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# Instructions

## Purpose

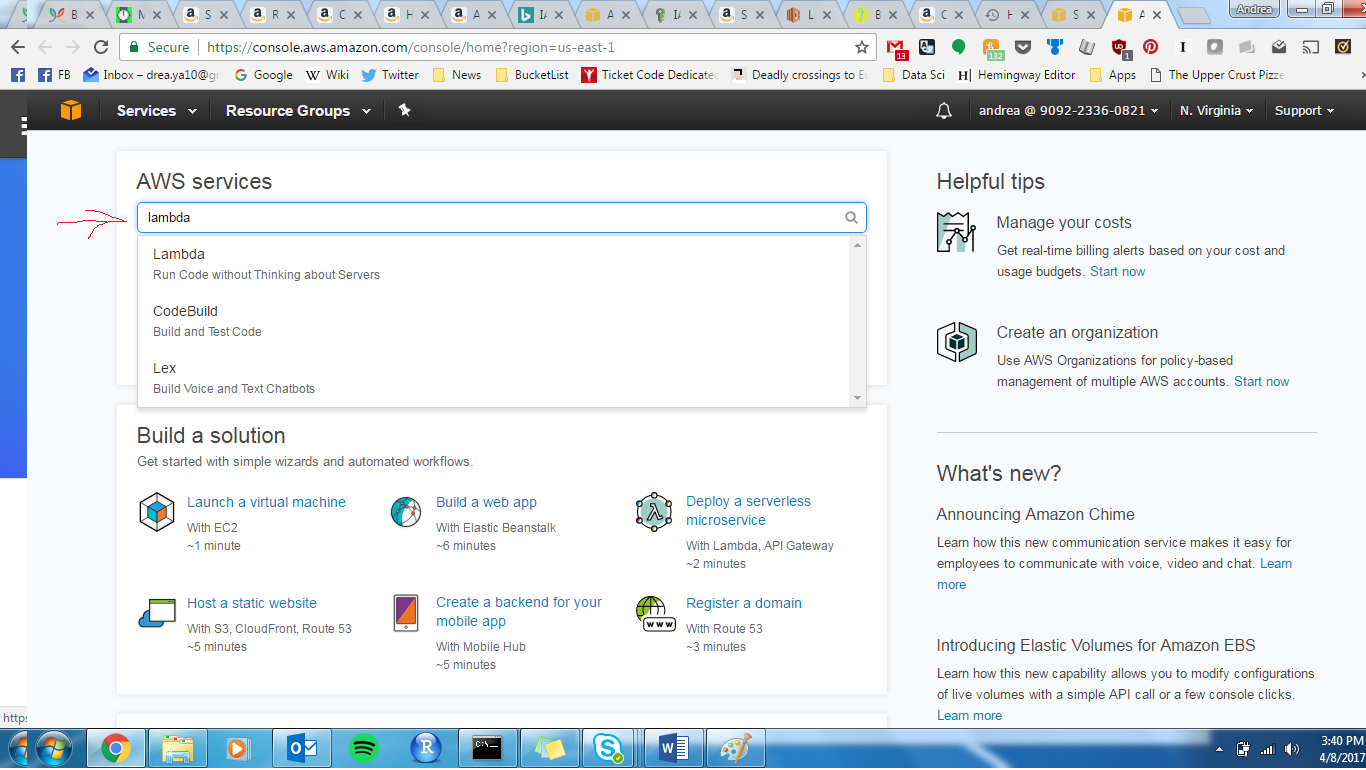
The purpose of this document is to create a working Alexa skill API demo.

