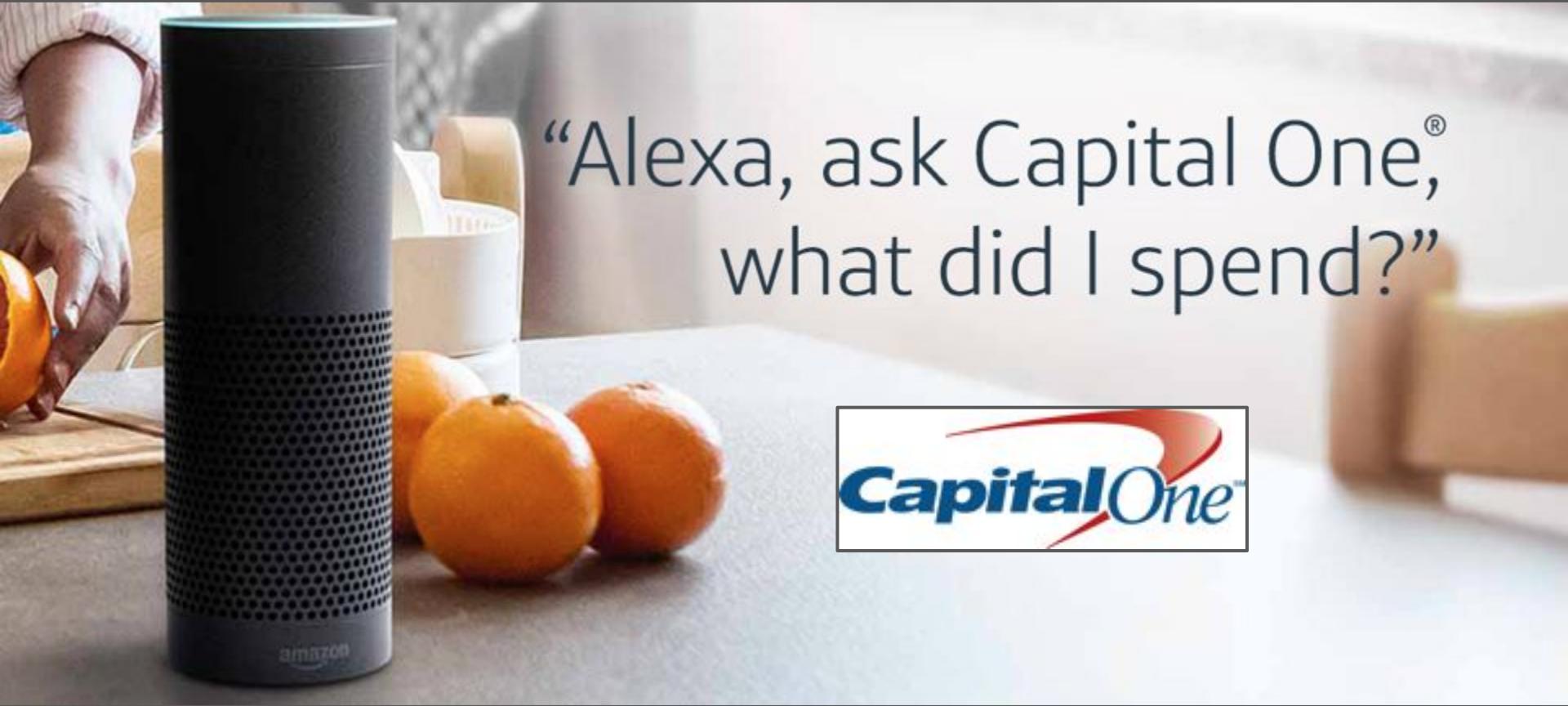


What can you build with Alexa?



Alexa, ask Lyft for a Lyft Line to work.

What can you build with Alexa?



“Alexa, ask Capital One,
what did I spend?”



Alexa, ask Capital One, what did I spend?

What can you build with Alexa?



Your afternoon pick-me-up.



*“Alexa, tell Starbucks
to start my order.”*

[Get started ▶](#)

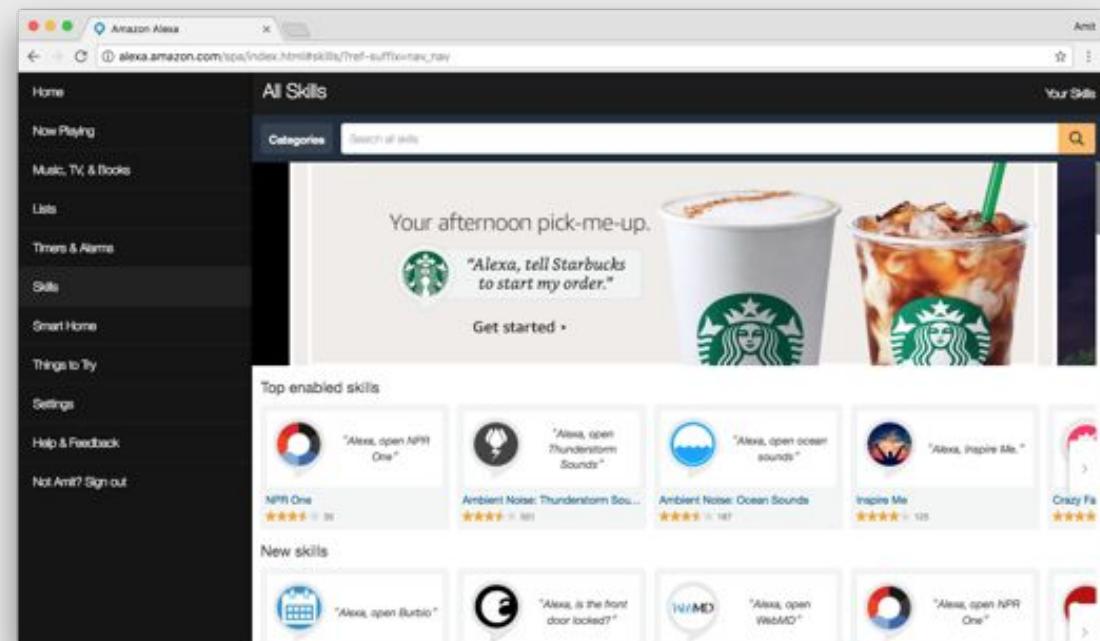


Alexa, tell Starbucks start my order.

Alexa has Skills. Lots of them.

Companion app for device setup, skills, remote control, and more.

alexa.amazon.com



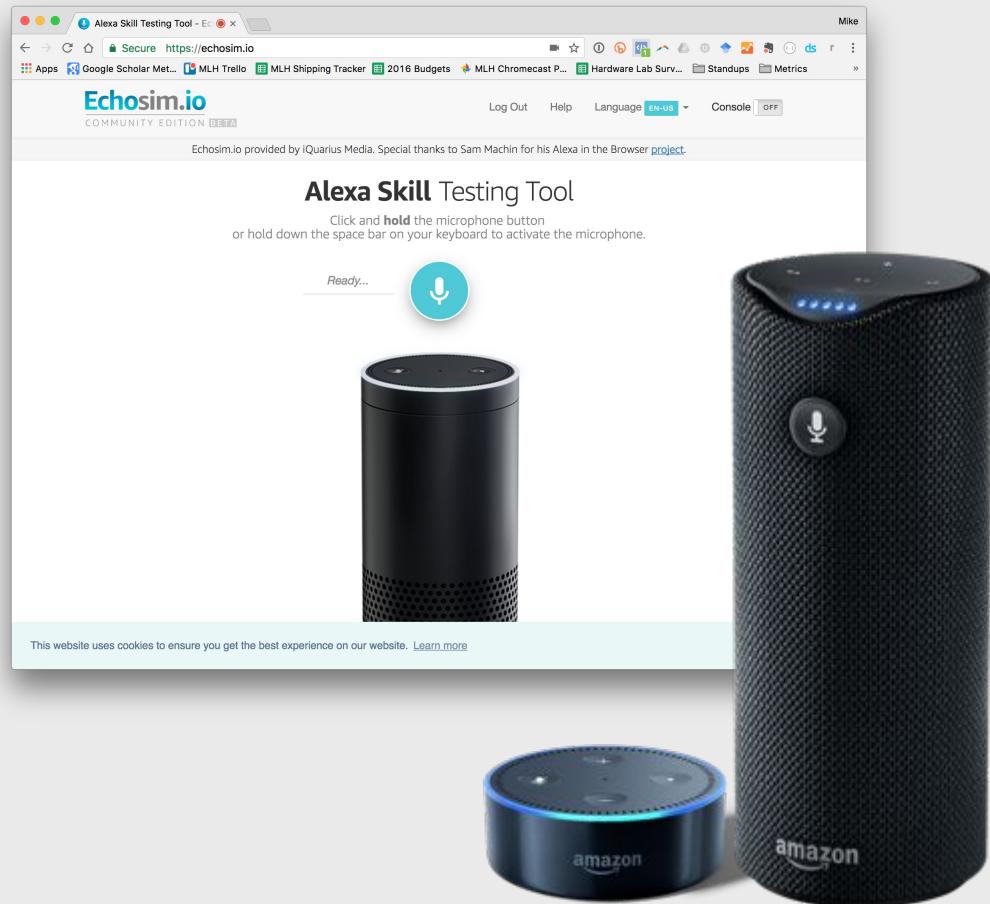
It's LIVE Demo Time!

Try these commands:

"Alexa, tell me a joke!"

*"Alexa, what is
Major League Hacking?"*

Don't have an Alexa device?
Head to: echosim.io



Why build an Alexa Skill?

1. Alexa, Amazon's voice service, is already integrated into Echo devices and can perform hundreds of skills.
2. Your skill can reach millions of customers with Alexa enabled devices.
3. Building with Alexa is free, easy, & fun!



Alexa Skills are made of 2 parts:

- 1. Front End** - The Alexa Voice UI handles text to speech, converting the audio into something our app can use, etc.
- 2. Back End** - The logic code that actually powers our app. Usually this is written on a service called AWS Lambda.



Speech Recognition is Hard.

You said: *for tē tīmz*. But, what did you mean?

1. Forty Times?
2. For Tea Times?
3. For Tee Times?
4. Four Tee Times?



Alexa uses Sample Utterances for Training.

In order to **map user input** to a behavior, we provide **training data**, for each intent.

```
01 GetNewFactIntent a fact
02 GetNewFactIntent a Major League Hacking fact
03 GetNewFactIntent tell me a fact
04 GetNewFactIntent tell me a Major League Hacking fact
05 GetNewFactIntent give me a fact
06 GetNewFactIntent give me a Major League Hacking fact
07 GetNewFactIntent tell me trivia
08 GetNewFactIntent tell me a Major League Hacking trivia
09 GetNewFactIntent give me trivia
10 GetNewFactIntent give me a Major League Hacking trivia
11 GetNewFactIntent give me some information
12 GetNewFactIntent give me some Major League Hacking information
13 GetNewFactIntent tell me something
14 GetNewFactIntent give me something
```

Alexa Maps Speech Input to Intents.

