

ABSTRACT

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.

A career guide is an individual or publication that provides guidance to people facing a variety of career challenges. Students in the earlier stage may not be sure about their career, what they want to become and even if they are sure they might not have enough information about that field. Our career guide provides them the brief explanation of all the different kinds of careers and helps them to make a decision.

It is a comprehensive, developmental program designed to assist individuals in making and implementing informed educational and occupational choices. A career guidance and counseling program develops an individual's competencies in self-knowledge, educational and occupational exploration, and career planning.

Career guide and counseling programs help individuals acquire the knowledge, skills, and experience necessary to identify options, explore alternatives and succeed in society.

Many people seek out assistance from career development professionals only when they are trying to choose a career for the first time, or perhaps when they are going through a transition. The intent of career guide, however, is to provide support to individuals throughout their entire lives.

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1. INTRODUCTION TO AWS

1.1 Introduction

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.

1.2 Overview of AWS Services

Amazon Web Services (AWS) is the market leader in IaaS (Infrastructure-as-a-Service) and PaaS (Platform-as-a-Service) for cloud ecosystems, which can be combined to create a scalable cloud application without worrying about delays related to infrastructure provisioning (compute, storage, and network) and management.

With AWS you can select the specific solutions you need, and only pay for exactly what you use, resulting in lower capital expenditure and faster time to value without sacrificing application performance or user experience.

Amazon offers a whole universe of products and services for building or expanding your cloud environment.

New and existing companies can build their digital infrastructure partially or entirely in the cloud with AWS, making the on-premise data center a thing of the past. The AWS cloud ensures infrastructure reliability, compliance with security standards, and the ability to instantly grow or shrink your infrastructure to meet your needs and maximize your budget, all without upfront investment in equipment.

Here's a look at some of the services Amazon offers for making IT design and management simple with AWS.

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1.2.1 Essential AWS Services

Amazon offers many services for application development and analytics. Here are some key building blocks in the AWS environment and a brief description of how they are leveraged against your needs.

1.2.2 EC2: Server configuration and hosting

Deploy your army of servers with Amazon EC2. In just minutes bring virtual machines—called instances—online. Select AMI's with operating system of your choice (Linux or Windows) and start deploying your clusters. There are three popular instance types when creating EC2 instances:

- **Compute optimized.** Used for instances that will require extremely high request rates, this configuration leverages industry leading processors.
- **Memory optimized.** These instances are built with the most efficient per-GB memory cost.
- **Storage optimized.** Storage optimized EC2 instances access extremely fast SSD storage to serve data retrieval requests with lightning speed.

For more information about EC2 instances and the different series that can be leveraged against your specific needs, check out the [AWS Instance Types page](#).

1.2.3 Elastic Load Balancing: Scalable performance

Amazon includes a powerful, scalable load balancing solution in AWS Elastic Load Balancer (ELB). ELB ensures that client requests are sent to the appropriate servers and avoiding any server hotspots (over-utilizing one server and under utilizing others)

AWS supports two types of load balancing: classic Load balancing and Application Load Balancing.

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- **Classic Load Balancing**, which analyzes basic network and application data and ensure fault tolerance if one of the EC2 instances running web application happens to fail.
- **Application Load Balancing**, which looks at content request and routes traffic to the appropriate container or micro service based on the Application content information.

As with most AWS services, you only pay for the services that you use. In case of ELB service, you pay for by an hour and by the amount of data processed.

1.2.4 Cloud Front: Deliver a better user experience

Amazon Cloud front is a global content delivery system that leverages Amazon's vast global infrastructure to deliver contents with optimized speed and cost. Cloud Front ensures that content is closer to the users and improves the user experience by delivering the content faster by serving the content from the AWS region closer to the end user.

Cloud Front works seamlessly with AWS services. With no minimum usage commitment, experimenting with configurations and instances to find ways to improve performance is extremely easy.

1.2.5 Elastic Block Store (EBS): Low-latency instance access

AWS Elastic Block Store provides persistent Block-level storage volumes for your EC2 instances with low latency. It also allows your system to access high speed SSD storage and layer your security with Access Control Lists and encryption.

1.2.6 Amazon Route 53: The AWS DNS service

Handle DNS routing with the high-speed, low cost Route 53 service from AWS. Translate machine hosts and named application to IP addresses and back within your VPC and connect resources like web servers, S3 buckets, and elastic load balancers.

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1.2.7 Cloud watch: Monitor your AWS Environment

Cloud watch is the native monitoring service for resources and applications running in AWS. Gather logs and monitor metrics for key resources like:

- Amazon EC2 instance
- Amazon Dynamo DB tables
- Amazon RDS DB instances
- Custom metrics generated by your applications and services

With Cloud watch you can achieve full visibility into all of your AWS components.

1.2.8 Optional AWS Support Services

In addition to the essential cloud services, Amazon offers a host of optional products for enhancing and securing your cloud ecosystem. Here's a look at some of the more popular helper services.

1.2.9 Lambda: Functions for optimized compute

Pay only for the actual milliseconds of compute time your code require to execute and avoid complexity and management overhead of configuring and managing underlying AWS infrastructure. AWS Lambda abstracts underlying AWS infrastructure and allows developers to focus on running their code.

1.2.10 AWS Configuration: Infrastructure management

Keep a bird's eye view on your AWS infrastructure and stay secure and compliant with AWS Config. See up to date resource inventory and track any changes to your infrastructure from one convenient management panel.

1.2.11 Elastic Beanstalk: Build and scale great web apps

As the name implies, it's impossible to grow faster than Elastic Beanstalk, the AWS tool for deploying and managing web applications designed in most of the two Programming

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languages. The adjustable auto scale settings allow your apps to grow and contract as needed to avoid latency and wasted resource utilization.

1.2.12 Cloud Trail: Monitor and audit activity

Application program interfaces calls (APIs) take place within your environment at a rate that can vary from a few transactions per minute to millions per second. Cloud Trail captures key information about these transactions, including the source IP address, the event time, and more. The data from Cloud Trail is especially critical for meeting security standards and complying with internal audits and standards or regulations such as PCI and HIPAA.

1.2.13 Amazon EFS: Manage your files

Quickly and easily create file systems through a simple web interface with Amazon Elastic File System (EFS). EFS grow and shrink your file storage system as needed so you never run out of space. Mount one file system to multiple EC2 instances to share common data and workload sources, manage access control lists, and more with EFS.

These services add massive flexibility, scalability, and monitoring features that will help your organization master your VPC environment in AWS.

1.2.14 Special Purpose AWS Apps

Amazon also offers some highly specialized tools for getting the most out of your cloud resources. Amazon's comprehensive list of products and services is expansive, but these are some of the most popular specialty apps.

1.2.15 Kinesis: Optimize data flow

A three-pronged tool for fine tuning multimedia data flow, Amazon Kinesis is a platform for loading and analyzing streaming data. It consists of:

Kinesis Firehouse, streaming analytics services, which ingests up to terabytes of data and send it to other AWS services such as S3, Redshift and AWS ES.

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Kinesis Analytics, which lets you collect masses of data via simple SQL queries, with no need to bring in developers versed in complex programming languages.

Kinesis Stream, which takes these torrents of data and interactively helps you develop custom applications for processing it. With Kinesis Streams you can:

- Elastically scale your environment to respond to volume.
- Transform terabytes of raw streaming data into interactive dashboards.
- Generate alerts when critical events take place.
- Trigger automated responses to common problems like latency.
- Integrate with other Kinesis elements and AWS to optimize delivery.

1.2.16 VPC Flow: Analyze your traffic

VPC flow logs are detailed records of the IP traffic passing to and from a lone port, a subnet, or your entire VPC environment. Flow Logs enable you to get into the deep analytics details about who is going where and when. The information they provide about your network will help you develop architecture and budget plans for ongoing operations and also allows you to conduct network forensics using the VPC flow logs including what traffic is worth the compute and storage cost of capturing.

1.2.17 Dynamo DB: Fast, easy database access

Amazon Dynamo DB is a fully managed NoSQL database service in AWS. It works with document and key-value storage models, and its high availability and flexibility make it perfect for gaming, mobile apps, and more. Spin up databases with ease and save on compute expenses with Dynamo DB

1.3 AWS S3

Amazon Simple Storage Service (Amazon S3) is storage for the Internet. You can use Amazon S3 to store and retrieve any amount of data at any time, from anywhere on the web. You can accomplish these tasks using the AWS Management Console, which is a simple and intuitive

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web interface. This guide introduces you to Amazon S3 and how to use the AWS Management Console to complete the tasks shown in the following figure.



Fig 1.3 AWS S3

1.4 Lambda

AWS Lambda lets you run code without provisioning or managing 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. Just upload your code and Lambda takes care of everything required to run and scale your code with high availability. You can set up your code to automatically trigger from other AWS services or call it directly from any web or mobile app.

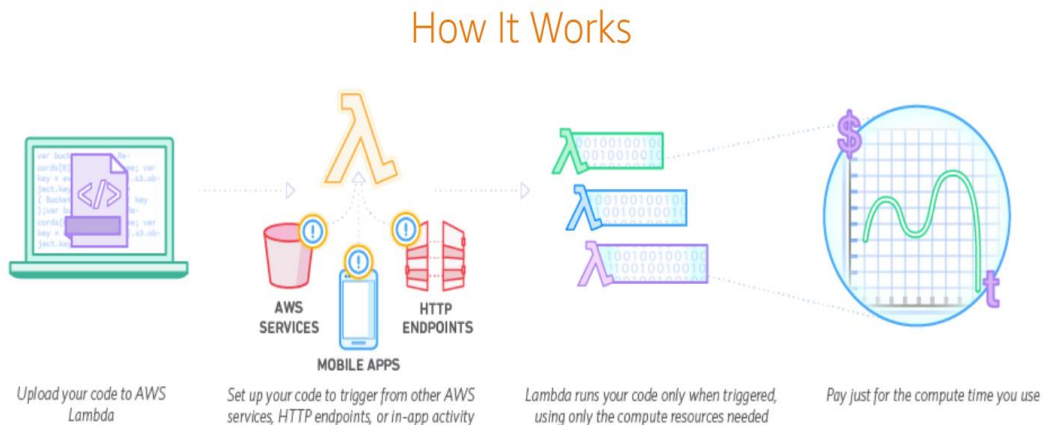


Fig 1.4 Lambda

1.4.1 Creating a Lambda Function

1. Click on Lambda Service among the list of services provided in AWS Console.
2. Click on create function in Lambda Dashboard.
3. Choose AUTHOR FROM SCRATCH from the list of options to create function.
4. In Basic Information, Enter Function Name, User Specified Programming Language and Complete the execution role (custom role is lambda_basic_execution).
5. Click on create function.
6. After creation of function, select your function name and click on it.
7. After loading of page, write the code in lambda function with the specified extension and edit the code in lambda handler.
8. After writing code ,configure test events.