## Notes

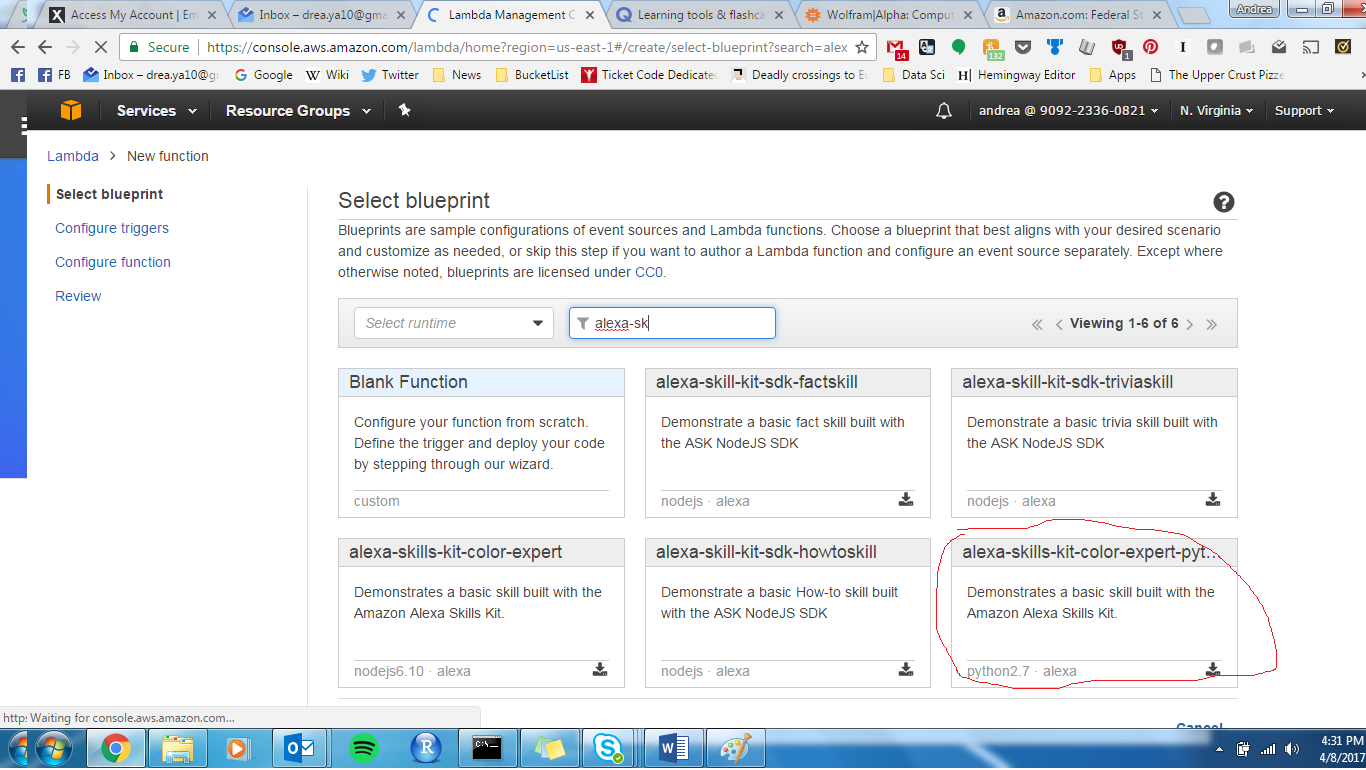
I followed along this website: <http://docs.aws.amazon.com/lambda/latest/dg/setup.html> and <https://developer.amazon.com/public/solutions/alexa/alexa-skills-kit/overviews/steps-to-build-a-custom-skill>. We did not test this sample code with our Echo Dots (because BAH wifi is secured…but you may have luck testing it on your own computer!).