Once Alexa figures out what Intent you wanted, you can easily map that back to code.

```
01  {
02    "intents": [
03      { "intent": "GetNewFactIntent" },
04      { "intent": "AMAZON.HelpIntent" },
05      { "intent": "AMAZON.StopIntent" },
06      { "intent": "AMAZON.CancelIntent" }
07    ]
08  }
```

"Tell me a Fact about MLH" → GetNewFactIntent

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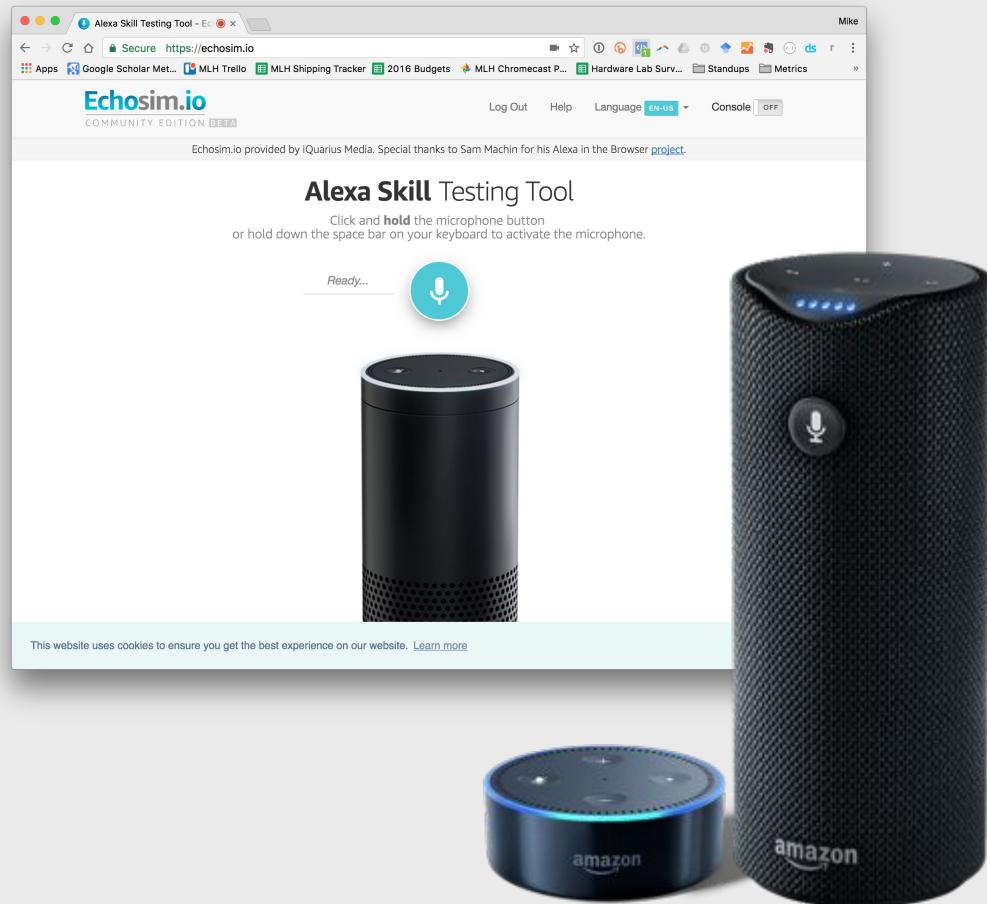
Demo: About MLH Skill

Ask your Alexa:

“Alexa, open MLH Facts.”

*“Alexa, ask MLH Facts
for a fact.”*

Don't have an Alexa device?
Head to: echosim.io



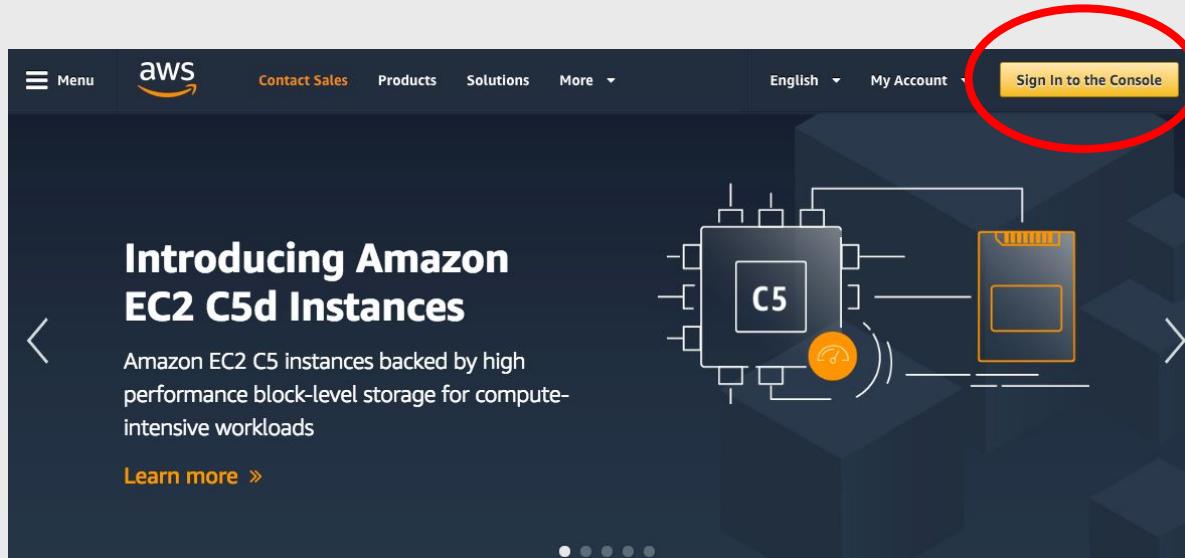
Steps to Build Your Skill:

To build your first skill, we'll complete the following steps:

1. Write your skill code as an AWS Lambda function
2. Create an Alexa Skill in the Developer Portal
3. Connect Your Lambda Function to Your Skill
4. Test your Skill
5. Publish Your Skill

Sign into the AWS Console.

Navigate to:
mlhlocal.host/alexa-aws



Instructions

Click on “Sign in to Console” to get started.

Navigate to the Lambda Manager.

You can search for Lambda in the search box or find it on the list of available services.

AWS services

Lambda
Run Code without Thinking about Servers

CodeBuild
Build and Test Code

Lex
Build Voice and Text Chatbots

Build a solution

Get started with simple wizards and automated workflows.

| | | |
|---|--|---|
|  Launch a virtual machine With EC2 ~1 minute |  Build a web app With Elastic Beanstalk ~6 minutes |  Deploy a serverless microservice With Lambda, API Gateway ~2 minutes |
|  Host a static website With S3, CloudFront, Route 53 ~5 minutes |  Create a backend for your mobile app With Mobile Hub ~5 minutes |  Register a domain With Route 53 ~3 minutes |

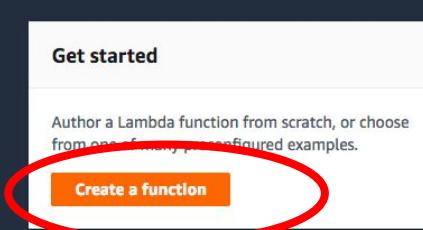
Create your First Lambda Function.

Each AWS Lambda Function is responsible for one thing
(like returning facts about you!).

COMPUTE

AWS Lambda
lets you run code without thinking about servers.

You pay only for the compute time you consume — there is no charge when your code is not running. With Lambda, you can run code for virtually any type of application or backend service, all with zero administration.



How it works

```
1 exports.handler = (event, context, callback) => {  
2     // Succeed with the string "Hello world!"  
3     callback(null, 'Hello world!');  
4 };
```

Run Next: Lambda responds to events

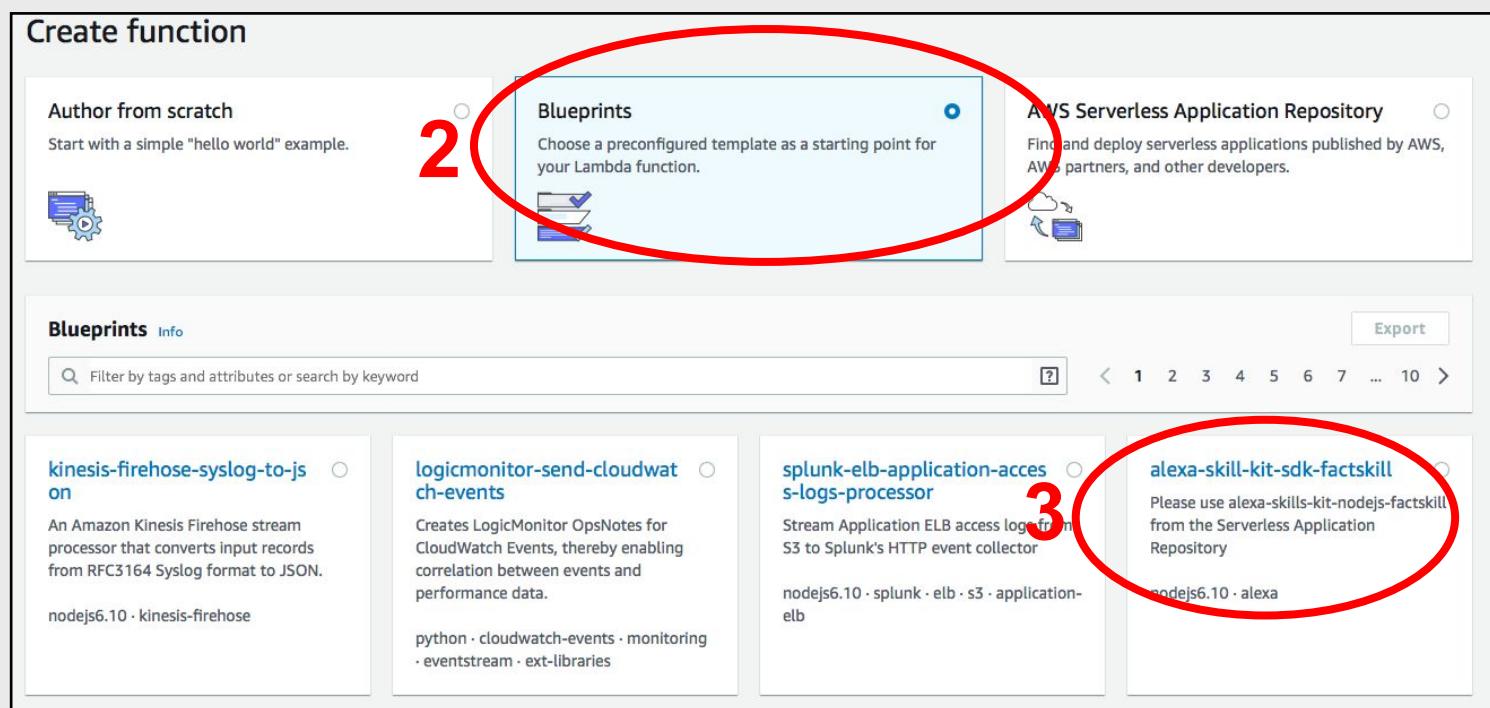
Instructions

Click “Create a Function” to create your first function!

Choose a Blueprint.

Instructions

1. Verify that "N. Virginia" is the region you have selected.
2. Select "Blueprints."
3. Scroll down to select “alexa-skill-kit-sdk-factskill.”



Choose a Blueprint.

Instructions

4. Scroll down to the bottom of the page and select "Configure."

The screenshot shows a grid of nine blueprints:

- kinesis-firehose-syslog-to-json**: An Amazon Kinesis Firehose stream processor that converts input records from RFC3164 Syslog format to JSON. Node.js · kinesis-firehose
- logicmonitor-send-cloudwatch-events**: Creates LogicMonitor OpsNotes for CloudWatch Events, thereby enabling correlation between events and performance data. Python · cloudwatch-events · monitoring · eventstream · ext-libraries
- splunk-elb-application-access-logs-processor**: Stream Application ELB access logs from S3 to Splunk's HTTP event collector. nodejs6.10 · splunk · elb · s3 · application-elb
- alexa-skill-kit-sdk-factskill**: Please use alexa-skills-kit-nodejs-factskill from the Serverless Application Repository. nodejs6.10 · alexa
- batch-get-job-python27**: Returns the current status of an AWS Batch Job. python2.7 · batch
- kinesis-firehose-apachelog-to-json-python**: An Amazon Kinesis Firehose stream processor that converts input records from Apache Common Log format to JSON. python2.7 · kinesis-firehose
- s3-get-object-python**: An Amazon S3 trigger that retrieves metadata for the object that has been updated. python2.7 · s3
- config-rule-change-triggered**: An AWS Config rule that is triggered by configuration changes to EC2 instances. Checks instance types. nodejs4.3 · config
- lex-book-trip-python**: Book details of a visit, using Amazon Lex to perform natural language understanding. python2.7 · lex
- dynamodb-process-stream**: An Amazon DynamoDB trigger that logs the updates made to a table. nodejs6.10 · dynamodb

At the bottom right, there are "Cancel" and "Configure" buttons. The "Configure" button is circled in red.

Set Basic Information.

