# Amazon Alexa Skill - InfoSource

#### DIRECTED RESEARCH



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# **Objective:**

The objective of this project is to learn about Amazon Alexa skill kit to get more insight of the innovation toward the amazon Alexa. Alexa could not able to satisfy all queries for customers. Thus I want to overcome that issue. InfoSource try to cover all information which requires by customers.

#### **Overview:**

In this Directed Research, I have analyzed the natural language processing model for Amazon Alexa Skill. Alexa Skill kit is a collection of Self-service APIs, tools, documentation and code sample that makes if fast and easy for you to add skills to Alexa. Using my Alexa skill customers can access these new abilities by asking Alexa questions or making requests. Customer can look up answer to specific questions.

I have built a cloud-based service that handles that the requests for the skill type and host it in the cloud. The Alexa service route incoming requests to the appropriate service. It has voice-driven capabilities that functionality of Alexa device.

Amazon web Services is a service that lets you run code in the cloud without managing servers. Alexa send your code user requests and your code inspect the request, take any necessary action like looking up information online and then send back a response.

# **Language and Libraries Used:**

I have used Node.js for Alexa Skill. I have used different libraries like Request, Strict, cheerio as well as I have also used Amazon Alexa SDK and AWS Lambda. I have created function though Amazon Web Services and configured my skill thought Amazon Developer Portal with Amazon.

# Why Alexa?

Alexa is Amazon's cloud-based voice service available on tens of millions of devices from Amazon and third-party device manufacturers. With Alexa, you can build natural voice experiences that offer customers a more intuitive way to interact with the technology they use every day. Our collection of tools, APIs,

reference solutions, and documentation make it easy for anyone to build with Alexa.

Start building for voice today by adding new capabilities to Alexa, connecting Alexa to devices, or integrating Alexa directly into your products.

#### Amazon Alexa skill is eligible for:

- Education & Reference
- Food & Drink
- Game, Trivia & Accessories
- Health & Fitness
- Lifestyle
- Music & Audio
- Productivity

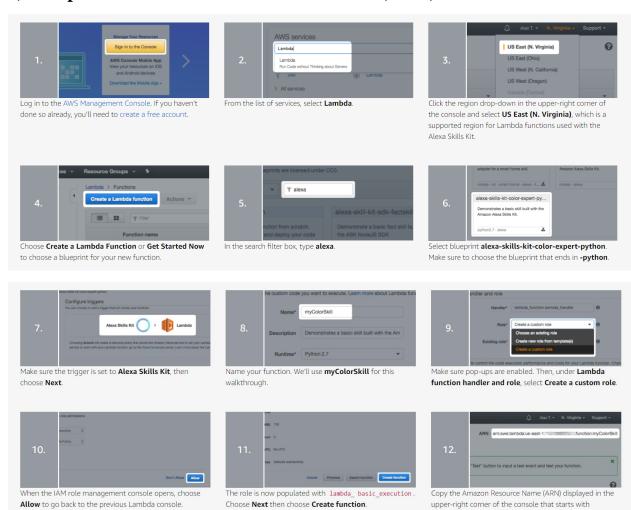
# Why Info Source is important?

The Internet, especially the World Wide Web, has surpassed most libraries in the quantity of information it makes available. However web has not surpassed libraries in the overall quality of information it makes available. In Amazon every skill has some particular restrictions because they focus only one point only like weather, cricket, football information only. I have developed Info source which will provide all information from Google, Facebook, Twitter and LinkedIn. I have used different APIs like to summarize everything. Whenever user will ask question to Info Source, it will search on google, facebook, linkedin and on twitter then rank web pages according to info match. Then summarizing APIs will restructure about the information and provide a valid output to user. Info Source will also parse ppt and pdf format documents which are available on web pages and it also collect information from same.

arn:aws:lambda...