## Steps

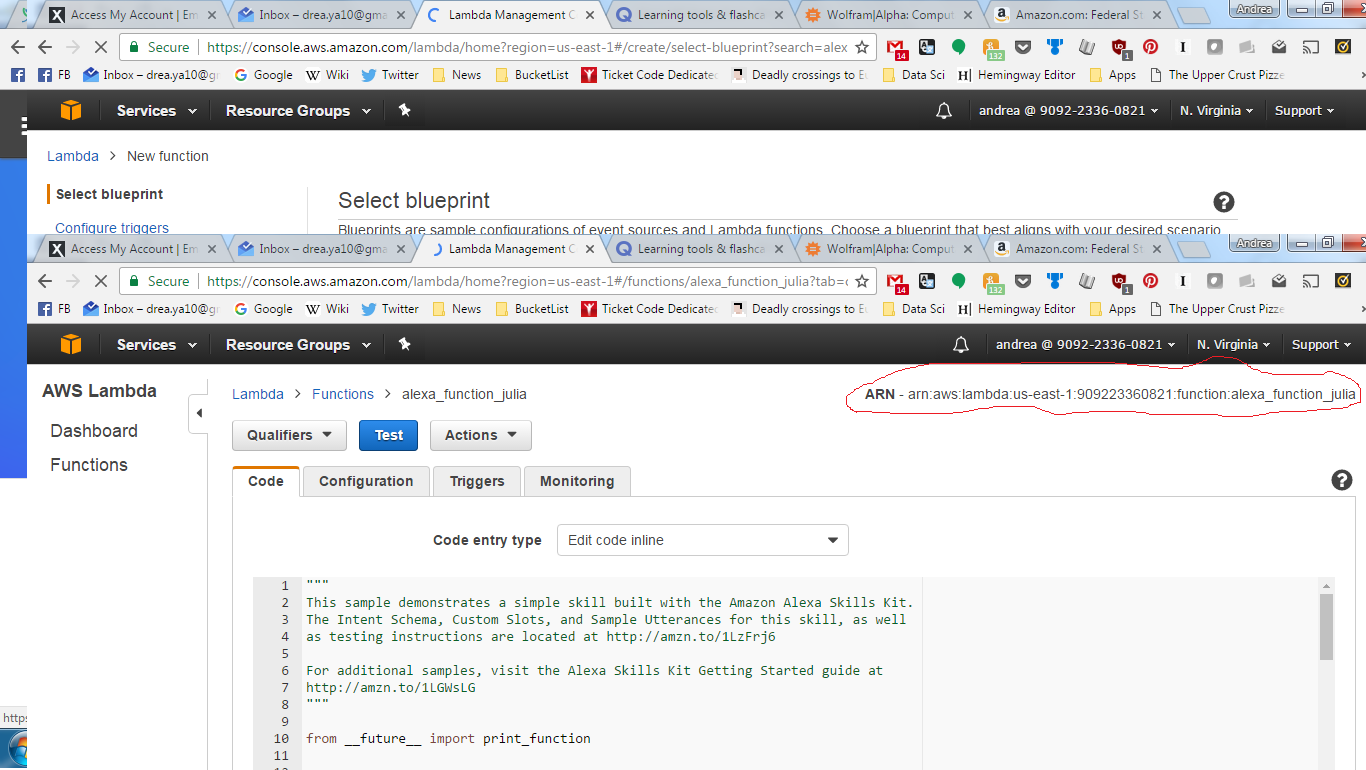
1. Create an account <https://aws.amazon.com/>
   1. You will not be charged
2. Create an account <https://developer.amazon.com/alexa>
   1. You will need this for later
   2. Please use the e-mail of your amazon echo dot, that way you can test on your dot (more details here <https://developer.amazon.com/public/solutions/alexa/alexa-skills-kit/docs/testing-an-alexa-skill> and <https://medium.com/@SmliaD/deploy-sample-app-by-alexa-skills-kit-ask-4e08e8efa681>)
3. Create an IAM username for yourself
   1. Sign in to the IAM console at https://console.aws.amazon.com/iam/.
   2. In the navigation pane, choose Users, and then choose Add user.
   3. For User name, type a user name, such as Administrator. The name can consist of letters, digits, and the following characters: plus (+), equal (=), comma (,), period (.), at (@), underscore (\_), and hyphen (-). The name is not case sensitive and can be a maximum of 64 characters in length.
   4. Select the check box next to AWS Management Console access, select Custom password, and then type the new user's password in the text box. You can optionally select Require password reset to force the user to select a new password the next time the user signs in.
   5. Choose Next: Permissions.
   6. On the Set permissions for user page, choose Add user to group.
   7. Choose Create group.
   8. In the Create group dialog box, type the name for the new group. The name can consist of letters, digits, and the following characters: plus (+), equal (=), comma (,), period (.), at (@), underscore (\_), and hyphen (-). The name is not case sensitive and can be a maximum of 128 characters in length.
   9. For Filter, choose Job function.
   10. In the policy list, select the check box for AdministratorAccess. Then choose Create group.
   11. Back in the list of groups, select the check box for your new group. Choose Refresh if necessary to see the group in the list.
   12. Choose Next: Review to see the list of group memberships to be added to the new user. When you are ready to proceed, choose Create user.
4. Create your access key and secret password
   1. Sign in to the IAM console at <https://console.aws.amazon.com/iam/> (if you are not there already)
   2. In the navigation pane, choose Users.
   3. Choose your IAM user name (not the check box).
   4. You will need to create another access key to get a new secret password
   5. Choose the Security Credentials tab and then choose Create Access Key.
   6. To see your access key, choose Show User Security Credentials. Your credentials will look something like this:
      1. Access Key ID: AKIAIOSFODNN7EXAMPLE
      2. Secret Access Key: wJalrXUtnFEMI/K7MDENG/bPxRfiCYEXAMPLEKEY
   7. Choose Download Credentials, and store the keys in a secure location. You will need this for the next step!
5. Set up the AWS Command Line Interface (CLI)
   1. Open your command line and type: pip install awscli
      1. You will have to wait a bit for this code to finish running
   2. When the code finishes running, you will then type ‘aws configure’ into the command line (without the quotation marks)
   3. You will then enter your aws\_access\_key\_id and press enter
   4. Enter your aws\_secret\_access\_key and press enter
   5. You will enter ‘us-east-1’ without the quotation marks as your region
   6. Then you will enter ‘json’ as your default output format
6. Verify that these two commands work on your command line
   1. aws help
   2. aws lambda list-functions
7. Go back to the AWS Console (<https://console.aws.amazon.com/>) or you can find it from your aws.amazon.com by clicking my account and selecting “AWS Management Console”
   1. Search for Lambda under the AWS services search bar