Instructions

5. Enter a name for your function.
6. Select “Create a custom role”

The screenshot shows the AWS Lambda 'Create function' wizard. The left sidebar has 'AWS Lambda' and 'Functions' selected. The main area shows the 'Basic information' step. A warning message says 'This function contains external libraries.' Below it, the 'Name' field is set to 'yourFunctionName'. Under 'Role', a dropdown menu is open, showing 'Create new role from template(s)' (which is selected) and 'Create a custom role'. A note says 'that basic Lambda permissions will also be added.' The 'Role name' field is set to 'myRoleName'. At the bottom, there's a 'Policy templates' section with a note about choosing policy templates and a dropdown menu. The footer contains links for 'Feedback', 'English (US)', 'Privacy Policy', and 'Terms of Use'.

Create your IAM Role.

Instructions

7. Select "Create a new IAM Role" from the dropdown menu.
8. Role Name & policy will automatically populate.

AWS Lambda requires access to your resources

AWS Lambda uses an IAM role that grants your custom code permissions to access AWS resources it needs.

▼ Hide Details

Role Summary ?

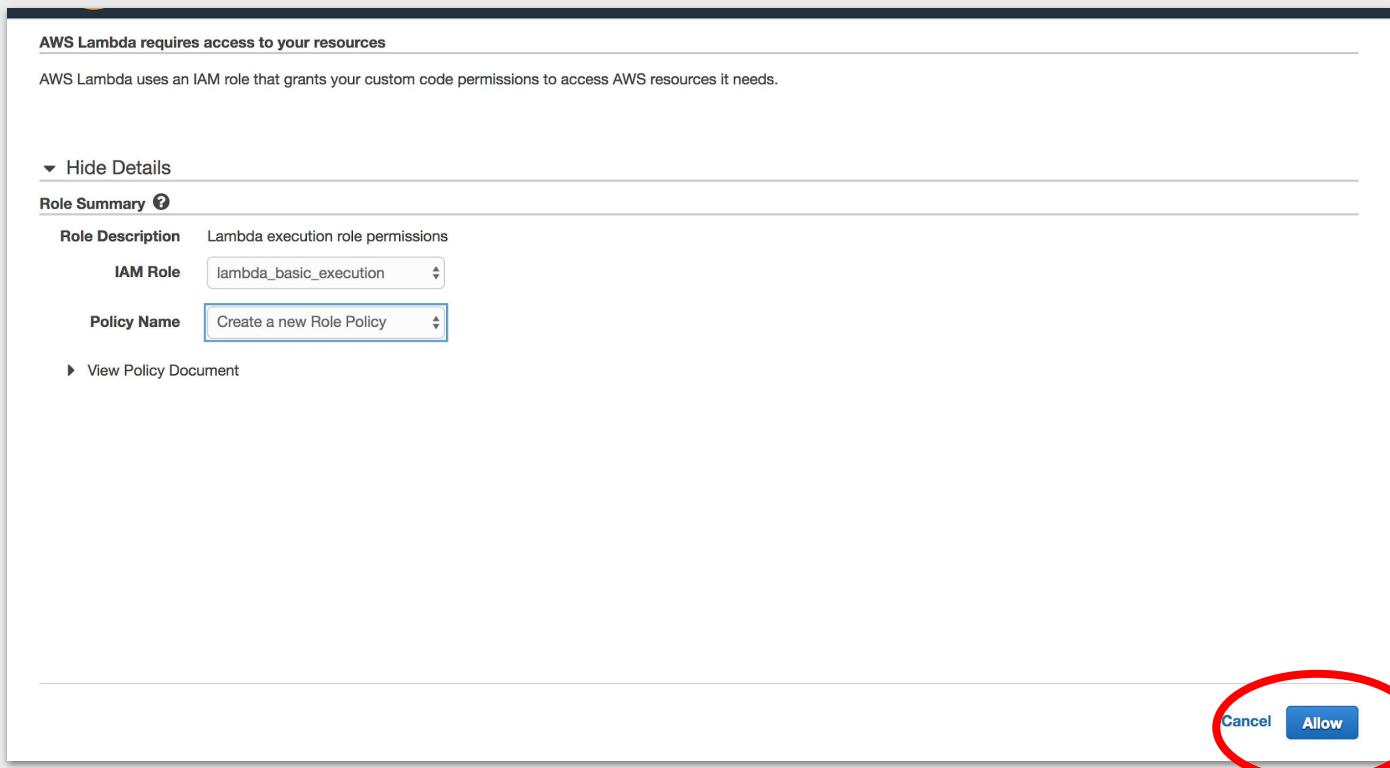
| | |
|-------------------------|--|
| Role Description | Lambda execution role permissions |
| IAM Role | <input type="button" value="Create a new IAM Role"/> |
| Role Name | lambda_basic_execution |

▶ View Policy Document

Create your IAM Role.

Instructions

9. Select “Allow” in the lower right corner and you will be returned to your Lambda function.



Create your IAM Role.

Notice that “lambda_basic_execution” is now in the “Existing Role” field.

Basic information Info

Name*

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.](#)

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.

Create your Function.

Instructions

10. Click “Create Function” at the bottom of the page.

Lambda function code

Code is pre-configured by the chosen blueprint. You can configure it after you create the function. [Learn more about deploying Lambda functions.](#)

Runtime
Node.js 6.10

```
2  /* eslint quote-props: ["error", "consistent"] */
3  /**
4   * This sample demonstrates a simple skill built with the Amazon Alexa Skills
5   * nodejs skill development kit.
6   * This sample supports multiple languages. (en-US, en-GB, de-DE).
7   * The Intent Schema, Custom Slots and Sample Utterances for this skill, as well
8   * as testing instructions are located at https://github.com/alexa/skill-sample-nodejs-fact
9  */
10
11 'use strict';
12
13 const Alexa = require('alexa-sdk');
14
15 ⚠️ const APP_ID = undefined; // TODO replace with your app ID (OPTIONAL).
16
17 const languageStrings = {
18   'en': {
19     translation: {
20       FACTS: [
21         'A year on Mercury is just 88 days long.',
22         'Despite being farther from the Sun, Venus experiences higher temperatures than Mercury.',
23         'Venus rotates anti-clockwise, possibly because of a collision in the past with an asteroid.',
24         'On Mars, the Sun appears about half the size as it does on Earth.',
25         'Earth is the only planet not named after a god.',
26         'Jupiter has the shortest day of all the planets.',
27         'The Milky Way galaxy will collide with the Andromeda Galaxy in about 5 billion years.'
28       ]
29     }
30   }
31 }
```

* These fields are required.

Cancel

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Step 1: Download the Sample Code

To get the sample code, head to this URL:

mlhlocal.host/alexa-code

Step 2: Open Index.js

Unzip the directory and open [src/index.js](#) in your favorite code editor.



Customize your Facts

Instructions

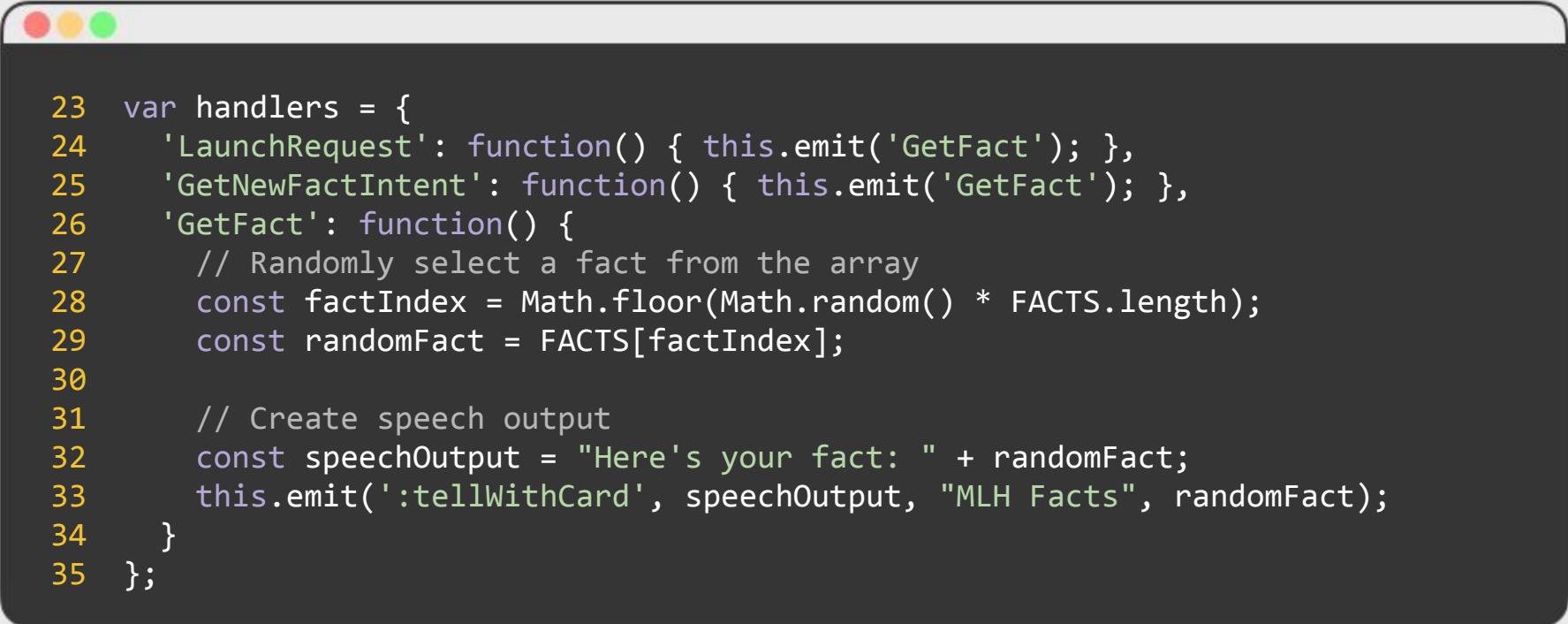
1. Find the `FACTS` array inside `index.js`.
2. Replace the facts about MLH with facts about yourself!



```
12 // TODO: replace with facts about yourself
13 const FACTS = [
14     "Major League Hacking is commonly called MLH.",
15     "Major League Hacking's mission is to empower hackers.",
16     "Over 65,000 student hackers participated in Major League Hacking...",
17     "Major League Hacking was founded in 2013 by Swift and Jon.",
18     "Hackers created over 12,000 projects at MLH hackathons in 2016.",
19     "Over 200 schools around the world hosted MLH hackathons in 2016.",
20     "Major League Hacking is headquartered in New York City."
21 ];
```