I. Sample Arithmetic Operations using Lambda

a)arithmetic.py

```
def sum(event,context):  
  
sd=event["a"]+event["b"]  
  
returnsd  
  
defmul(event,context):  
  
return event["a"]*event["b"]  
  
def div(event,context):  
  
return event["a"]/event["b"]  
  
def sub(event,context):  
  
return event["a"]-event["b"]
```

i. Test events

```
{  
  "a": 2,
```

"b": 3

}

1.5 RDS

Amazon RDS provides cost-efficient and scalable relational database capacity while automating time-consuming administration tasks such as hardware provisioning, database setup, patching and backups. It frees you to focus on your applications so you can give them the fast performance, high availability, security and compatibility they need.

1.5.1 Benefits and Features

1. Easy to Administer
2. Highly Scalable
3. Available and Durable
4. Fast
5. Secure
6. Inexpensive

\

2. INTRODUCTION TO ALEXA

2.1 Introduction

You may have heard of Amazon Echo, the voice-enabled speaker from Amazon that allows you to get things done, by using your voice.

The brain behind Echo and other Amazon voice-enabled devices like Echo Show, Echo Dot, and Amazon Tap is Alexa — the cloud based service that handles all the speech recognition, machine learning, and Natural Language Understanding for all Alexa enabled devices.

Alexa provides a set of built-in capabilities, referred to as skills that define how you can interact with the device. For example, Alexa's built-in skills include playing music, reading the news, getting a weather forecast, and querying Wikipedia. So, you could say things like:

Alexa, play Music

Alexa, what's the weather in India

In addition to these built-in skills, you can program custom skills by using the Alexa Skills Kit (ASK). An Alexa user can then access these new abilities by asking Alexa questions or making requests.

In this lesson, you will create an Amazon developer account and use it to create your own skill!

2.2 Build an Alexa Skill

All skills, like web or mobile applications, contain two parts: Interaction Model (the frontend) and the Hosted Service (the backend).

- i. Interaction Model (frontend) — much like the graphical user interface (appearance) of a mobile app, Alexa skills needs a Voice User Interface (VUI).
- ii. We'll refer to the VUI as the interaction model — it defines what functionalities or behaviors the skill is able to handle.

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- iii. Hosted Service (backend) — The programming logic, hosted on the internet, that responds to a user's requests

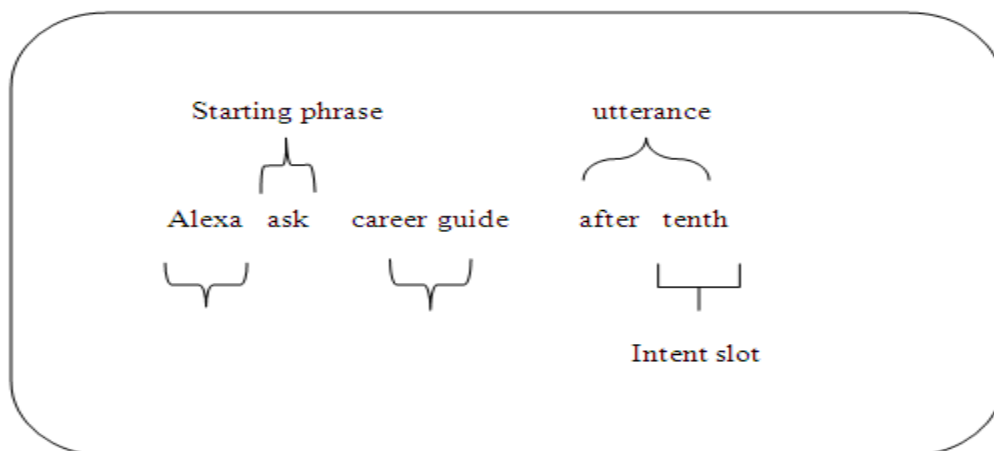


Fig 2.2 Building an Alexa Skill

Interacting with an Alexa Skill:

As we saw in the previous example, to begin a conversation with Alexa-Enabled devices, like the Amazon Echo, you say the word "Alexa", followed by the request, like:

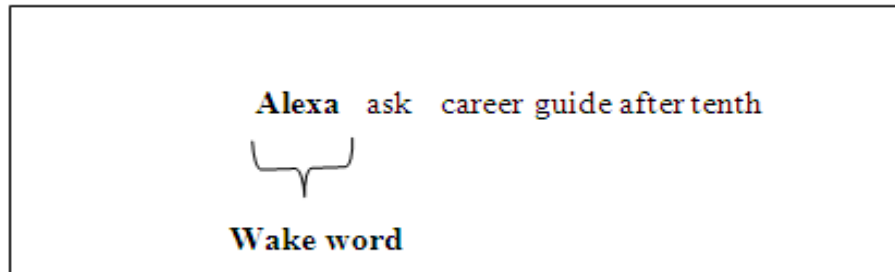
As we saw in the previous example, to begin a conversation with Alexa-Enabled devices, like the Amazon Echo, you say the word "Alexa", followed by the request, like



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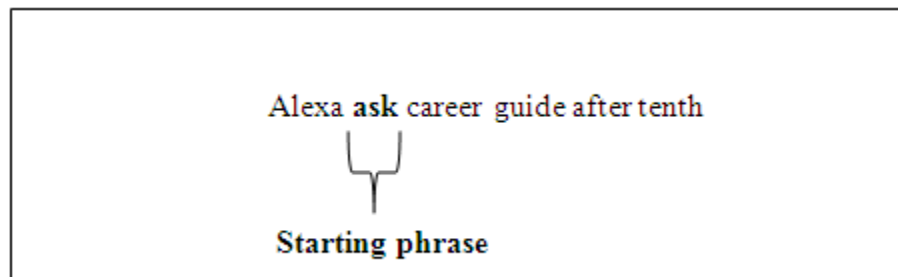
Wake word

Here, "Alexa" is the default wake word. It wakes up the device and tells it that the user wants to talk to Alexa. "Alexa" is the wake word for all voice-enabled Amazon devices.



Starting phrase

Following the "Alexa" wake word, users must use a starting phrase — in this case "ask" — to specify the type of request they are using. Visit the [Alexa developer documentation](#) for a list of other starting phrases.



Invocation name

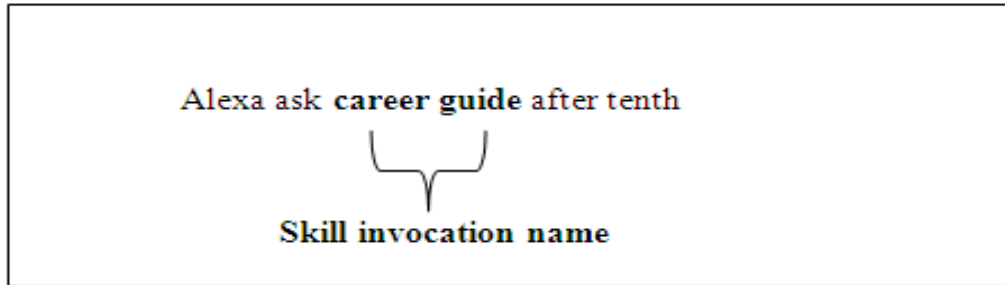
In the example above, "career guide" is the invocation name. The user says

“Career guide” to instruct Alexa to invoke the Help career guide skill, a skill that

Retrieves basic syntaxes.

Every skill, custom or built-in, has a unique invocation name.

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Intents & Utterances

Let's say we want to create an Alexa skill that will do just one thing — respond with a message.

Intents

Before we get into designing the frontend and the backend, it's a good practice to think of the features or behaviors your skill will have. We call these behaviors intents.

Our skill is pretty basic. It will have only one intent — a "Welcome" that responds with a greeting. A typical skill will have multiple intents. Each intent defines a specific behavior, like buttons on a web page. Intent takes user input and executes some code based on it.