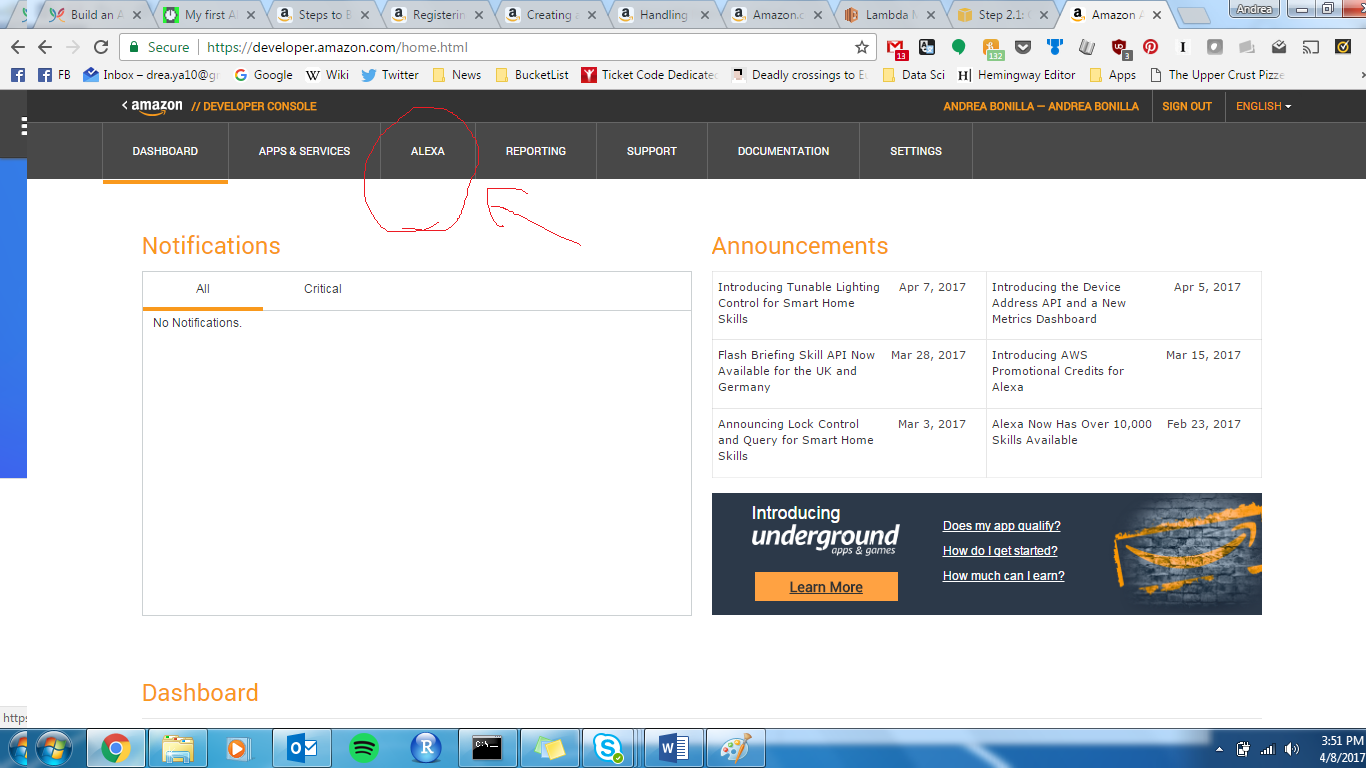
1. Choose **Get Started Now**
   1. If you have created functions already, you will see the Lambda > Functions page. On the list page, choose Create a Lambda function to go to the Lambda > New function page.
2. Search for the ‘alexa-skills-kit-color-expert-python’ in the ‘Select Blueprint’ tab and select this
   1. Select ‘Next’ on the ‘configure triggers tab’