Code Review: The Handlers Object

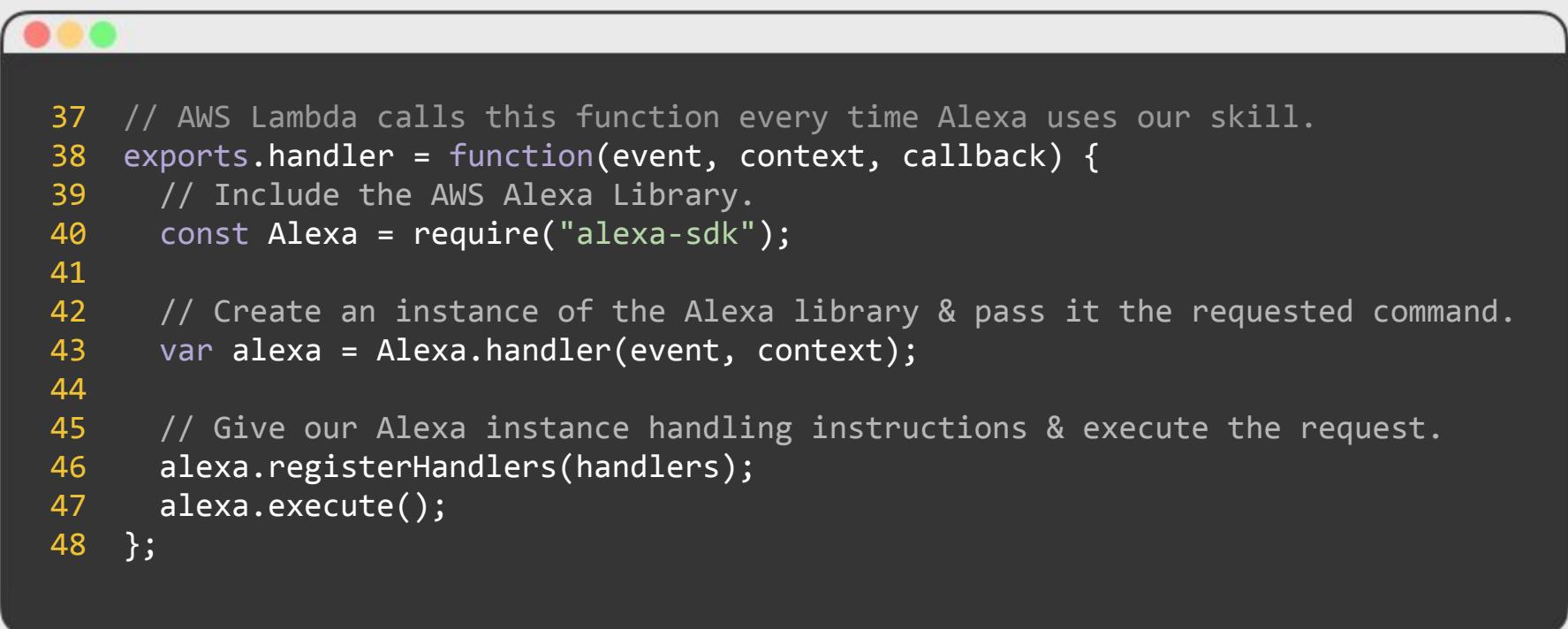
The `handlers` object tells Alexa how to handle various actions. `GetFact` is the main logic of our application.



```
23 var handlers = {
24   'LaunchRequest': function() { this.emit('GetFact'); },
25   'GetNewFactIntent': function() { this.emit('GetFact'); },
26   'GetFact': function() {
27     // Randomly select a fact from the array
28     const factIndex = Math.floor(Math.random() * FACTS.length);
29     const randomFact = FACTS[factIndex];
30
31     // Create speech output
32     const speechOutput = "Here's your fact: " + randomFact;
33     this.emit(':tellWithCard', speechOutput, "MLH Facts", randomFact);
34   }
35 };
```

Code Review: The Handler Function

The `handler` function tells Alexa how to route voice commands by passing a copy of the `handlers` object.



```
37 // AWS Lambda calls this function every time Alexa uses our skill.
38 exports.handler = function(event, context, callback) {
39     // Include the AWS Alexa Library.
40     const Alexa = require("alexa-sdk");
41
42     // Create an instance of the Alexa library & pass it the requested command.
43     var alexa = Alexa.handler(event, context);
44
45     // Give our Alexa instance handling instructions & execute the request.
46     alexa.registerHandlers(handlers);
47     alexa.execute();
48 };
```

Copy & Paste your Code into the Lambda Editor Instructions

3. Copy the entire contents of `index.js` and paste it over the code in the inline editor on the AWS Console.

The screenshot shows the AWS Lambda Function code editor interface. At the top, there are three dropdown menus: 'Code entry type' set to 'Edit code inline', 'Runtime' set to 'Node.js 6.10', and 'Handler' set to 'index.handler'. Below these is a toolbar with standard file operations: File, Edit, Find, View, Goto, Tools, Window. To the left is a sidebar labeled 'Environment' showing a folder structure with 'yourFunctionName', 'node_modules', 'index.js', and 'package.json'. The main area displays the 'index.js' file content:

```
1 /**
2  * This sample demonstrates a simple skill built with the Amazon Alexa Skills
3  * nodejs skill development kit. It's intended to be used at an MLH Localhost
4  * Workshop.
5  *
6  * The Intent Schema, Custom Slots and Sample Utterances for this skill, as well
7  * as testing instructions are located at https://github.com/mlh/mlh-localhost-hacking-with-alex
8 */
9
10 'use strict';
11
12 // TODO: replace with facts about yourself
13 const FACTS = [
14   "Major League Hacking is commonly called M, L, H.",
15   "Major League Hacking's mission is to empower hackers.",
16   "Over 65,000 student hackers participated in Major League Hacking hackathons in 2017.",
17   "Major League Hacking was founded in 2013 by Mike Swift and Jon Gottfried.",
18   "Hackers created over 12,000 projects at Major League Hacking hackathons in 2017.",
19   "Over 200 universities and high schools around the world hosted Major League Hacking hackathon"
20   "Major League Hacking is headquartered in New York City."
21 ];
22
```

Save your Code.

Instructions

4. Click "Save" at the top of the page.

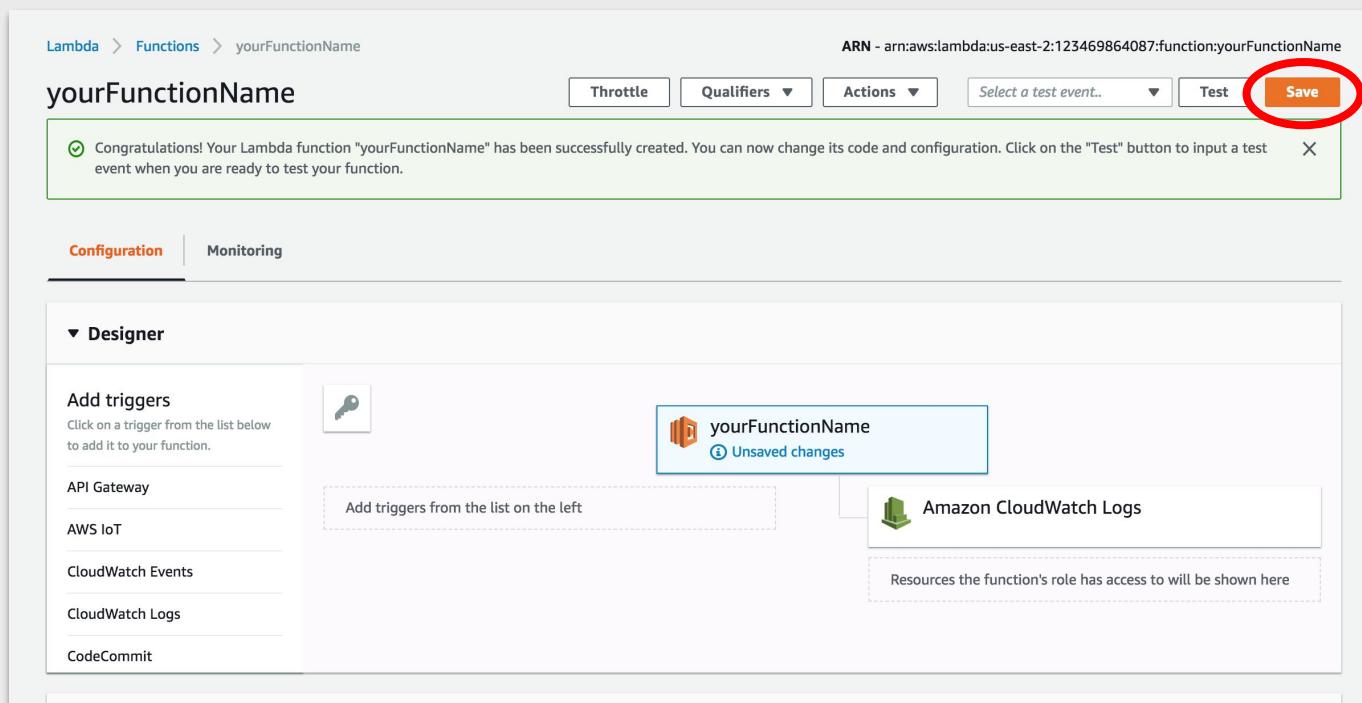


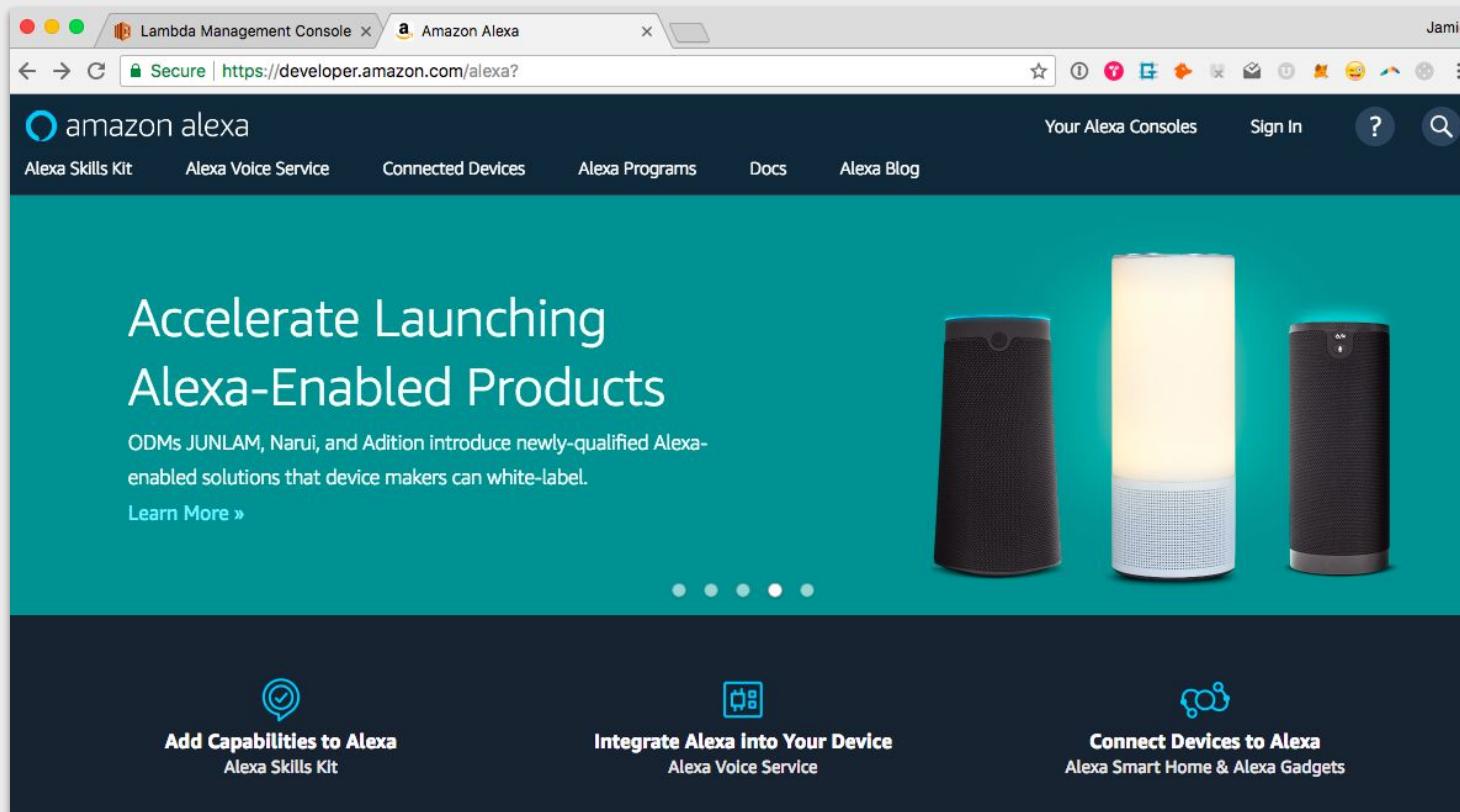
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Sign into the Amazon Developer Portal

Instructions

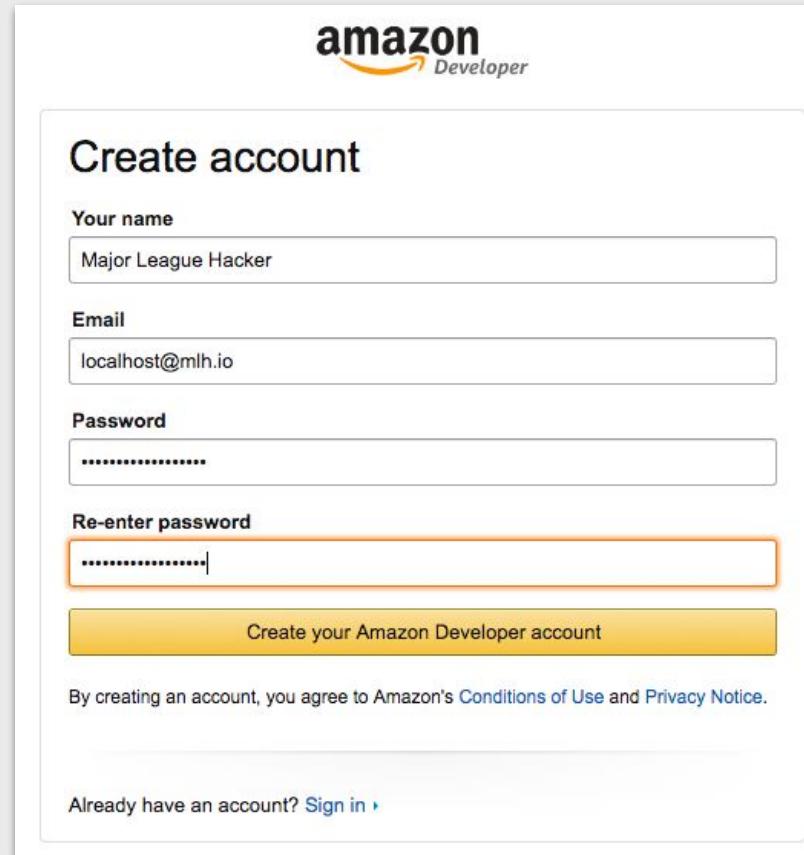
1. In another tab, navigate to mlhlocal.host/alexa-portal.
2. Click "Sign In."