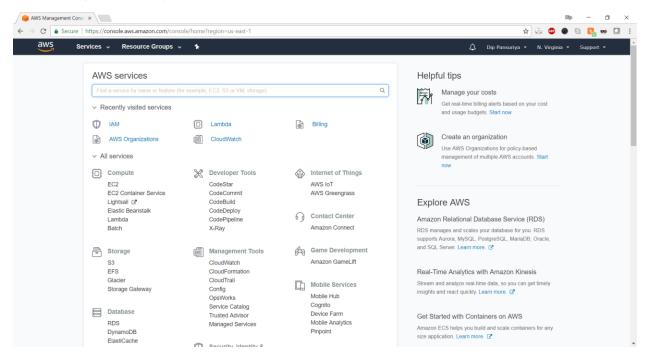
# **Skill Development (Environment Setup):**

## 1) Setup an account on Amazon Web Services (AWS)

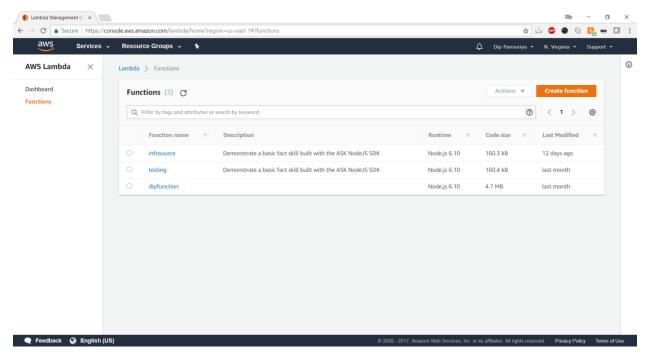


**♣** Environment Setup (AWS) for InfoSource:

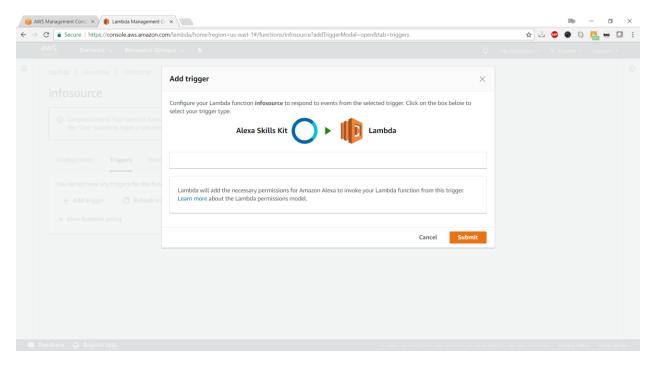
a) Login with my account to Amazon AWS Console:



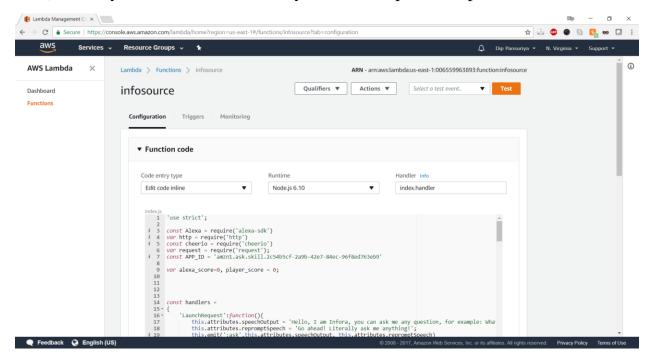
b) List of all Lambda functions and you can edit from account dashboard



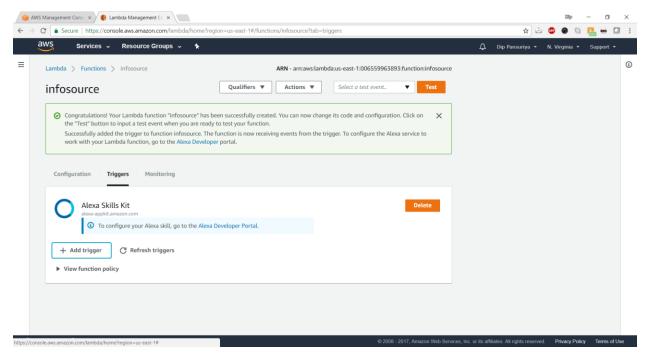
c) Setup basic lambda function according to your requirements and setup trigger with Alexa Skill Kit with lambda Function:



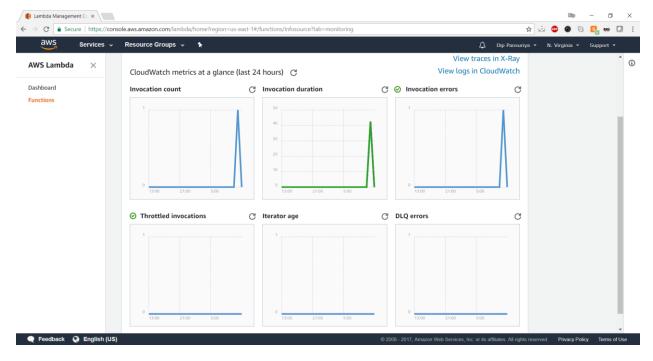
d) Write your code on console or you have to upload a zip file with code.



e) After Submitting everything properly you will get congratulation message from amazon for setting up lambda function.



f) You can monitor usage of your skill



## 2) Setup an Amazon Developer Portal to configure skill



Sign in to the Amazon developer portal. If you haven't done so already, you'll need to create a free account.



From the top navigation bar, select Alexa



Under Alexa Skills Kit, choose Get Started >.



Choose Add a New Skill



Name your skill. This is the name displayed to users in the Alexa app. For this example, we'll call it **Color Picker**.



Create an invocation name. This is the word or phrase that users will speak to activate the skill. For this walkthrough, we'll use the skill name color Picker (case-sensitive). Users will say, "Alexa, open Color Picker' to interact with your skill. Choose **Save** to continue to development for Color Picker.



Choose **Next** to continue to development for Color Picker.



In the **Intent Schema** box, paste the following JSON code.



Now we will add a Custom Slot Type.



Enter type **LIST\_OF\_COLORS**, and enter the following values.



Enter additional values if you'd like, and then choose Add.



Under **Sample Utterances**, enter all the phrases that you think users might say to interact with your skill. The more phrases you enter, the better the results. For our example, neste the following:

#### green red

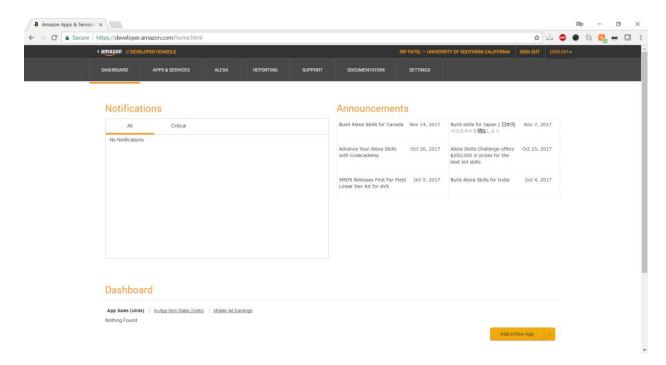


Choose **Next** and wait until the interaction model finishes loading, in no more than a few seconds.

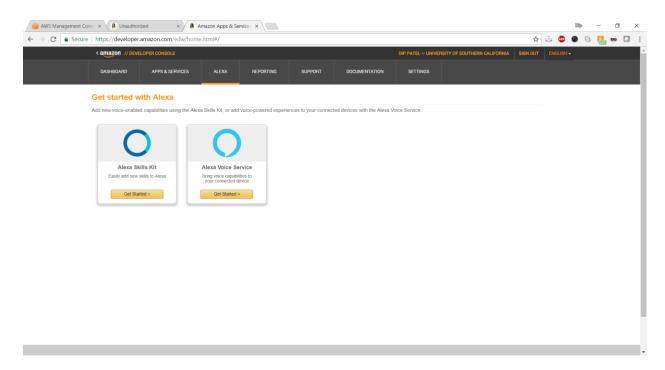


Select the Endpoint AWS Lambda ARN then paste your ARN code from step 1-14. Select North America as your region, and for Account Linking select No, then choose Next