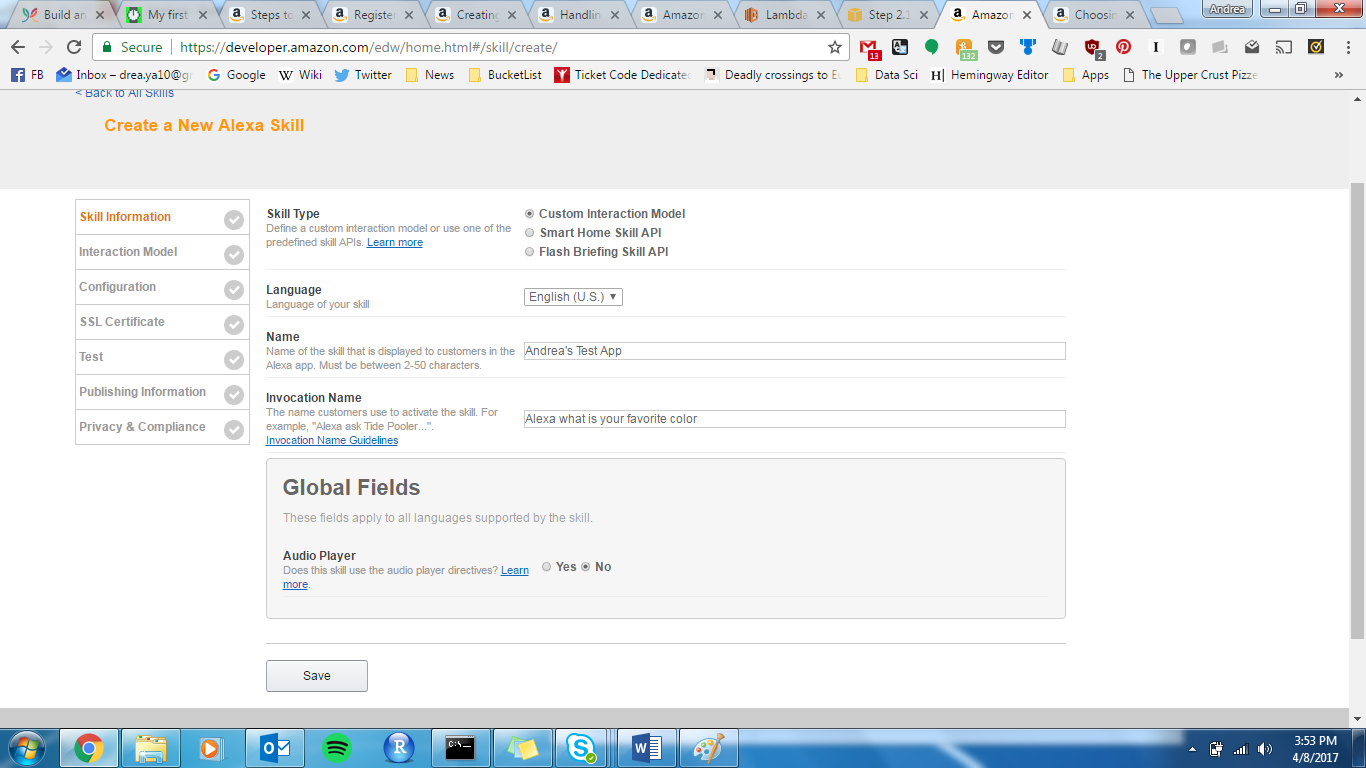
1. Name your function whatever you would like
2. Scroll down until you see ‘Lambda function handler and role’
   1. Go to ‘Role’ and select ‘Create new role from template(s)’
   2. Type your name in ‘Role name’
   3. Leave policy template blank
   4. Hit next
3. Select ‘create function’
4. Now you created your function!!
   1. Go to your command line and type ‘aws lambda list-functions’ and your new function should appear
5. Click the function on your lambda functions list page and you should see your ARN number in the upper right hand corner
   1. Save this ARN for later