Create your account.

Instructions

3. Fill in this form.



The image shows a screenshot of the Amazon Developer account creation page. The page has a white background with a light gray header featuring the Amazon logo and the word "Developer". Below the header, the title "Create account" is centered in a large, bold, black font. The form consists of several input fields: "Your name" with the value "Major League Hacker", "Email" with the value "localhost@mlh.io", "Password" with a masked value, and "Re-enter password" with a masked value. A large yellow button at the bottom right is labeled "Create your Amazon Developer account". Below the button, a small note states "By creating an account, you agree to Amazon's Conditions of Use and Privacy Notice." At the very bottom left, there is a link "Already have an account? Sign in".

amazon
Developer

Create account

Your name

Email

Password

Re-enter password

Create your Amazon Developer account

By creating an account, you agree to Amazon's [Conditions of Use](#) and [Privacy Notice](#).

Already have an account? [Sign in](#)

Create your Developer Profile.

Instructions

4. Fill out the registration form.

Registration

1. Profile Information 2. App Distribution Agreement 3. Payments

* Indicates a required field.

| | |
|----------------------------------|--|
| Country/Region * | United States |
| First name * | Local |
| Last name * | Host |
| Email address * | localhost@mlh.io |
| Phone number * | 212-555-1212 e.g. 212-555-1212, +44 0161 715 3369 |
| Fax number | |
| Developer name or company name * | MLH Localhost Displayed on your apps at Amazon.com |
| Developer description | Maximum characters: 4000, Remaining: 3611 Major League Hacking (MLH) is the official student hackathon league. Each year, we power over 200 weekend-long Invention competitions that inspire innovation, cultivate communities, and teach computer science skills to more than 65,000 students around the world. MLH is an engaged and passionate maker community, consisting of the next generation of technology leaders and entrepreneurs. |
| Address 1 * | 149 East 23rd St |
| Address 2 | #438 |
| City * | New York |
| State * | New York |
| Zip code/Postal code * | 10159 |
| Customer support email address | |
| Customer support phone | |
| Customer support website | |

Create your Developer Profile.

Instructions

5. Agree to the Terms of Use.

The screenshot shows a web-based application interface for creating a developer profile. At the top, there are three tabs: '1. Profile Information' (marked with a green checkmark), '2. App Distribution Agreement' (highlighted in orange), and '3. Payments'. Below the tabs, there are language selection buttons: English, 中文 (Chinese)*, and 日本語 (Japanese)*. The main content area displays a series of updates to the App Distribution and Services Agreement:

- Changes to App Distribution and Services Agreement posted January 1, 2018**: We've revised the royalty structure for PC Games, PC Game In-App Products, PC Software, and PC Software In-App Products. Please review the full text of the updated Agreement carefully.
- Changes to App Distribution and Services Agreement posted October 4, 2017**: We have increased the Royalties we pay you for movies and TV Subscription In-App Products. We've updated the App Distribution and Services Agreement to add terms related to Royalties and payments. Please review the full text of the updated Agreement carefully.
- Changes to App Distribution and Services Agreement posted August 31, 2017**: We are expanding the Alexa voice service to India. We've updated the App Distribution and Services Agreement to designate the Amazon entity party to the Agreement with developers who reside in India and develop Alexa Skills. Please review the full text of the updated Agreement carefully.
- Changes to App Distribution and Services Agreement posted April 18, 2017**: Alexa now supports kid skills. We've updated the App Distribution and Services Agreement to add terms related to the distribution on Alexa of skills directed to children under 13. Please review the full text of the updated Agreement carefully.
- Changes to App Distribution and Services Agreement posted February 10, 2016**: We have made a new app testing service available to developers. We've updated the App Distribution and Services Agreement so that the terms applicable to Live App Testing apply to any app testing services we make available. Please review the full text of the updated Agreement carefully.

At the bottom of the content area, there is a 'Print Agreement' button. Below the content area, a note states: "Please note: All non-English translations are provided for informational purposes only and are non-binding. By clicking 'Accept and Continue' below, you agree to the English language version of the Mobile App Distribution Agreement." Finally, at the very bottom, there are 'Cancel' and 'Accept and Continue' buttons, with 'Accept and Continue' being highlighted in orange.

Create your Developer Profile.

Instructions

6. Select "No" for both options on this screen.
7. Save and Continue.

Registration

1. Profile Information

2. App Distribution Agreement

3. Payments

* indicates a required field.

Do you plan to monetize your digital content, such as
charging for apps or games or selling in-app items or in-
game items, or by receiving cash rewards for your skills? *

No

Yes

Do you plan to monetize apps by displaying ads from the
Amazon Mobile Ad Network or Mobile Associates? *

No

Yes

Note: You may still monetize later if you select "No" by entering
payment and tax information from the Settings menu.

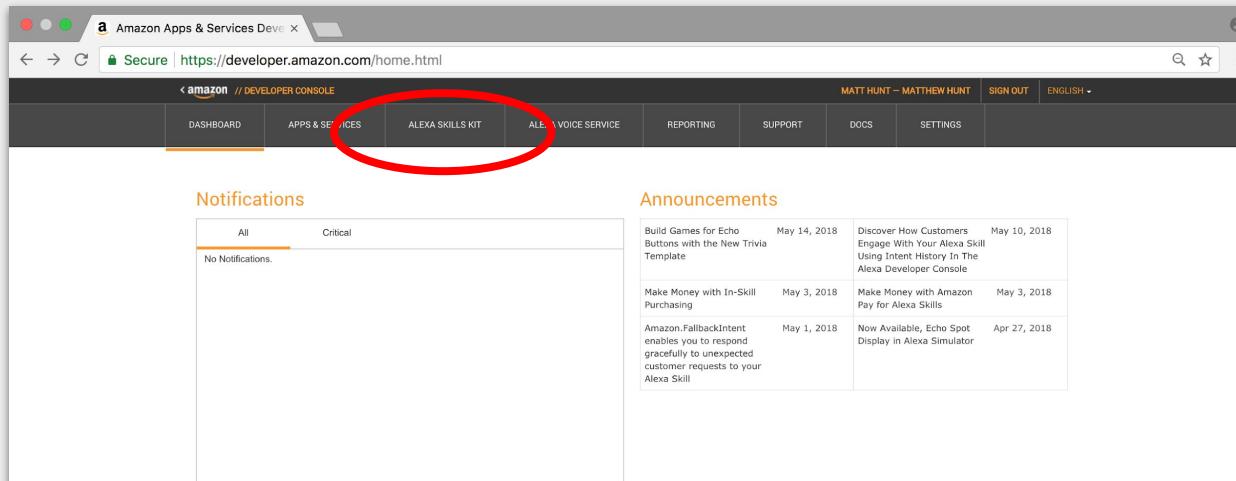
Cancel

Save and Continue

Create a New Alexa Skill.

Instructions

8. Navigate to Alexa Skills Kit.



The screenshot shows the Amazon Developer Console homepage. At the top, there is a navigation bar with links for DASHBOARD, APPS & SERVICES, ALEXA SKILLS KIT (which is circled in red), ALIVE VOICE SERVICE, REPORTING, SUPPORT, DOCS, and SETTINGS. Below the navigation bar, there are sections for Notifications (empty) and Announcements. The Announcements section lists several items:

| Announcement | Date | Date | |
|---|--------------|---|--------------|
| Build Games for Echo Buttons with the New Trivia Template | May 14, 2018 | Discover How Customers Engage With Your Alexa Skill Using Intent History In The Alexa Developer Console | May 10, 2018 |
| Make Money with In-Skill Purchasing | May 3, 2018 | Make Money with Amazon Pay for Alexa Skills | May 3, 2018 |
| Amazon.FallbackIntent enables you to respond gracefully to unexpected customer requests to your Alexa Skill | May 1, 2018 | Now Available, Echo Spot Display in Alexa Simulator | Apr 27, 2018 |

At the bottom of the page, there are three promotional sections: 'amazon alexa', 'amazon appstore', and 'amazon software + games'.

amazon alexa
Build for voice with Alexa, Amazon's voice service and the brain behind the Amazon Echo

Alexa Skills Kit
A collection of self-service APIs, tools, documentation, and code samples that make it fast and easy for anyone to add skills to Alexa

Alexa Voice Service
Create or manage your Alexa enabled devices

amazon appstore
Build Android apps and games for Amazon Fire TV, Fire tablet, and Amazon's mobile app store.

App List
View complete list of all your Apps

Reports
View how your app is performing and download reports

Add streaming media app
Submit your HTML5/Web apps for Fire TV.

Add Android App

amazon software + games
Lets you publish your desktop software and games

My Products
Manage, edit products you have added

Reports
View how your product is performing and download reports

Add New Product

Create a New Alexa Skill.

Instructions

9. Click “Create Skill”

The screenshot shows the Alexa Skills Kit Developer Console interface. At the top, there's a banner about making money with Alexa Skills. Below it, a welcome message and a 'Create Skill' button. The 'Skills' tab is selected in the navigation bar. A red circle highlights the 'Create Skill' button in the center of the page.

*** Make Money with Your Alexa Skills ***

On May 3, we announced general availability of in-skill purchasing (ISP) and Amazon Pay for Alexa Skills. With ISP, you can sell premium digital content that enriches your skill experience. With Amazon Pay, you can sell physical goods or services through your skill. You can also continue to make money for eligible skills that drive some of the highest customer engagement through Alexa Developer Rewards. [Learn more.](#)

Welcome to the new Alexa Skills Kit Developer Console

Curious about what's new? [Watch the video overview](#) or [read about what's changed](#).

Skills Earnings Payments

Alexa Skills Create Skill

| SKILL NAME | LANGUAGE | TYPE | MODIFIED | STATUS | ACTIONS |
|--|----------|------|----------|--------|---------|
|  Alexa Skills Create your first skill or learn more about Alexa Skills Kit Create Skill | | | | | |

English

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Create a New Alexa Skill.

Instructions

10. Name your skill after yourself.

The screenshot shows a web browser window for creating a new Alexa skill. The top navigation bar includes the Alexa logo, account information, and links for 'Your Alexa Consoles', 'Feedback forum', and help/symbol icons. The main content area has a dark header with the text 'Create a new skill'. Below it, a section titled 'Major League Hacking Facts' is shown. At the bottom left, there's a note about the default language being English (US). A prominent blue 'Next' button is located at the bottom right of the main form area, which is circled in red to indicate the next step in the process.

amazon alexa

Your Alexa Consoles LH ? Feedback forum

Create a new skill

Major League Hacking Facts

Skill created will default to English (US) ▾

Next

Name your Skill

Instructions

11. Select “Fact Skill” for Skill Model Type.
12. Click "Create skill."

Choose a template

Select a quick start template to get started with a predefined skill or simply "Start from scratch"

Start from scratch

Design a unique experience for your users and define your custom model from scratch.