Sample utterances

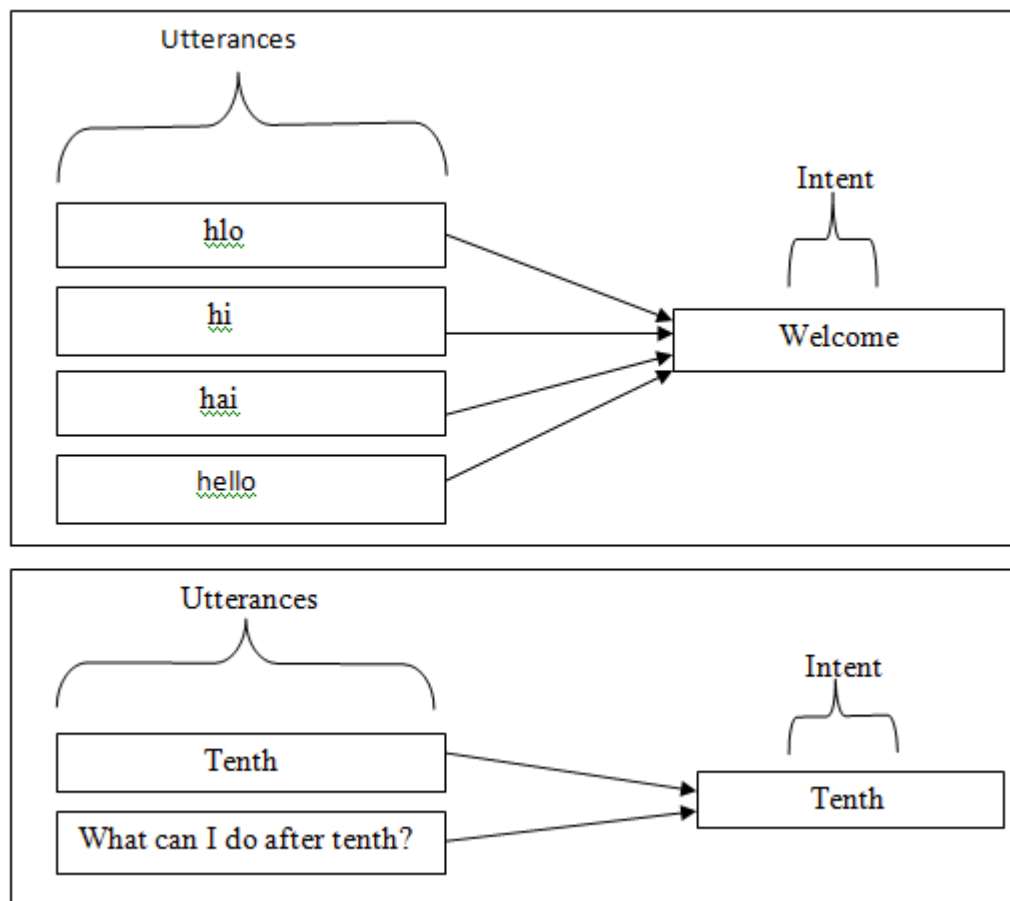
Speaking of user input, let's now think through some phrases our users might say which our skill should be able to respond to with a greeting. For example, our skill should give a response to the following greetings.

Hello

Hello..!Welcome to career guide, your buddy is ready to clear all your doubts.

These are what we call sample utterances. They Alexa ask connect the intents to phrases spoken by the user. In this case, these sample utterances will

Alexa ask map the spoken user input to our "Welcome" or "career guide".



2.3 Alexa Developer Console

We are now ready to create our first Alexa skill.

The first thing we will do is create the interaction model, also called the Voice User Interface (VUI) for our skill. We will do that using the Alexa Developer Console. If you don't have an Amazon Developer Account, Signup for a **free** account. Access the **Alexa Developer Console** using either method below: Via developer.amazon.com

1. Sign into your Amazon Developer Account.
2. Mouse over **Your Alexa Consoles** in the top navigation bar.
3. In the dropdown menu, click on **Skills**.

Via developer.amazon.com/home.html

1. Sign into your Amazon Developer Account.
2. Click on **Alexa Skills Kit** in the top navigation bar.

2.3.1 Create Skill

To start building a skill, click on the **Create Skill** button in the top right corner. This will bring you to the "Create a new Alexa Skill" wizard. We will walk through this wizard step by step.

2.3.2 Step 1: Skill Information

Follow the steps below to complete the **Skill Information**:

1. **Skill Name** — the name of the skill as the Alexa skills store will display it. Name your skill **TESTEVENTS** and click on **Next**.
2. **Skill Model** — while there are a few different models, including Flash Briefing, Smart Home, and Video, we will focus on the Custom Interaction Model in this course. Select the **Custom Skill Model** and click **Create skill**.

2.3.3 Step 2: Skill Builder

Once the skill is created, you will be taken to the Skill Builder.

1. **Interaction Model** — in the menu to the left, under **Interaction Model**, click on **Invocation**.
2. **Skill Invocation Name** — this is the name that users will say to launch the skill. As a general rule, you want the invocation name to be easy to pronounce, not too long, and at least two words. Here are some guidelines for choosing an invocation name.
3. Because **TEST EVENTS** is invalid, set the invocation name to **TEST EVENTS**— (Amazon Alexa doesn't allow one-word invocation names).
4. Click on **Save Model**.

2.4 Create the Interaction Model

You came up with unique utterances that map to your skill's "Welcome". Some of your utterances may include "hello", "hi Alexa", "welcome", and. It's time to put your planning to use by building your first interaction model. If you are not there already, go to the **Build** tab of the Skill Builder Dashboard.

2.4.1 Create Intent

Follow the instructions to create your "Welcome":

1. Inside the Skill Builder Dashboard, click on the **Add** button in the **Intents** section on the left side of the page.
 2. Choose "Create custom intent", and type in Welcome in the text box next to it.
 3. Press **enter** or click on **Create custom intent** button
- Congratulations, you've just created your first intent!

2.4.2 Add Sample Utterances

Follow the steps below to map a few sample utterances to your "Welcome":

1. With **Welcome** selected on the left side bar, type in the sample utterances one by one — hello, hi Alexa and add more utterances if you like.
2. Click **Save Model** on the top navigation bar.
3. Click **Build Model** on the top navigation bar (this might take a few minutes to complete).

You have now built your first Voice User Interface (VUI). We are ready to link this to our backend - programming logic that produces a response to our user.

2.5 Connect Lambda Function

Now that we have created the interaction model (the frontend), it's time to connect that to our programming logic (the backend).

For this course, we will be using **AWS Lambda** functions to host our programming logic. For Alexa to be able to talk to our backend, it needs access to the internet so it can always call the Lambda function from the code.

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Lambda is a server-less computer service from **Amazon Web Services (AWS)** that runs your code in response to events. For our Alexa skill, you will trigger the Lambda function when you start the new skill.

For now, use our Lambda function

On the right, we have included the code that this Lambda function contains. We will walk through this code in github.

Connecting to the Lambda Function

To connect the frontend to a Lambda function (the backend) you must provide its **Amazon Resource Name (ARN)**, which is a unique identifier that represents our Lambda function.

The ARN for our Lambda function is:

arn:aws:lambda:us-east-1:872059544991:function:practice

We will be using this ARN to connect our skill's frontend to our Lambda function in the next exercise.

2.6 Connect Lambda Function II

Let's connect the frontend to a Lambda function (the backend) using its Amazon Resource Name (ARN).

1. Copy this ARN:
arn:aws:lambda:us-east-1:872059544991:function:practice
2. Back on the **Build** tab for our skill on developer.amazon.com click on the **Endpoint** section on the left side of the page.
3. Choose AWS Lambda ARN as the **Service Endpoint Type**.
4. Paste the ARN in the **Default Region** text-box as shown to the right.
5. Leave other options at their default state, and click on **Save Endpoints**.

We are now ready to test our skill.

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2.7 Testing with Echosim.io

There are a few ways to test our skill now. The first one is the Amazon Echo Simulator – Echosim.io, a browser-based interface to Alexa.

Using Echosim.io

1. Log in with your Amazon account. (Be sure to login using the same Amazon account you used to create the skill at developer.amazon.com)
2. Click and hold the microphone button (or hold down the space bar on your keyboard to activate the microphone), and say "Alexa (Wake word), ask Career guide (intent name) hello".
3. When you let go of the button, the simulator will process your command just like an Alexa device and will respond back with the greeting message we programmed our Lambda function with. Remember the output speech?
4. Now instruct the simulator, "Alexa, ask career guide hello".
Congratulations! You've just created and tested your very own skill.

As you will see, Echosim.io is a great way to test your skills while they're in development. One thing to note, however, is that while Echosim.io allows you to interact with Alexa, it is not a substitute for Alexa-enabled devices, like the Amazon Echo. For example, Echosim.io does not stream music or support far-field voice recognition.

Troubleshooting

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

1. Try opening Echosim.io in a new tab by clicking [here](#)
2. Did you copy the ARN we provided correctly into the Amazon Developer Portal?
3. Are you calling the right invocation name?
4. Are you saying launch, start, or open?
5. Are you sure you have no other skills in your accounts with the same invocation name?

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Testing on an Alexa Device

If you have an Alexa device that was setup using the same Amazon account as the one you used to create your skill on developer.amazon.com, your skill is now also available on your device.

On an Amazon Echo, for example, just say - "Alexa, ask career guide explain for in what can I do after tenth. You can also try, "Alexa, ask career guide hello".

2.8 Test Simulator

Now that we have tested our skill and got a response back from Alexa, let's see what actually happened.

Go ahead and type, hello in the text box to the right, and then select **Ask career guide hello**.

2.8.1 How it works (Working)

1. When we said hello, our speech audio was sent to Alexa in the cloud.
2. Alexa used **Automatic Speech Recognition (ASR)** and **Natural Language Understanding (NLU)** technologies to parse our request and figured out that we want to talk to the "career guide" skill.
3. It then sent a request (in the form of a JSON object), as shown in the Lambda Request and Lambda Response boxes to the right. The requests include the intent (in red) to our Lambda function. In our case, the JSON request included the "Welcome".
4. Our Lambda function received the request and responded to Alexa with another JSON object, which included the output speech in text format.

Alexa converted this output speech from text to speech and returned the audio to the device where it is played back.