1. You now have everything you need to start publishing your skill!
2. Log into your <https://developer.amazon.com/alexa> account (see step 2 if you did not create your account)
   1. You should land in the developer portal
   2. Click the ‘Alexa’ tab in the portal
   3. Select ‘Alexa Skills Kit’
   4. Now click ‘Add a New Skill’



1. We are creating a custom skill and you can name your function whatever you would like
   1. You can put in the Invocation Name ‘Alexa what is your favorite color’
   2. Click save



1. You will now fill out the interaction model tab. In the context of Alexa, an *intent* represents an action that fulfills a user’s spoken request. *Intents* can optionally have arguments called slots. Each intent has two properties 1) The *intent property* gives the name of the intent and 2) the *slots property* lists the slots associated with that intent. ([Based on this](https://developer.amazon.com/public/solutions/alexa/alexa-skills-kit/docs/developing-an-alexa-skill-as-a-lambda-function))
   1. Put this in the **Intent Schema area**

{

"intents": [

{

"intent": "MyColorIsIntent",

"slots": [

{

"name": "Color",

"type": "LIST\_OF\_COLORS"

}

]

},

{

"intent": "WhatsMyColorIntent"

},

{

"intent": "AMAZON.HelpIntent"

}

]

}

* 1. Create **a type of Custom Slot** called ‘LIST\_OF\_COLORS’ and list these values (one per row). Feel free to add more colors!

green

red

blue

orange

gold

silver

yellow

black

white

purple

teal

pink

gray

* 1. Put this in your **‘sample utterances’** box: (The first word is the Alexa action that is associated with the words next to it—e.g, INTENT: question or words associated with intent)

MyColorIsIntent my favorite color is {Color}

WhatsMyColorIntent what's my favorite color

WhatsMyColorIntent what is my favorite color

WhatsMyColorIntent what's my color

WhatsMyColorIntent what is my color

WhatsMyColorIntent my color

WhatsMyColorIntent my favorite color

WhatsMyColorIntent get my color

WhatsMyColorIntent get my favorite color

WhatsMyColorIntent give me my favorite color

WhatsMyColorIntent give me my color

WhatsMyColorIntent what my color is

WhatsMyColorIntent what my favorite color is

WhatsMyColorIntent yes

WhatsMyColorIntent yup

WhatsMyColorIntent sure

WhatsMyColorIntent yes please

1. Now we will fill out the Configuration Tab
   1. For the end point select ‘AWS Lambda ARN’, select ‘North America’
   2. Remember the ARN we saved from step 15? Copy and paste that text into the North America open text box
   3. Select ‘No’ in Account Linking
   4. Leave the permissions options unchecked
2. We can now play around with our skill in the ‘test’ tab
   1. Under the ‘Service Simulator’ section, type ‘my favorite color is blue’ (or whatever is your favorite color) and hit “ask \_\_\_FUNCTION NAME\_\_”
   2. You will now be able to hear Alexa’s response!
3. Fill out the Publishing Information tab
   1. Some sample phrases can be:
   2. “Alexa what is your favorite color”
   3. “What’s my favorite color”
4. Fill out the Privacy and Compliance tab
5. Hit ‘Submit for Certification’
   1. If the skill has been certified, the email will provide an estimate for when it will become available to end users.
   2. If the skill could not be certified, the email provides information about the issues you need to correct. You can make any necessary changes and then re-submit
6. If your developer account is associated with your amazon echo dot account you can say “Alexa, do **INVOCATION\_NAME**” where invocation
   1. I think this you do not need to fill out the publishing information or privacy tab…As long as you save your skill I think you can use the “Alexa, do **INVOCATION\_NAME**”

## Helpful links

<https://developer.amazon.com/public/solutions/alexa/alexa-skills-kit/getting-started-guide> <- read every page as well (look at the right menu options)