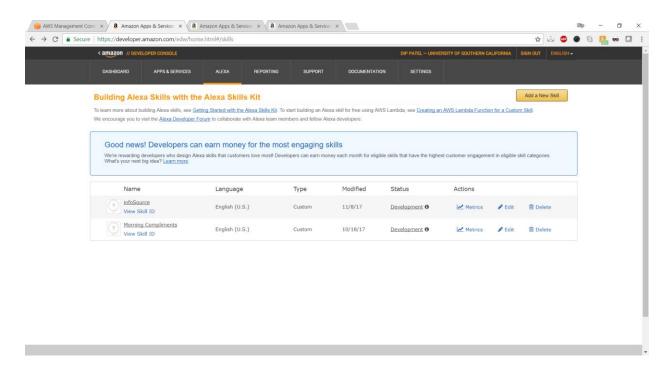
- ♣ Environment setup (Amazon Developer Portal) for InfoSource:
- a) Login on Amazon Developer Account with your credentials



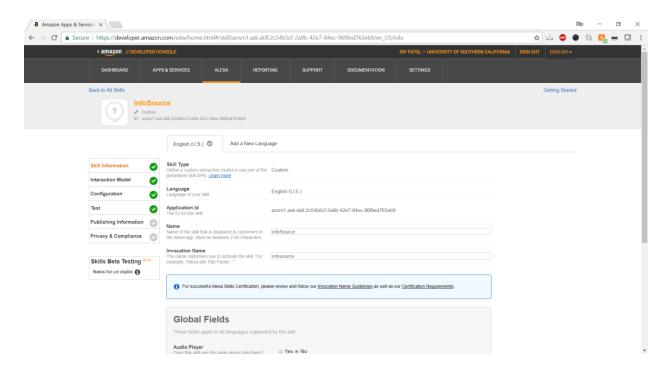
b) Select Amazon Alexa Skill Kit according to your requirements

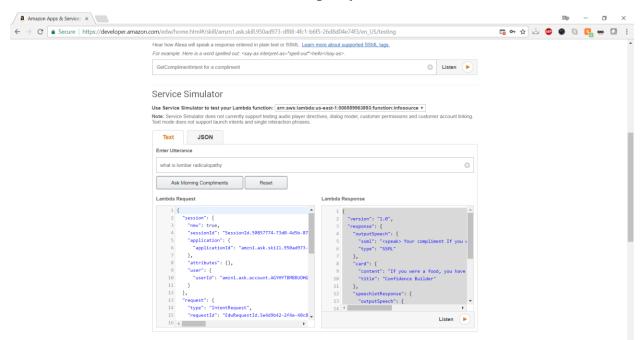


c) Develop Alexa Skill with Add a New Skill



d) Complete all steps according to your requirements and build them





#### e) I have Search what is lumbar radiculopathy?

# **Conclusion and Future Scope:**

Echo is closer to how we will use computers in the future because it's optimized for hands-free ambient use. As artificial intelligence, voice recognition, speech recognition and other technologies related to virtual assistants improve, these interfaces will do amazing things for us. They'll understand, interpret and make decisions based on past behavior. The future of virtual assistants isn't mobile devices and PCs, but microphone-speaker-Internet-connection devices that are custom- or purpose-built for exactly whatever space you're in. Alexa skill plays a key role in understanding live information from different sources and get an overview about it. In our directed research project, we learnt about different Node JS libraries that can be used to develop amazon Alexa skill. We explored different summarization API's to gather effective information from different sources.

There is tremendous scope in Alexa skills with different libraries available which provide complementary capabilities which can be used to build more effective applications. In future, we can explore more of their libraries to develop enormous applications.