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2.8.2 Lambda Request

```
{  
  
  "version": "1.0",  
  
    "session": {  
  
      "new": true,  
  
      "sessionId": "amzn1.echo-api.session.6949068b-379b-4861-b43c-  
a139d5bd467d",  
  
      "application": {  
  
        "applicationId": "amzn1.ask.skill.c73ce060-21a1-  
4b41-b028-ed6d3c2ff2cb"  
  
      },  
  
      "user": {  
  
        "userId":  
"amzn1.ask.account.AEUX2P53NPTCABC7OW3IY6HEFCU7QG6B2VZJ2JFHED62V  
WEL6RDAIJS5WL3MPOS6FH3Q6HXIFMEJSC7HCRNDT4ZJDOMEQ2PDOVGJFL  
NLEAX6JOOKGCANNIAKJTONT64YHBK7JXZBWJ3J2IRDDO4UY7HNLN7LQXQ  
F6TASUFAH6YPQWRSHUSY5VUHBABUXYIYHKGOUBWFI2SGBAOI"  
  
      }  
  
    },  
  
    "context": {  
  
      "System": {  
  
        "application": {
```

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```
"applicationId": "amzn1.ask.skill.c73ce060-21a1-4b41-b028-ed6d3c2ff2cb"

},

"user": {

  "userId":

"amzn1.ask.account.AEUX2P53NPTCABC7OW3IY6HEFCU7QG6B2VZJ2JFHED62V
WEL6RDAIJS5WL3MPOS6FH3Q6HXIFMEJSC7HCRNDT4ZJDOMEQ2PDOVGJFL
NLEAX6JOOKGCANNIAKJTONT64YHBK7JXZBWJ3J2IRDDO4UY7HNLN7LQXQ
F6TASUFAH6YPQWRSHUSY5VUHBABUXYIYHKGOUBWFI2SGBAOI"

},

"device": {

  "deviceId":

"amzn1.ask.device.AE2WNI63FYFSNKT5CSDPB4TIZ4R7YL323NMU2XSEY2VA2P
JIX4FBMH6VYKKE26WXJFKZULPDLPOFZMDC2B3EEXNOPRFJBEJQKFC6YVS
2JROATAFLSDIGE2KVSXWTTAB3GRNA3QOVCQFLA5TMQ4RRKSICLGRSTTY
ES3TVAF4WCG5QNO7XXUJBK",

  "supportedInterfaces": {}

},

"apiEndpoint": "https://api.amazonalexa.com",

"apiAccessToken":

"eyJ0eXAiOiJKV1QiLCJhbGciOiJSUzI1NiIsImtpZCI6IjEifQ.eyJhdWQiOiJodHRwczov
L2FwaS5hbWF6b25hbGV4YS5jb20iLCJpc3MiOiJBbGV4YVNRaWxsS2l0Iiwic3ViIjoj
YW16bJEUyXNlLnNraWxsLmM3M2NlMDYwLTlxYTEtNGI0MS1iMDI4LWVhNmQ
zYzJmZjJjYiIsImV4cCI6MTU1Mzk0MTEyMiwiawWF0IjoxNTUzOTQwODIyLCJuYm
YiOiE1NTM5NDA4MjIsInByaXZhdGVDbGFpbXMiOnsiY29uc2VudFRva2VuIjpudW
xsLCJkZXZpY2VJZCI6ImFtem4xLmFzay5kZXZpY2UuQUUyV05JNjNGWUZTTktU
```

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NUNTRFBCNFRJWjRSN1IMMzIzTk1VMlhTRVkyVKEyUEpJWDRGQk1INlZZS0tF
MjZXWEpGS1pVTFBETFBPRlpNREMyQjNFRVhOT1BSRkpCRUpRS0ZDNlIWUzJ
KUk9BVEFGTFNESUdFMktWU1hXVFRBQjNHUk5BM1FPVknRRkxBNVRNUTRS
UktTSUNMR1JTVFRZRVmzVFZBRjRXQ0c1UU5PN1hYVUpCSyIsInVzZXJJZCI6I
mFtem4xLmFzay5hY2NvdW50LkFFVvgyUDUzTIBUQ0FCQzdPVzNJWTZIRUZDV
TdRRzZCMIzaSjJKRkhFRDYyVldFTDZSREFJSIM1V0wzTVBPUzZGSDNRNkhYS
UZNRUptQzdIQ1JORFQ0WkpET01FUTJQRE9WR0pGTE5MRUFYNkpPT0tHQ0FO
TkIBS0pUT05UNjRZSEJLN0pYWkXJSjNKMklSRERPnFVZN0hOTE43TFFYUUY2
VEFTVUZBSDZZUFFXUINIVVNZNvZVSEJBQIVYWUIZSEtHT1VCV0ZJMINHQk
FPSSJ9fQ.YD894S05KW8BjrhBeTpsBCwEIq18tW4osZ_jjSD6-
EILqgMwCp3nMsHFVWcEaaXY2P3mjR97m7JV0yXsxrfNTGek8nKmO9uaM7UyUP1
GjTW3tSpGThkHAA2YB7pCCu4UxaiGBd2nWKYhhLWoKqoFJm_achAswFV5yoIsb
ECzWKTmbNNXdL7rO_iryDY_ON1-
L9AqY19_U9UaATAmsoOQ6ylOX9TObBLz5gfRuSK5GI99FfodopWNDfp_vP8YkzW
XVz8tQPlgM5ppH24-
kvbwyp7Bfv5WlkOcaqP8m6CEeApI9HBtbVjx4txXpSnPUouN42TKL3YAzSxqnhKc60
UNMA"

},

"Viewport": {

"experiences": [

{

"arcMinuteWidth": 246,

"arcMinuteHeight": 144,

"canRotate": false,

"canResize": false

}

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```
    ],  
  
    "shape": "RECTANGLE",  
  
    "pixelWidth": 1024,  
  
    "pixelHeight": 600,  
  
    "dpi": 160,  
  
    "currentPixelWidth": 1024,  
  
    "currentPixelHeight": 600,  
  
    "touch": [  
  
        "SINGLE"  
  
    ]  
  
    }  
  
    },  
  
    "request": {  
  
        "type": "IntentRequest",  
  
        "requestId": "amzn1.echo-api.request.9ede4715-6390-4806-b55f-  
731736a28264",  
  
        "timestamp": "2019-03-30T10:13:42Z",  
  
        "locale": "en-US",  
  
        "intent": {  
  
            "name": "hello",  
  
            "confirmationStatus": "NONE"
```

```
}
```

```
}
```

2.8.3 Lambda Response

```
{
```

```
  "body": {
```

```
    "version": "1.0",
```

```
    "response": {
```

```
      "outputSpeech": {
```

```
        "type": "PlainText",
```

```
        "text": "Hello..!welcome to career guide, your buddy is  
ready to clear all your doubts."
```

```
      },
```

```
      "card": {
```

```
        "type": "Simple",
```

```
        "title": "SessionSpeechlet- Career guide",
```

```
        "content": "SessionSpeechlet - Hello..!welcome to career  
guide, your buddy is ready to clear all your doubts."
```

```
      },
```

```
      "reprompt": {
```

```
        "outputSpeech": {
```

```
          "type": "PlainText",
```

```
          "text": "can you please repeat again"
```

```
    }  
  
    },  
  
    "shouldEndSession": false,  
  
    "type": "_DEFAULT_RESPONSE"  
  
    },  
  
    "sessionAttributes": {}  
  
    }  
  
}
```

2.9 Service Simulator II

As you continue to learn about Alexa Skills Development, being able to access the contents of a skill's requests and responses will help you troubleshoot bugs.

Amazon provides developers a way to test skills quickly by typing (instead of speaking) the commands through the **Service Simulator**, available on developer.amazon.com

a) Using the Service Simulator

1. Navigate to the **Test** tab of your skill.
2. Enable testing by clicking the toggle button.
3. Type tell code academy hello in the text box.
4. Hit **Enter** on your keyboard. You will see the JSON request that was sent to our Lambda function on the left, and the response from our Lambda function on the right.
5. Turn up the volume! You can also listen to the response when it is shown on screen.

b) Create Your Lambda Function.

3. INTRODUCTION TO AWS LAMBDA

3.1 Introduction

To recap what we learned in the last lesson, AWS Lambda is where our code lives. When a user asks Alexa to open our skill, it is routed to our AWS Lambda function. The AWS Lambda function provides the response back to the user depending on the behavior that was requested (e.g. an intent request).

In this course, you will create a Lambda function that you will connect to the interaction model you built in Learn Alexa: Building your First Skill.

We will also use this opportunity to customize the response back from Alexa to include your name, so Alexa responds:

"Hi there, welcome how can I help you".

3.2 Sign in or Sign up for AWS Account

If you already have an AWS account, sign into the AWS console at aws.amazon.com and skip to the **next exercise**.

Create an AWS Account (Free Tier)

If you do not have an AWS account, you will need to create one.

You will need a valid credit card to set up your account. (Note, the AWS Free Tier will suffice, however).

1. Visit AWS Amazon and then choose **Create an AWS Account**.
2. Follow the instructions to create a new account. Do not worry about the IAM role, we will get to that in the next few exercises.
3. Part of the sign-up procedure involves receiving a phone call and entering a PIN using the phone keypad.
4. It can sometimes take a couple minutes for your new AWS account to go live. You will receive an e-mail when your account is active.

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Select AWS Lambda

1. Make sure you're logged in to the AWS console at aws.amazon.com.
2. Click **Services** at the top of the screen, and type "Lambda" in the search box. You can also find Lambda in the list of services. It is in the "Compute" section.
3. Select Lambda from the search results.

Set AWS Region

AWS Lambda only works with the Alexa Skills Kit in two regions: **US East (N. Virginia)** and **EU (Ireland)**, so make sure you choose one of those two regions in the top right corner.

Create Lambda Function

If you haven't created a Lambda function before, click the orange **Get Started** button near the center of your screen.

If you have created Lambda function before, click the **Create function** button. It should be near the top of your screen.

3.3 Lambda Function Name and Role

We are now ready to configure our Lambda function. We will start off by giving our function a **Career guide**. These values will only be visible to you, so you can name the function anything you want. It's good practice, however, to name your function something descriptive, so you remember what it does. Also, note that the function name must contain **only letters, numbers, hyphens, or underscores, and must not include spaces**.

1. **Function Name:** Project
2. **Set up Role:** We will now set the appropriate permissions for our Lambda function by choosing an IAM role. IAM stands for **Identity and Access Management**, and is an AWS Service that helps you securely control access to AWS resources.
 - i. By choosing a role, you are enabling your Lambda function to create logs for your function, which you can view using Amazon Cloud Watch
 - ii. If you've done this before, click on the **Existing role** drop-down and select "lambda_basic_execution".

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If you haven't done this before, follow the steps below to set up your first role for Lambda.