SELECTED

Fact Skill

Provided a list of interesting facts about a topic, Alexa will select a fact at random and tell it to the user when the skill is invoked. Includes 1 custom intent, and 4 built-in intents.

Quiz Game Skill

Provided a list of interesting facts about a topic, Alexa will quiz a user with facts from the list. Includes 1 custom intent with 1 slot, and 6 built-in intents.

High-Low Game Skill

Try to guess the target number. Alexa tells the player if the target number is higher or lower than their current guess. Includes 2 custom intents with 5 slots, and 5 built-in intents.

Choose

What is the Invocation Name?

This is a **1-3 word phrase** that users will say out loud to launch your skill.

Alexa, open MLH facts.



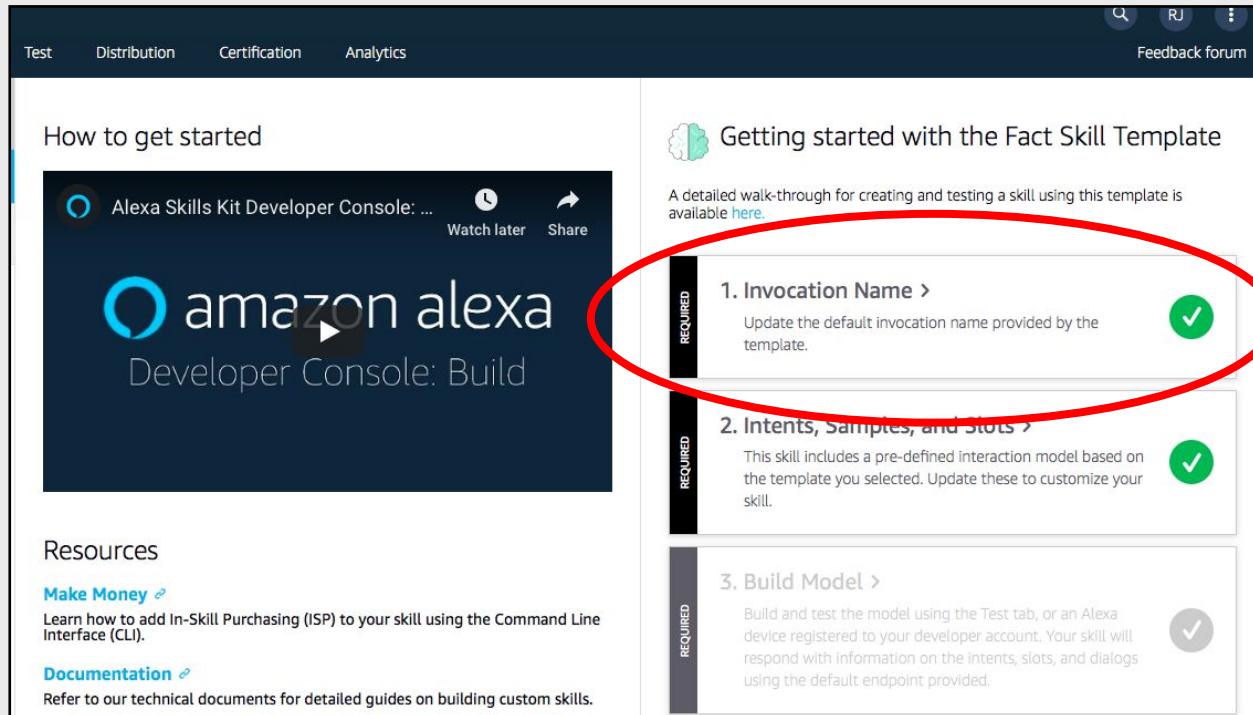
Wake Word

Launch

Skill Invocation
Name

Navigate to Invocation Name

Navigate back to the main panel and Select the Invocation Name panel.



Give Your Skill an Invocation Name

Instructions

1. Enter A Skill Invocation Name (all lower case).
2. Click "Save Model."

The screenshot shows the Alexa Skills Kit (ASK) developer console interface. At the top, there is a dropdown menu set to "English (U.S.)" and two buttons: "Save Model" and "Build Model". Below this, a sidebar on the left lists "CUSTOM" categories: "Interaction Model" (selected), "Invocation" (highlighted with a blue bar), and "Intents (4)". Under "Intents (4)", it shows "Built-In Intents (4)" with items: "AMAZON.FallbackIntent", "AMAZON.CancelIntent", "AMAZON.HelpIntent", and "AMAZON.StopIntent". To the right of the sidebar, under the "Invocation" section, there is a heading "Invocation" with the sub-instruction: "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:". Below this, a green box contains the user input: "User: Alexa, ask daily horoscopes for the horoscope for Gemini". At the bottom, there is a field labeled "Skill Invocation Name" with the value "mlh facts".

Add An Intent

Instructions

3. Click "+ Add" next to "Intents."

Intent

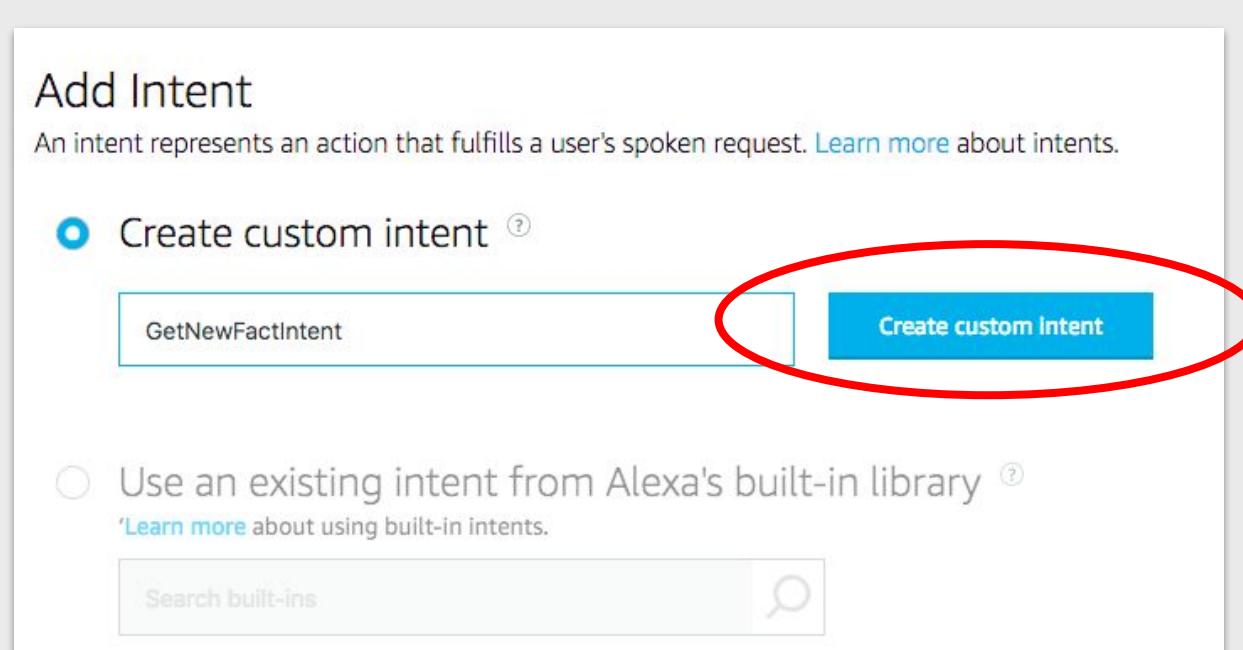
Add definition here.

The screenshot shows the Alexa Skills Kit (ASK) Interaction Model interface. At the top, there is a dropdown menu set to "English (U.S.)" and two buttons: "Save Model" and "Build Model". Below this, the "CUSTOM" tab is selected. On the left, a sidebar lists "Interaction Model", "Invocation" (which is highlighted with a blue bar), "Intents (4)" (with a red circle around the "+ Add" button), and "Built-In Intents (4)". Under "Invocation", it says "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:" followed by a sample user input "User: Alexa, ask daily horoscopes for the horoscope for Gemini". On the right, there is a "Skill Invocation Name" input field containing "mlh facts".

Add An Intent

Instructions

4. Enter "GetNewFactIntent" in the field.
5. Click "Create custom intent."



Customize your Utterances

Instructions

6. Open up [SpeechAssets/SampleUtterances.txt](#)
7. Replace “Major League Hacking” with your name on each line.



```
give me a fact
a Major League Hacking fact
tell me a fact
tell me a Major League Hacking fact
give me a fact
give me a Major League Hacking fact
tell me trivia
tell me a Major League Hacking trivia
give me trivia
give me a Major League Hacking trivia
give me some information
give me some Major League Hacking information
tell me something
give me something
```

Add Sample Utterances

Instructions

9. One at a time, paste each line from `SampleUtterances.txt` into the Sample Utterances field.
10. Click "Save Model" when you're done.

Intents / GetNewFactIntent

Sample Utterances (14) (?)

What might a user say to invoke this intent? +

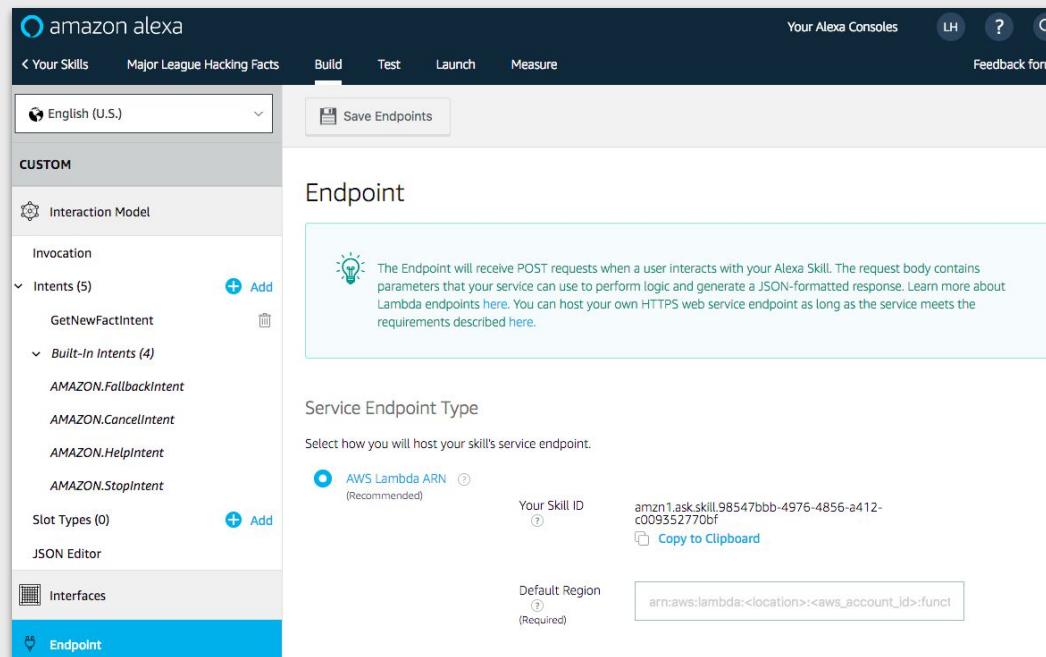
| | |
|---|-------|
| give me something | trash |
| tell me something | trash |
| give me some Major League Hacking information | trash |
| give me some information | trash |
| give me a Major League Hacking trivia | trash |

◀ 1 – 5 of 14 ▶ Show All

Add an Endpoint

Instructions

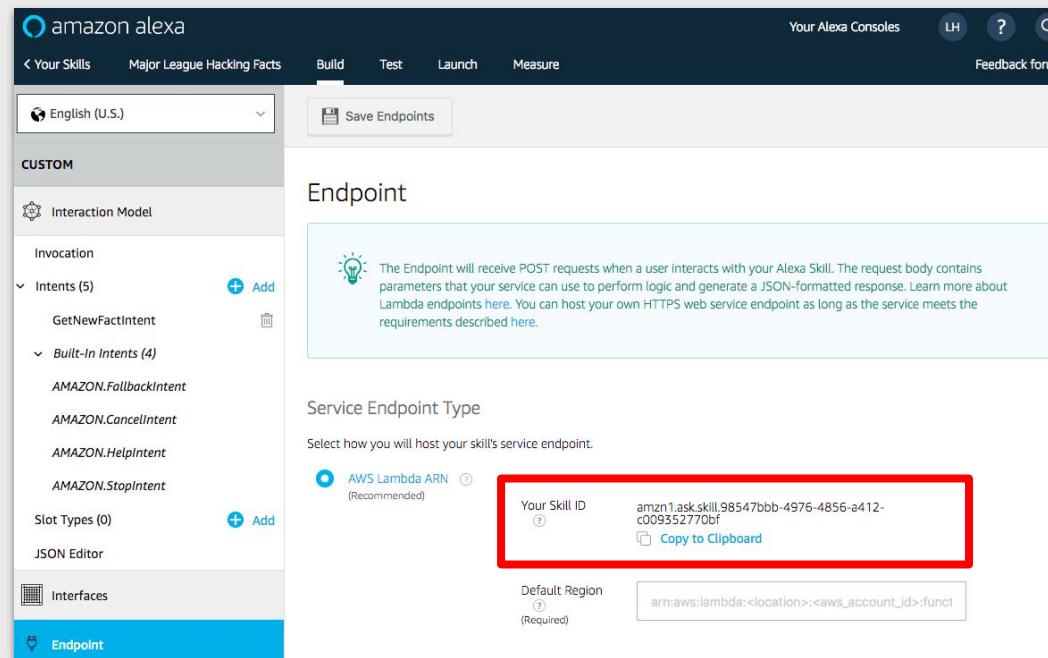
11. Click "Endpoint" on the left side of the screen.
12. Select "AWS Lambda ARN." This is the part where we connect our skill to our function!