<https://developer.amazon.com/public/solutions/alexa/alexa-skills-kit/overviews/steps-to-build-a-custom-skill> <- read every page in the Alexa Skills Kit – Custom Skills tab (look at the right menu options)

<http://moduscreate.com/build-an-alexa-skill-with-python-and-aws-lambda/> <- tutorial 1

<https://hackernoon.com/my-first-alexa-custom-skill-6a198d385c84> <- tutorial 2

NOTE: Need to add python dependencies: <http://docs.aws.amazon.com/lambda/latest/dg/lambda-python-how-to-create-deployment-package.html#deployment-pkg-for-virtualenv>

<https://docs.aws.amazon.com/lambda/latest/dg/with-s3-example-deployment-pkg.html#with-s3-example-deployment-pkg-python>

<https://docs.python.org/3/library/venv.html>

<http://docs.python-guide.org/en/latest/dev/virtualenvs/>

conda update python (run this first)

1. Run this code in command line:

python -m venv **alexa**

**alexa**\Scripts\activate.bat

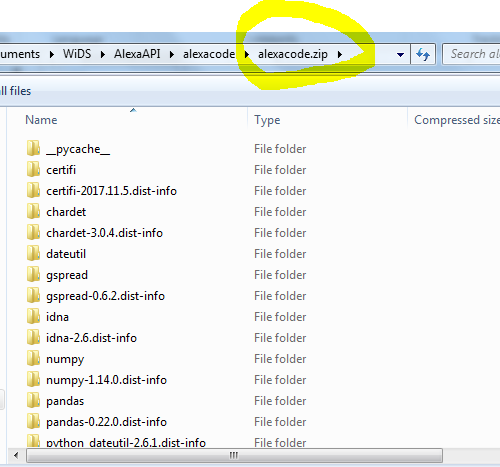
pip install PACKAGENAME

1. copy every file with no subfolders. In windows go to dist

https://joarleymoraes.com/hassle-free-python-lambda-deployment/

xcopy site-packages C:\Users\577794\Documents\WiDS\AlexaAPI\alexacode /s

1. Go to the directory, highlight every single file, right click “Send to…compress”, and zip everything in the same folder. THERE CANNOT BE AN EXTRA FOLDER IN THE ZIP FILE



NOT

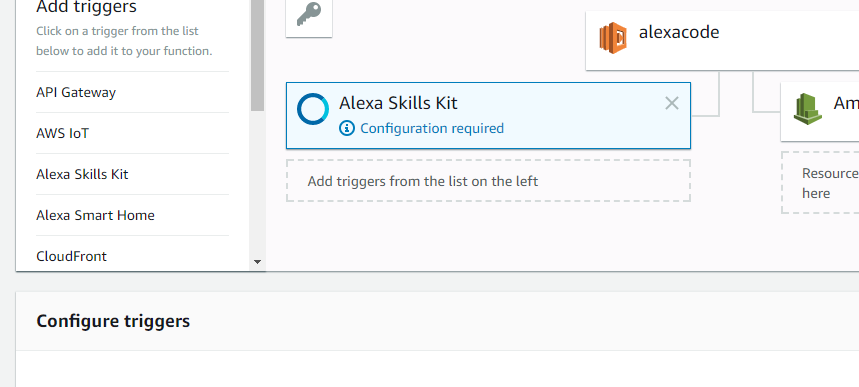
1. run this code in directory of location of zip file

NOTE: handler must be named after zip file name.

aws lambda create-function --region **us-east-1** --function-name **alexacode** --zip-file fileb://**alexacode.zip** --role **arn:aws:iam::909223360821:role/widsrole** --handler **alexacode.lambda\_handler** --runtime python3.6 --profile adminuser --timeout 10 --memory-size 1024

PYTHON FILE NAME MUST BE THE SAME

1. Go to console.aws.amazon.com and go to your function, then add “Alexa Skills Kit” to the list of triggers. Hit configure and then save.



The adminuser profile needs to be updated.

I finally succeed by using

**~/.aws/config**

[default]

region = us-east-1

output = json

**~/.aws/credentials**

[adminuser] // <- here changes to adminuser

aws\_access\_key\_id = \*\*\*\*\*\*\*\*\*\*\*\*

aws\_secret\_access\_key = \*\*\*\*\*\*\*\*\*\*\*\*

region = us-east-1 // <- note this line