Setting up a new role for Lambda

1. Under the **Lambda function handler and role** section, choose **create a custom role** from the Role drop-down. This will launch a new tab in your browser, so make sure that pop-ups are enabled when you attempt this.
2. In the new tab that just opened, you don't need to make any changes. Simply click the **Allow** button in the bottom right corner.
3. This should close the new tab, and populate the next drop-down, **existing role**, with your new role — **lambda_basic_execution**.
4. You can skip all of the advanced settings, and click the **Next** button to move to the **Review** page.

3.4 Lambda Function Code

The **index.js** file on the right contains the code from the Build Your First Skill course. We will use this code to create our own function, but before we do that, let's make it a bit more fun. Let's edit the greetings that Alexa responds with when we say:

Alexa, ask career guide hello Alexa, ask career guide what I can do after tenth.

3.5 Write the Code

We are now ready to paste our code into the AWS **Lambda function code** section.

Instructions

1. **Copy** the code in **lambda_function.py**, to the right.
2. **Delete** the contents of the **Lambda function code** section in your Lambda function on AWS.
3. **Write** the code into the **Lambda function code** text box in **lambda handler** function.

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3.6 Triggers and Review Lambda Function

We would like this Lambda function to be triggered when our users ask Alexa to start our skill. To set the trigger:

1. Click on the **Triggers** tab
2. Click on + **Add Trigger**
3. Click on the dashed box and select **Alexa Skills Kit** from the list.
4. **NOTE:** If you don't see Alexa Skills Kit in the list, it is because you did not change the region. Make sure you choose **US East (N. Virginia)** or **EU (Ireland)**.

Once you have selected Alexa Skills Kit, click the **Next** button.

The Review screen is a summary of your choices. Make sure that you have **Alexa Skills Kit (ASK)** listed under the **Triggers** section, and have **lambda_basic_execution** set as the **Role**.

Then, click the **Create Function** button in the bottom right corner (you may need to scroll down to find it)

3.7 Copy the ARN

Once you hit the **Create Function** button, you will see a "Congratulations! Your Lambda function has been successfully created..." message.

We are now ready to connect our Lambda function to the interaction model we created in the Build Your First Skill course. You will need to open this skill in developer.amazon.com to complete the steps below.

In the introductory course, you learned that the way to connect the Voice User Interface to the Lambda function is through the Amazon Resource Name (ARN).

You may remember that we provided you with an ARN for a Lambda function we created for you. Now you can replace this number with your own ARN.

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Copy the Lambda ARN

The ARN value for your Lambda function should appear on the top right corner. It starts with lowercase "arn". Copy this entire string starting with the lowercase "arn".

Paste the new ARN

1. In the Alexa section on developer.amazon.com , find the skill we created in the first lesson, and click on **Edit**.
2. Click on the **Configuration** tab for the skill.
3. Make sure **AWS Lambda ARN** is selected as the **Service Endpoint Type**
4. **Delete** the existing ARN from the **Default** text box, and paste the ARN for your Lambda function.
5. Leave other options at their default state, and click **Save**.
6. Click **Next** to move to the "Test" tab.

4. INTERACTING WITH ALEXA

In this lesson, you will learn the fundamentals of generating dialogue using the Alexa SDK to create the following conversation.

User : career guide what is ITI courses

Once Alexa asks this, you can instruct Alexa to listen for a user's response. Regardless of the user's answer, Alexa will say:

Alexa: can you please repeat the question

If the user doesn't understand the initial question, or does not respond in a timely manner, Alexa can reprompt the user with a custom message.

While we are focusing on the question, response, and reprompt from Alexa, in Codec demy's slots lesson, you can learn to build a skill that customizes Alexa's response based on user input.

4.1 Make Alexa Speak

Let's walk through the Lambda function for an example after tenth skill. The **lambda_function.py** file to the right contains a Lambda function with empty handlers for the initial speaking portions of this skill.

We'll add Alexa responses for two scenarios:

- When the user launches the skill (triggers `LaunchRequest`)
- When a user responds to the question from Alexa (triggers `LanguageIntent`)

Set up Alexa Response

Alexa's response is generated using the Alexa SDK's `this.Response.speak ()` method. `This.Response` contains functions used to set up a response from Alexa, like this:

```
speech.speak(our return message)
```

Send Alexa Response

Once the response is set up, we use `this.Emit(': response Ready')` to send our response to the user's Alexa device.

Together, these two lines (`.speech ()` and `.emit(': response Ready')`) set up and send the response to the user's Alexa device. One thing to note, is that `.speech ()` generates a response and then instructs Alexa to close the session.

When creating a conversation, you usually don't want to close the session. Alexa SDK's `.listen ()` method allows us to instruct the device to keep the session open to allow a conversational dialogue.

4.2 Wait for a User to Respond

Like we said in the last exercise, `.speech()` generates a response and then ends the session, so we're never capturing the response from the user.

Currently, our skill is set up so that Alexa asks the user a question and the user may try to respond, but Alexa isn't listening because the session has closed. To keep the session open and get the user response we use the `session ()` method.

However, we want to continue the conversation and use `session` to make the skill wait for the user to trigger the `Language Intent`. We use `.listen ()` by chaining it to the end of the `.speak` response definition. As an example, if the handler for `Sample Intent` responded what is your name? And waited for a response, the code would look like:

```
'Sample Intent': function () {  
  this.response.speak ("What is your name?").Listen ();  
  this.Emit(': response Ready');  
},
```

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4.3 Reprompt

Currently, the Lambda function for our **Popular Language** skill responds with the welcome message, waits for the next user utterance and then sends the `Language`

`Intent` response. Although this is the behavior we desire, what happens if a user misses the question or Alexa was unable to understand the user's utterance?

When Alexa does not process a valid response to the `.listen ()` method, it times out and ends the session. Alexa provides a reprompt capability to improve these interactions — you can pass a string as an argument into the `.listen ()` method that Alexa uses to re-state a question to the user.

In the example above, a user's device will reprompt them with, "Sorry I didn't get that. What is Codec demy's most popular language?" if they don't respond in a timely manner:

User : career guide what can I do after tenth

Alexa : "what you choose after tenth is so important and should be decided wisely and it should be something which are interested in. so tell me any one subject in from your which you are interested"

User : I am interested in maths.

Alexa: if you are a student who is interested in maths you have many options one is to take MPC or MEC in intermediate and you also have another option to do polytechnic diploma after tenth.

User: what can I do after MPC?

Alexa: after intermediate of mpc group you can choose one among them. Engineering, architecture, merchant navy, commercial pilot, Bachelor of Science, national defense services, railway apprentice exam, business administration and management studies, commerce, arts and humanities.

4.4 Review

You have learned a number of methods in this lesson to control how Alexa interacts with a user.

- `this.response.speak ()` sets up a response to the user and ends the session.
- Chaining `.listen ()` to the `.speak ()` response keeps the session open and opens the microphone to listen for a user's response.
- You can provide an optional string as an argument to the `.listen ()` method, which will be used by Alexa to reprompt the user if no response was detected.
- You use `this. Emit (': response Ready')` to send your response to a user's Alexa device.