Add an Endpoint

Instructions

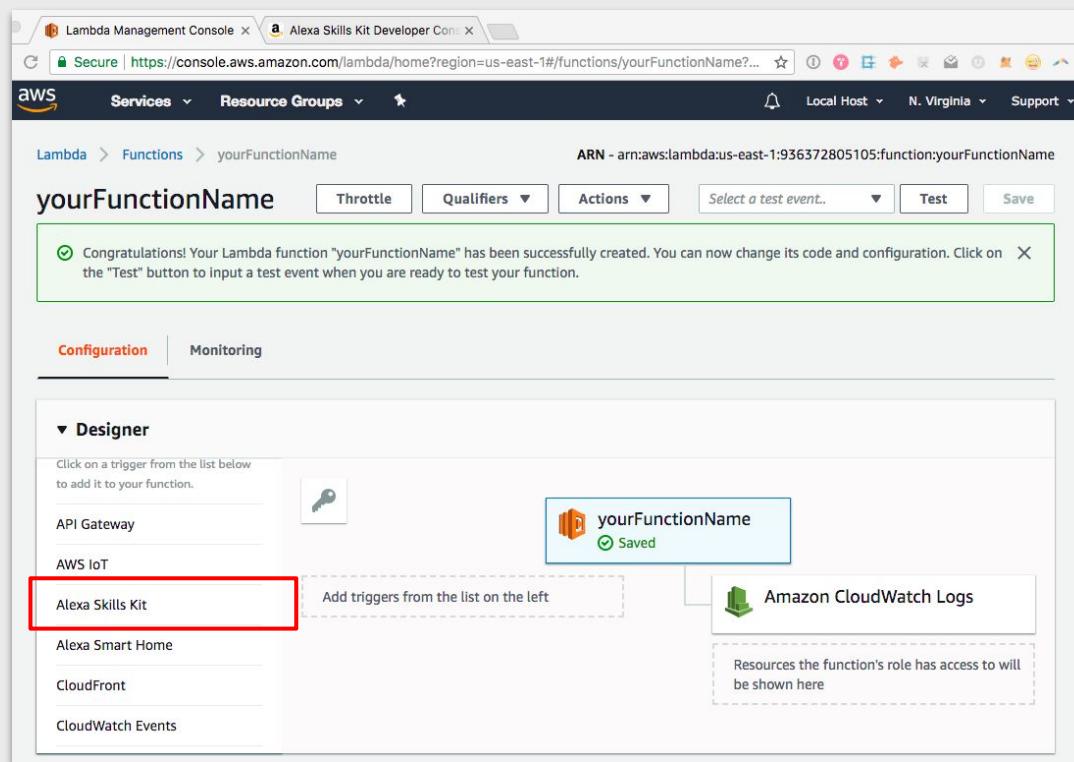
13. Click "Copy to Clipboard" to copy your Skill ID.
14. Return to the Lambda Management Console in the other tab.



Add an Endpoint

Instructions

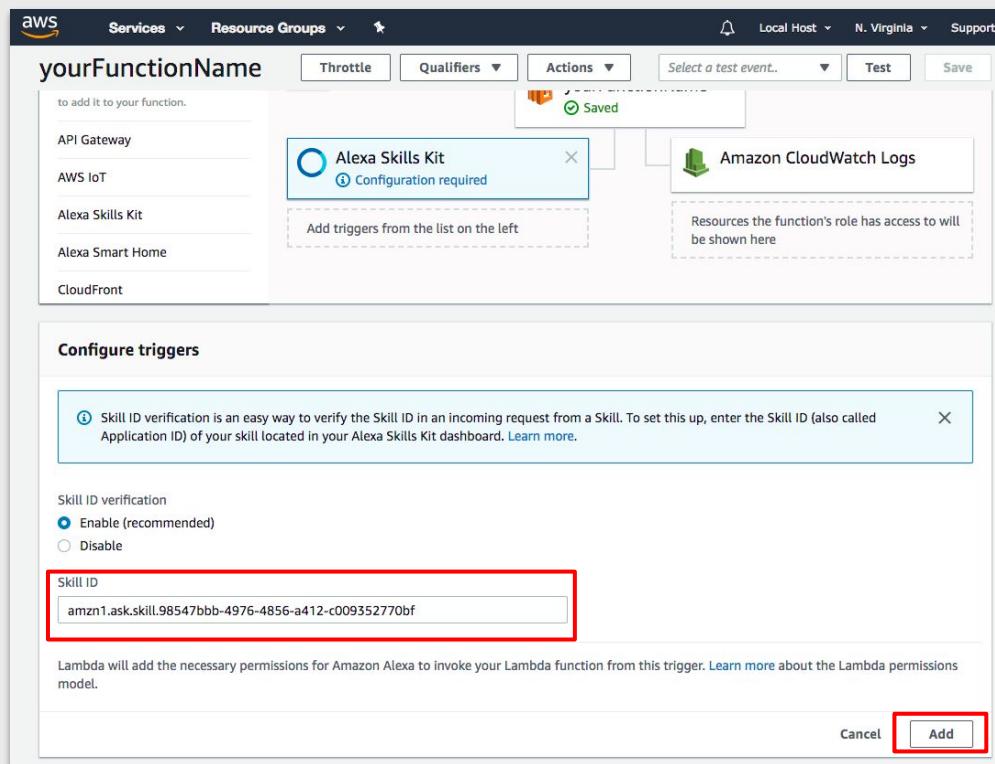
15. On the left, under "Add triggers," select "Alexa Skills Kit."



Add an Endpoint

Instructions

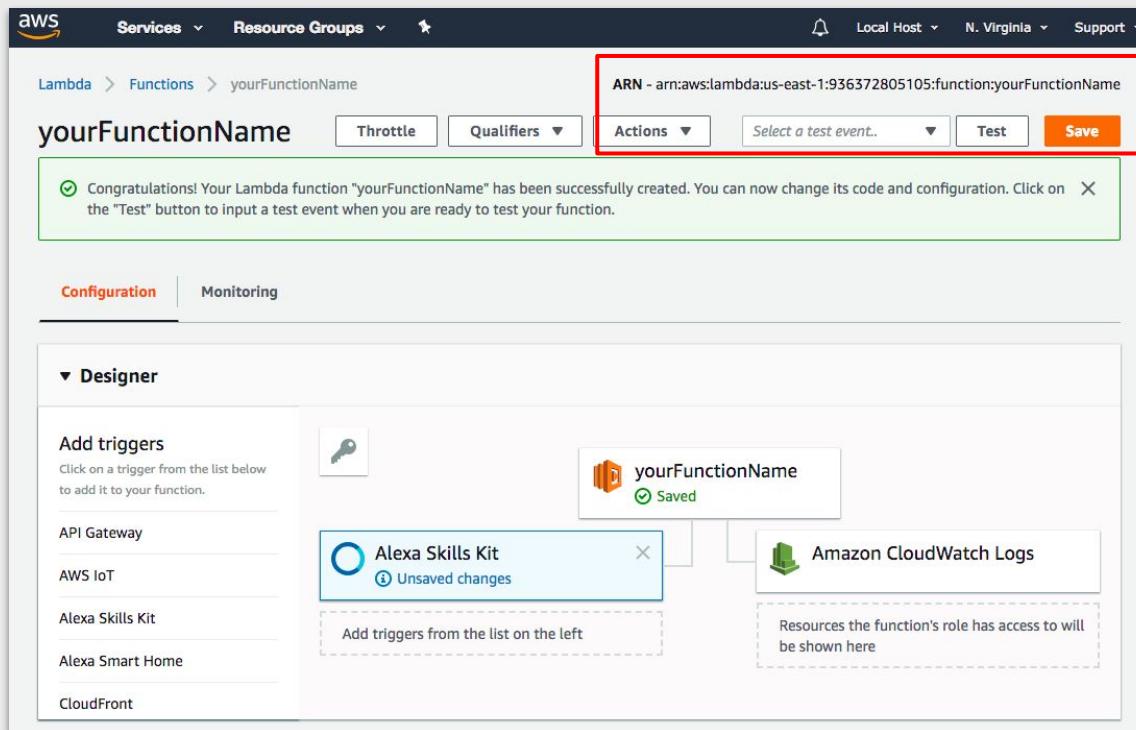
16. Scroll down and paste the Skill ID you copied into the Skill ID field.
17. Click "Add."



Add an Endpoint

Instructions

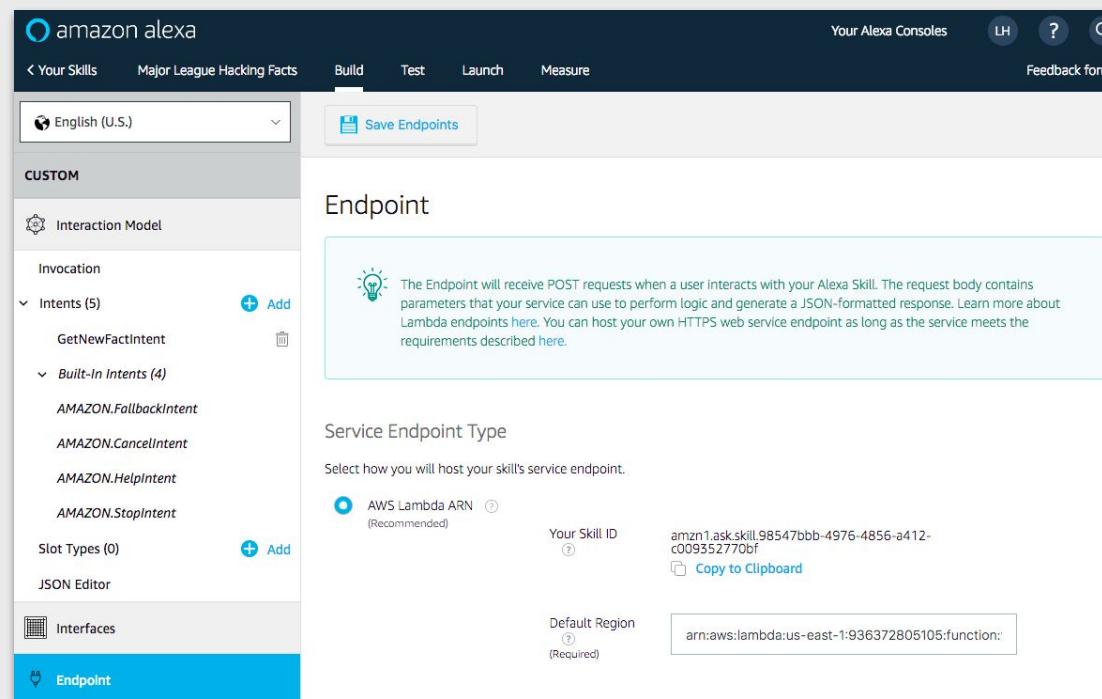
18. Click "Save" at the top of the screen.
19. Copy the "ARN" and return to the Alexa Skills Console tab.