5.DIAGRAMS

5.1 Architecture

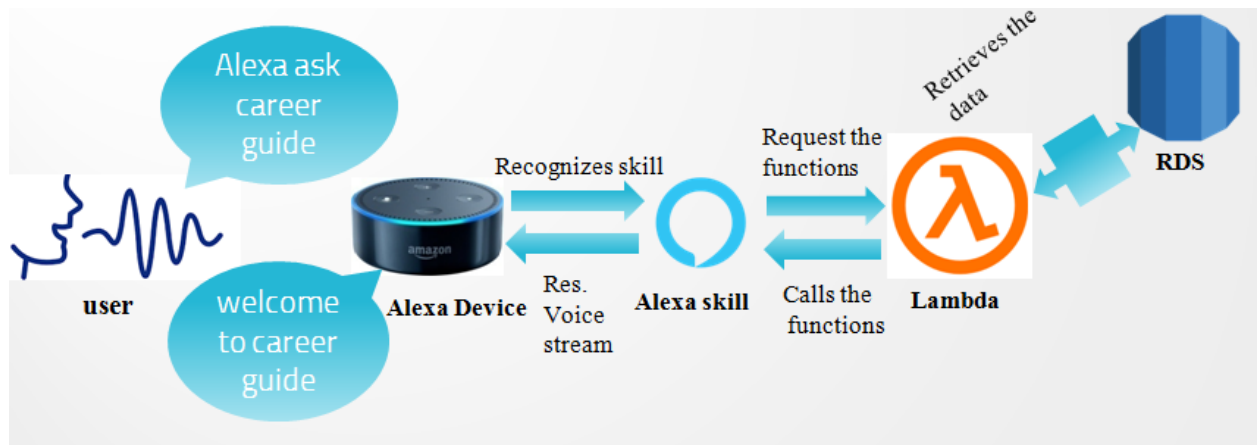


Fig 5.1 Architecture Diagram

5.2 Use Case Diagrams

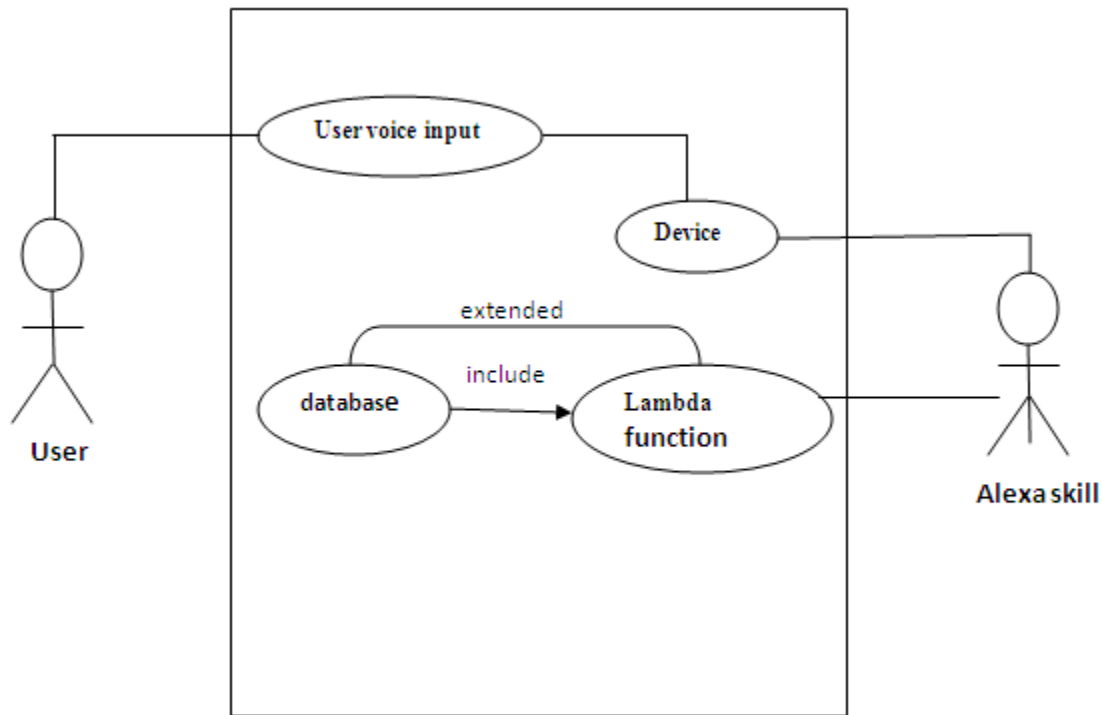


Fig 5.2(a) Overall Usecase Diagram

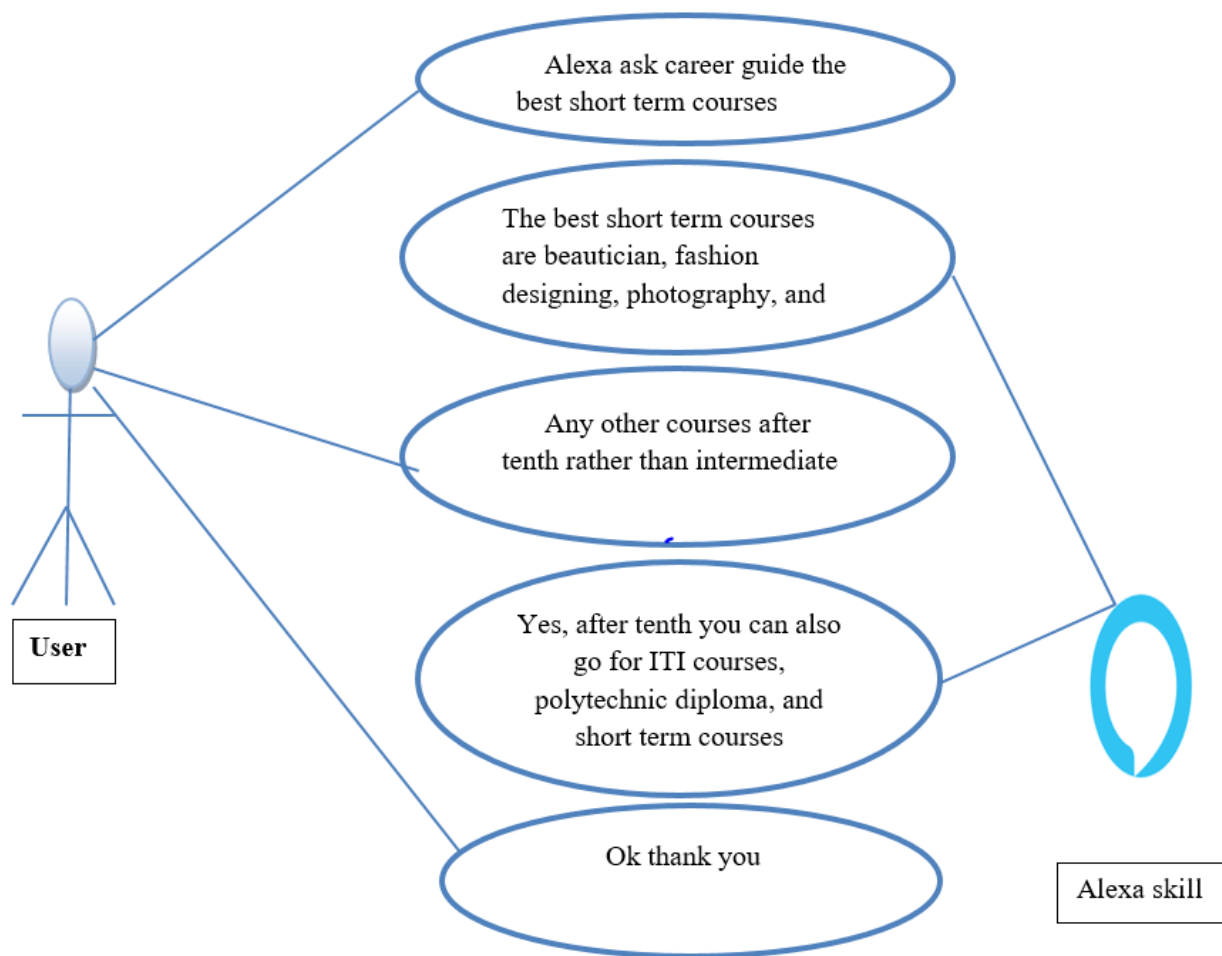


Fig 5.2(b) Use case for shortterm courses intent

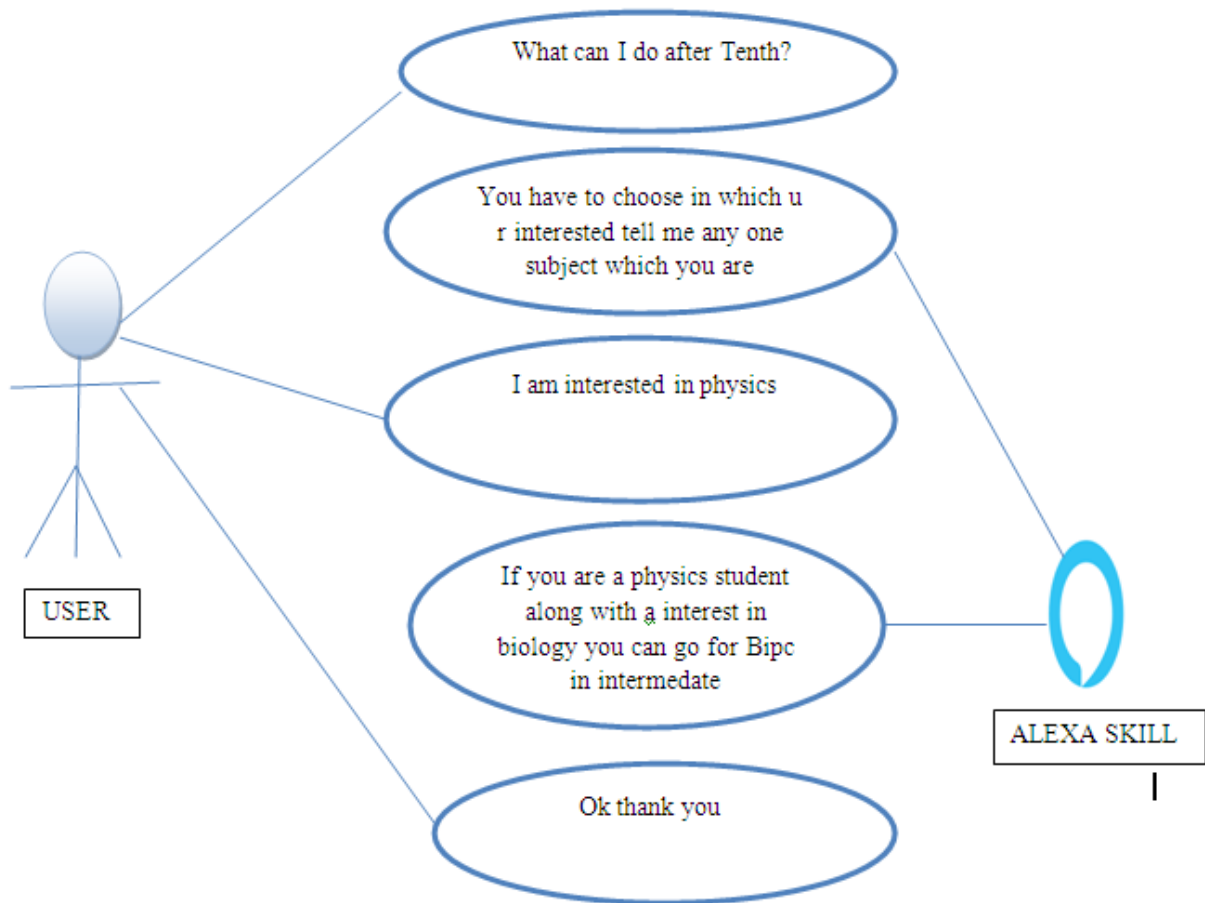


Fig 5.2 (c) Use case Diagram for Tenth Intent

5.3 Sequence Diagram

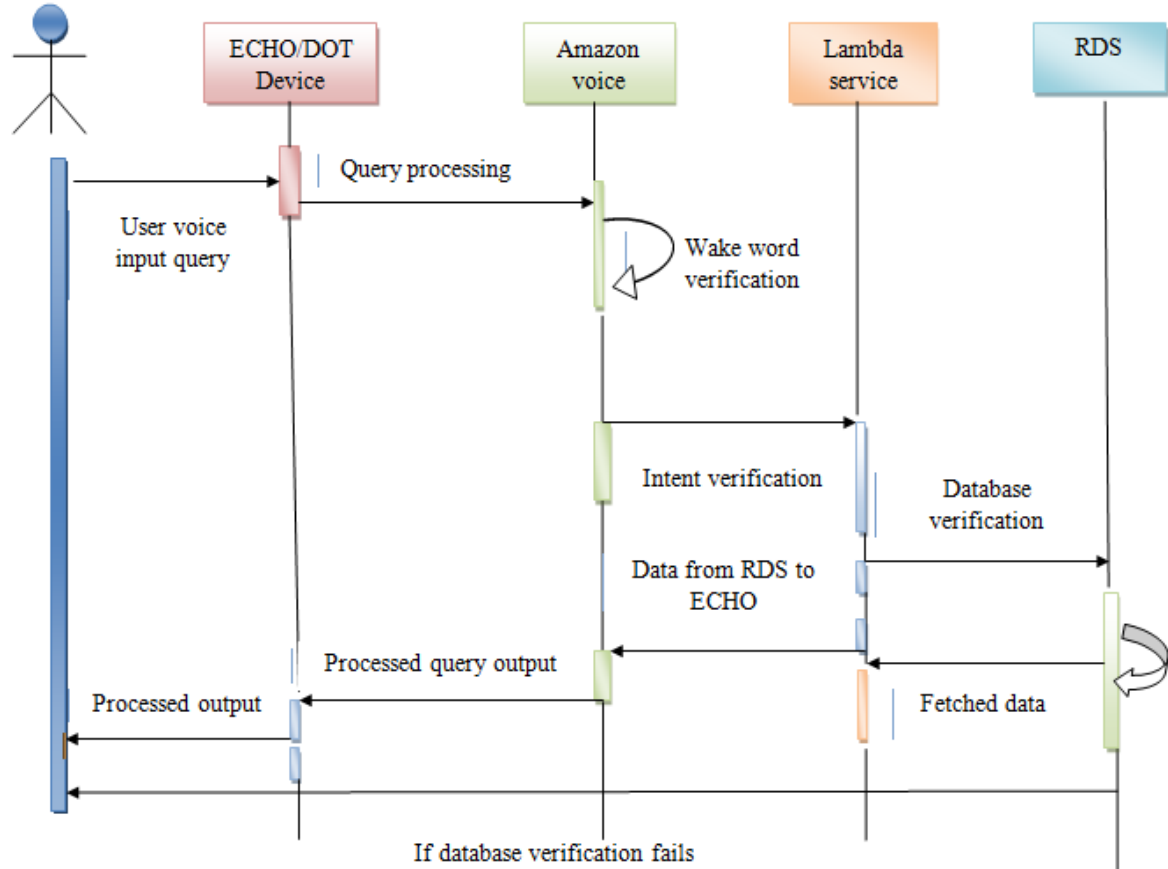


Fig:Sequence Diagram

6. BASIC REQUIREMENTS

As we are using free open source cloud computing platform **Amazon Web Services** (AWS) for Back end scripting and **Amazon Skill's Kit** (ASK), creation of the accounts and log in into them is the basic requirement.

For presenting our skill we can use **Echosim.io** from the Internet or we can test our skill using **Amazon Alexa** an open source Application which was available for all types of Mobile Devices.

Another and Most Common Way of utilizing is by buying an **Amazon Echo, Echo Dot** or **Amazon Alexa** available commonly in online selling stores.

7. Source Code

```
import json

import speech

import pymysql.cursors

def lambda_handler(event, context):

    try:

        intent_name = event["request"]["intent"]["name"]

        if intent_name=="tenth":

            try:

                value=event["request"]["intent"]["slots"]["subject"]["value"]

                if value=="maths":

                    return speech.speak("if you are a student who is
interested in maths you have many options one is to
take MPC or emeece in intermediate and you also have
another option to do polytechnic diploma after tenth")

                elif value=="school":

                    return speech.speak("what you choose after school is so
important and should be decided wisely and it should be something
which are interested in. so tell me any one subject which you are
```

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interested from the following . maths , science, biology, physics , chemistry , social , none")

elif value=="science":

return speech.speak("science field after tenth is of two types one is you go for medicine field by choosing By P C group in intermediate and the other you can take MPC and have many options there after")

elif value=="physics":

return speech.speak("if you are a physics student along with interest in biology then you can go for by P C group in intermediate and if you are a student of interest with physics along with maths you can go for MPC group in intermediate")

elif value=="biology":

return speech.speak("if you are student with interest in biology you have to choose by P C group in intermediate which later on you will have many other choices from there")

elif value=="chemistry":

return speech.speak("if you are a chemistry student along with interest in biology then you can go for BY P C group in intermediate and if you are a student of interest with physics along with maths you can go for MPC group in intermediate")

elif value=="social":

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return speech.speak('if you are student with interest in social then you can choose either M E C, C E C or H E C all these three groups in intermediate has a common economics subject')

elif value=="history":

return speech.speak('if you are student interested in history you can choose HEC in intermediate')

elif value=="none":

return speech.speak('if you dont have interest in any subject from tenth still you have many options to choose. you may go for ITI courses or any shortterm courses after tenth')

except:

return speech.speak('can you please repeat the question')

elif intent_name=="intermediate":

try:

value=event["request"]["intent"]["slots"]["groups"]["value"]

if value=="intermediate":

return speech.speak('intermediate is higher secondary education after tenth and if you want to choose a group from intermediate make sure you are totally ready for it because once you choose a stream here you need to go in the same stream after that

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can changing your stream is possible only with few groups not all so choose wisely. to know more about intermediate groups ask me")

elif value=="groups":

return speech.speak("intermediate has science, commerce and arts. science has M P C and by P C, while commerce has C E C and arts has M E C and H E C. choose your group according to your interest subject.")

elif value=="mpc":

return speech.speak("M P C Group is a part of Science stream. This group is also known as PCM Group. I would suggest this group to the students who are interested in math as well as science because this group has subjects like Physics, Chemistry and Mathematics along with English and one additional subject which may be sanskrit, hindi, urdu, telugu.")

elif value=="bipc":

return speech.speak("By P C Group is a part of Science stream. I would suggest this group to students who are interested in biology or having any plan of doing medicine and i have to say this is one of the toughest subject in intermediate and It has subjects like Biology, Physics and Chemistry. along with english and one additional subject which may be sanskrit, hindi, urdu, telugu.")

elif value=="mec":

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return speech.speak('M E C Group is the part of Arts stream and i suggest this group to the students interested in maths along with social. this group has many choices after that and its has subjects like maths,economics and commerce. along with english and one additional subject which may be sanskrit, hindi, urdu, telugu.')

elif value=="hec":

return speech.speak('H E C group is a part of Arts stream and for the students who has interest in history and it has subjects like history,economics,commerce. along with english and one additional subject which may be sanskrit, hindi, urdu, telugu.')

elif value=="cec":

return speech.speak('C E C group is the part of Arts stream and its stands for commerce,economics and civis. along with english and one additional subject which may be sanskrit, hindi, urdu, telugu.')

except:

out_msg="can you please repeat the question"

return speech.speak(out_msg)

elif intent_name=="polytechnic":

try:

value=event['request']['intent']['slots']['poly']['value']

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```
if value=="polytechnic diploma":
```

```
    return speech.speak("Polytechnic is a diploma course in  
engineering for three years and it has many branches and students  
choose them according to their interest. One can opt for a polytechnic  
course just after 10th and after after completing diploma a student  
has three options. student can directly search for a job with diploma  
qualification or they can go as lateral entry to Btech or go for any  
certified course." )
```

```
elif value=="polytechnic course":
```

```
value=event["request"]["intent"]["slots"]["poly"]["value"]
```

```
    conn = pymysql.connect("careerguide.cswrqizdlmne.us-  
east-  
1.rds.amazonaws.com","careerguide","careerguide123","careergui  
de")
```

```
    cur=conn.cursor()
```

```
    cur.execute("SELECT coursename FROM  
careerguide.course where degree = %s", value)
```

```
    data=cur.fetchall()
```

```
    out_msg = value + " are " + str(data[0]) + " " +  
str(data[1]) + " " + str(data[2]) + " " + str(data[3]) + " " +  
str(data[4]) + " " + str(data[5]) + " " + str(data[6])
```

```
    return speech.speak(out_msg)
```

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elif value=="polytechnic mechanical":

return speech.speak('Polytechnic Diploma in Mechanical Engineering provides broad-based and diverse engineering learning in the areas like thermodynamics, solid and fluid mechanics, combustion, instrumentation and control, material science, product and system design and manufacturing')

elif value=="polytechnic computer science":

return speech.speak('Diploma in Computer Programming is for students who wish to gain knowledge in the fields of programming and as well as building their career in the area of computers.')

elif value=="polytechnic civil":

return speech.speak('Diploma in Civil Engineering is a Diploma level course. Civil Engineering deals with the design, construction and maintenance of the physical and naturally built environment, including works like roads, bridges, canals, dams and buildings.')

elif value=="polytechnic eee":

return speech.speak('Diploma in electrical Engineering is a Diploma level course.electrical Engineering deals with electricity,electronics and electromagnetism:')

elif value=="polytechnic ece":

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return speech.speak('Diploma in electronics Engineering is a Diploma level course.electronics Engineering deals with electronic devices,circuits,commuication equipments like transmitter,reciever,integrated circuits:')

elif value=="polytechnic chemical":

return speech.speak('Diploma in chemical Engineering is a Diploma level course.chemical Engineering deals with chemical the design and maintainence of chemical plants and the development of the chemical process:')

elif value=="polytechnic agriculture":

return speech.speak('Diploma in agriculture Engineering is a Diploma level course.agriculture Engineering deals with the area of design construction and improvement of farming:')

except:

return speech.speak('except')

elif intent_name=="iticourse":

try:

value=event["request"]["intent"]["slots"]["iti"]["value"]

if value=="iti":

return speech.speak('ITI is industrial training institute are post secondary schools in india under directorate general of employment and training(DGET) for two years and ITI also has a

CAREER GUIDE

good scope, after ITI a student can do jobs on ITI or can go for diploma course as a lateral entry.")

elif value=="iti course":

conn = pymysql.connect("careerguide.cswrqizdlmne.us-east-1.rds.amazonaws.com","careerguide","careerguide123","careerguide")

cur=conn.cursor()

cur.execute("SELECT coursename FROM careerguide.course where degree = %s", value)

data=cur.fetchall()

out_msg = value + " are " + str(data[0]) + " " + str(data[1]) + " " + str(data[2]) + " " + str(data[3]) + " " + str(data[4]) + " " + str(data[5]) + " " + str(data[6]) + " " + str(data[7]) + " " + str(data[8]) + " " + str(data[9]) + " " + str(data[10])

return speech.speak(out_msg)

except:

return speech.speak("exception occurred3")

elif intent_name=="hello":

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```
        return speech.speak('Hello..!welcome to career guide, what  
you choose is what you become. so I'm gonna help you to give the  
information you need to know before you choose.')
```

```
    elif intent_name=="shortterm":
```

```
        try:
```

```
            value=event['request']['intent']['slots']['shortcourses']['value']
```

```
                if value=="dtp":
```

```
                    return speech.speak('DTP means desktop publishing it is  
the creation of documents using page layout skills on a personal  
computer desktop.')
```

```
                elif value=="small course":
```

```
                    conn = pymysql.connect('careerguide.cswrqizdlmne.us-  
east-  
1.rds.amazonaws.com','careerguide','careerguide123','careergui  
de')
```

```
                    cur=conn.cursor()
```

```
                    cur.execute("SELECT coursename FROM  
careerguide.course where degree =%s", value)
```

```
                    data=cur.fetchall()
```

```
                    out_msg = value + " are " + str(data[0]) + " " +  
str(data[1]) + " " + str(data[2]) + " " + str(data[3]) + " " +
```