Add an Endpoint

Instructions

20. In the Alexa Skills Console tab, paste the ARN in "Default Region."
21. Click "Save Endpoints."



Build Your Model

Instructions

22. Click "Build" to return to the screen below.
23. Click "Build Model >". Wait for a notification that says your model has been built.

The screenshot shows the Alexa Skills Kit Developer Console interface. The top navigation bar includes links for 'Your Skills', 'Major League Hacking Facts', 'Build' (which is highlighted with a red circle), 'Test', 'Launch', and 'Measure'. The 'Build' tab is active, displaying the 'How to get started' section with a large 'amazon alexa Developer Console: Build' button. To the right, there's a 'Skill builder checklist' with four items:

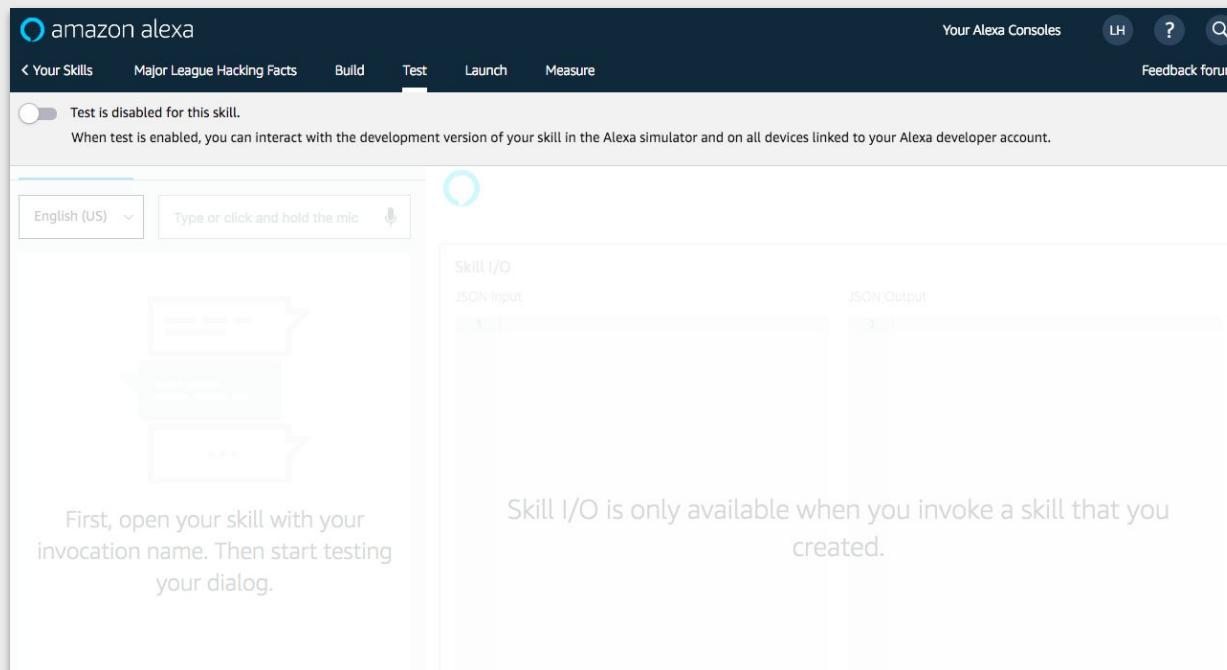
- 1. Invocation Name >** Enter an invocation name for your skill. (Completed, checked)
- 2. Intents, Samples, and Slots >** Add at least one intent and one sample utterance. (Completed, checked)
- 3. Build Model >** Successfully build your interaction model. (Completed, checked)
- 4. Endpoint >** Set a web service endpoint to handle skill requests. (Completed, checked)

The left sidebar contains sections for 'Interaction Model', 'Invocation', 'Intents (5)', 'Slot Types (0)', 'JSON Editor', 'Interfaces', and 'Endpoint'.

Build Your Model

Instructions

1. Click "**Test**" at the top of the screen after your build completes.
2. Click the slider to enable testing for this skill.



Build Your Model

Instructions

3. Type the Invocation Name you made and click "Enter." You can also choose to speak it.

First, open your skill with your invocation name. Then start testing your dialog.

Skill I/O

JSON Input

1

JSON Output

1

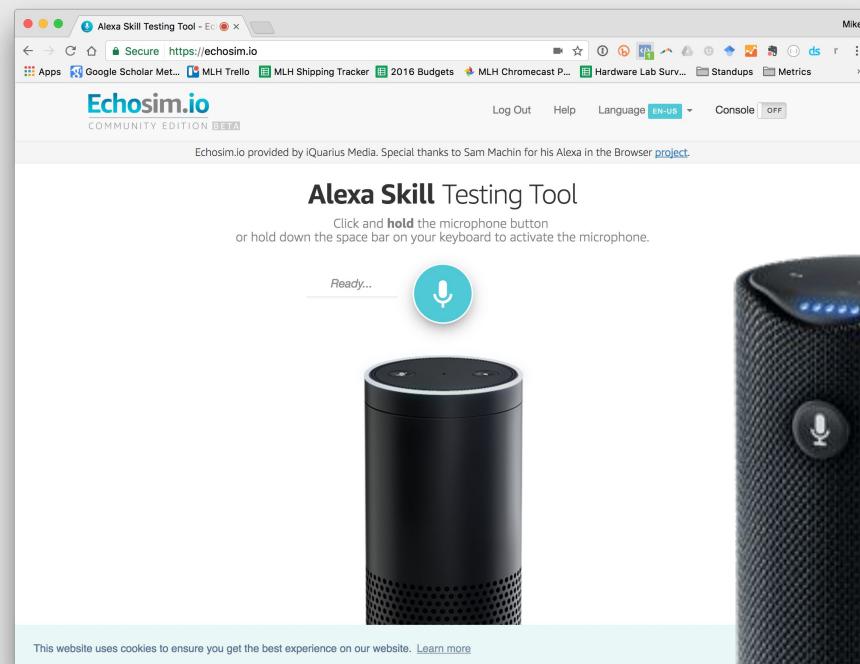
Skill I/O is only available when you invoke a skill that you created.

Try out Your Skill!

Head to [EchoSim.io](https://echosim.io) to try out your fact.

"Alexa, open [Your Invocation Name]."

If you want to try your skill on an Alexa Device, pair it with your account first!



Troubleshooting Your Skill

If you aren't getting a valid response, check the following:

1. Do you have the right ARN copied from your Developer Portal/Skill into your Lambda function?
2. Are you calling the right invocation name?
3. Are you saying launch, start or open?
4. Are you sure you have no other skills in your accounts with the same invocation name?

Table of Contents

1. Introduction to Alexa & Voice UIs
2. Developing for Alexa
3. Create a Lambda Function
4. Customize the Function
5. Develop Your Alexa Skill
6. Review & Quiz
7. Next Steps



Let's recap quickly...

- 1 Voice User Interfaces allow us to physically separate ourselves from devices.
- 2 Amazon Alexa makes it easy for you to create apps (skills) that utilize Voice User Interfaces.
- 3 Alexa takes care of speech recognition and context so you can focus on making a great app.

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What did you learn today?

We created a fun quiz to test your knowledge and see what you learned from this workshop.

<http://mlhlocal.host/quiz>

Get credit & freebies from Amazon!

<http://mlhlocal.host/alexa-promo>

Our friends at Amazon Web Services run promotions in certain areas to reward hackers for making skills for the Amazon Alexa Platform.

Fill this out to get credit!

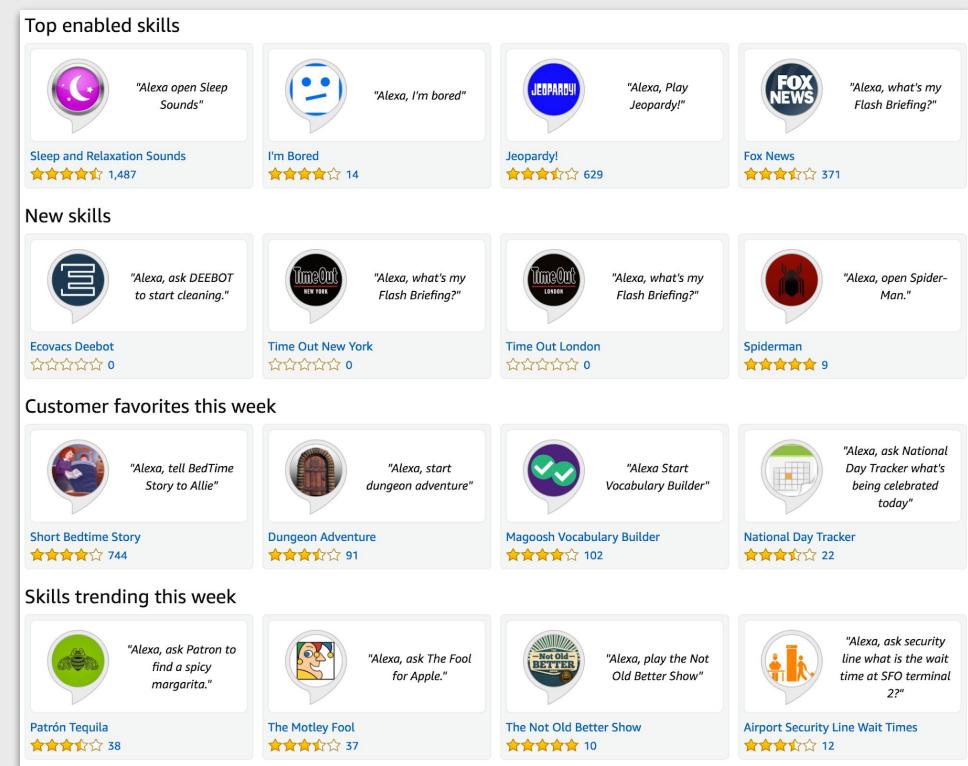


Next Steps: Publish your Skill!

You have a working skill, the next step is to publish it on the Alexa Skill Marketplace.

Instructions

- 1. Complete the “Publishing Information” and “Privacy and Compliance” sections on the developer portal.*
- 2. Ensure that your skill meets the basic requirements.*

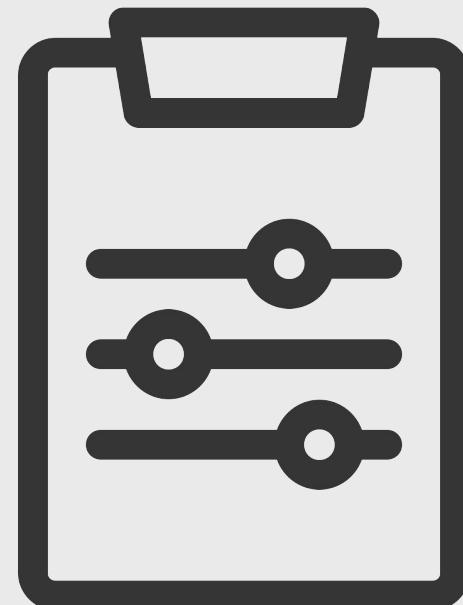


Next Steps: Use Slots to Customize Further

SLOTS enable you to pass additional data to your Lambda function. Use slots to return a fact in a specific category (Ex. “facts about my education”).

Instructions

1. *Read up about Slots and how to use them to pass data to your function.*
2. *Categorize your facts into a handful of groups.*
3. *Customize your function to return a fact based on the user specified category*



Learning shouldn't stop when the workshop ends...



Check your email for access to:

- These workshop slides
- Practice problems to keep learning
- Deeper dives into key topics
- Instructions to join the community
- More opportunities from MLH!

Workshop

Hacking with Amazon Alexa