CAREER GUIDE

```
str(data[4]) + " " + str(data[5]) + " " + str(data[6]) + " " +  
str(data[7]) + " " + str(data[8]) + " " + str(data[9])
```

```
return speech.speak(out_msg)
```

```
elif value=="pgcda":
```

```
    return speech.speak('PGDCA means Post Graduate  
Diploma In Computer Applications. It is a course in India for  
graduate students interested in Computer applications.')
```

```
elif value=="tally":
```

```
    return speech.speak('Tally is a computer software which  
is widely used for accounting purpose mostly by small and medium  
business.')
```

```
elif value=="graphics":
```

```
    return speech.speak('Computer graphics courses enable  
students to create 2D and 3D designs, use animation techniques and  
study advances in the field. These courses are most commonly  
completed through a full certificate or degree program.')
```

```
elif value=="web designing":
```

```
    return speech.speak('Typically it refers to the coding  
and programming side of web site production as opposed to the web  
design side')
```

```
elif value=="cyber security":
```


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return speech.speak("Cyber Security training and certification courses make you well versed with the processes and practices followed for protecting networks and data from unauthorised attacks.")

elif value=="beautician":

return speech.speak("Beautician is a short term course and field of study involving hair styling, skin care, makeup and nail care. you can choose after tenth")

elif value=="jewellery designing":

return speech.speak("Jewellery designing is a creative art that combines knowledge of conceptualising jewellery design and then manufacturing various jewellery products")

elif value=="photography":

return speech.speak("Photography field needs a High school diploma or equivalent, though we can also have a complete relevant postsecondary coursework or hold a degree")

elif value=="fashion designing":

return speech.speak("Fashion designers often have a bachelor's degree in fashion design and gain hands-on experience through internships and assistant positions. It is also important for fashion designers to have a portfolio.")

except:

CAREER GUIDE

```
return speech.speak("others exception")
```

except:

```
out_msg="out exception"
```

```
return speech.speak(out_msg)
```

8. TESTING

There are a few ways to test our skill now. The first one is the Amazon Echo Simulator – Echosim.io, a browser-based interface to Alexa.

Using Echosim.io

1. Log in with your Amazon account. (Be sure to login using the same Amazon account you used to create the skill at developer.amazon.com).
2. Click and hold the microphone button (or hold down the space bar on your keyboard to activate the microphone), and say "Alexa (Wake word), ask Career guide (intent name) hello".
3. When you let go of the button, the simulator will process your command just like an Alexa device and will respond back with the greeting message we programmed our Lambda function with. Remember the output speech?
4. Now instruct the simulator, "Alexa, ask career guide hello".

Congratulations! You've just created and tested your very own skill.

As you will see, Echosim.io is a great way to test your skills while they're in development. One thing to note, however, is that while Echosim.io allows you to interact with Alexa, it is not a substitute for Alexa-enabled devices, like the Amazon Echo. For example, Echosim.io does not stream music or support far-field voice recognition.

Troubleshooting

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

1. Try opening Echosim.io in a new tab by clicking [here](#) ^[29].
2. Did you copy the ARN we provided correctly into the Amazon Developer Portal?
3. Are you calling the right invocation name?
4. Are you saying launch, start, or open?
5. Are you sure you have no other skills in your accounts with the same invocation name?

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Testing on an Alexa Device

If you have an Alexa device that was setup using the same Amazon account as the one you used to create your skill on developer.amazon.com your skill is now also available on your device.

On an Amazon Echo, for example, just say –

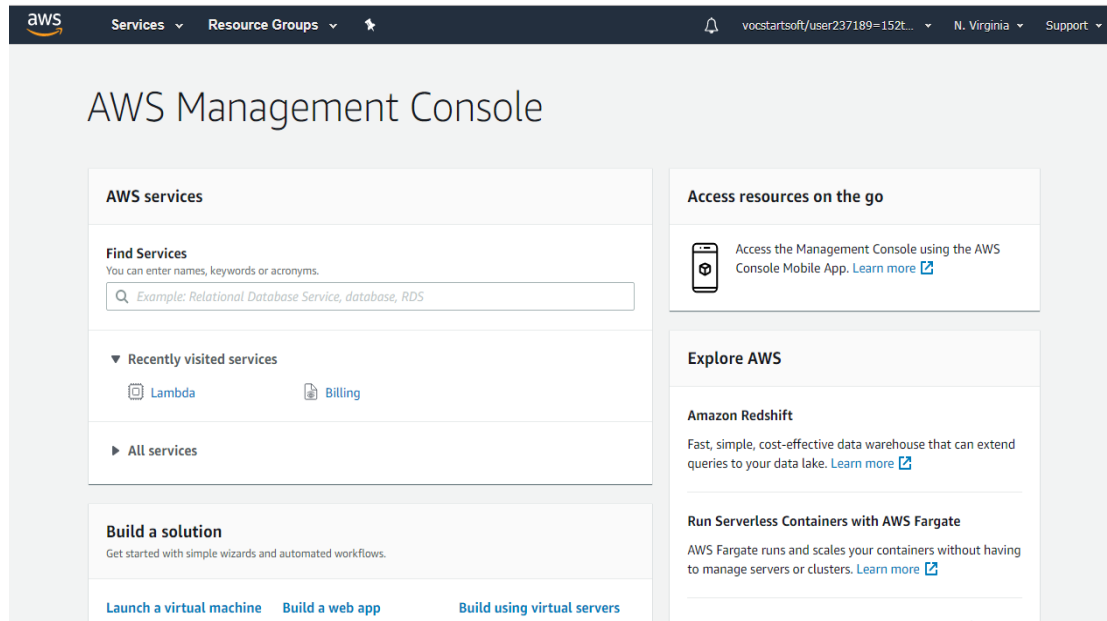
"Alexa, ask career guide what can I do after tenth".

You can also try, "Alexa, ask career guide hello".

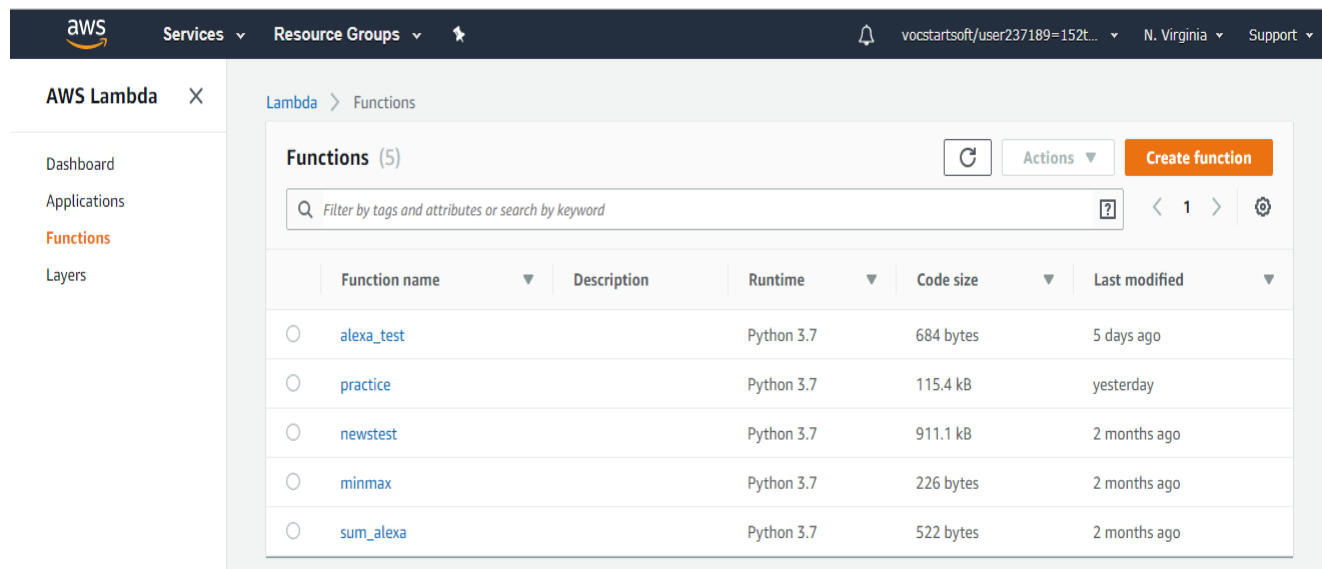
9. RESULTS

a) Login to aws.educate.com

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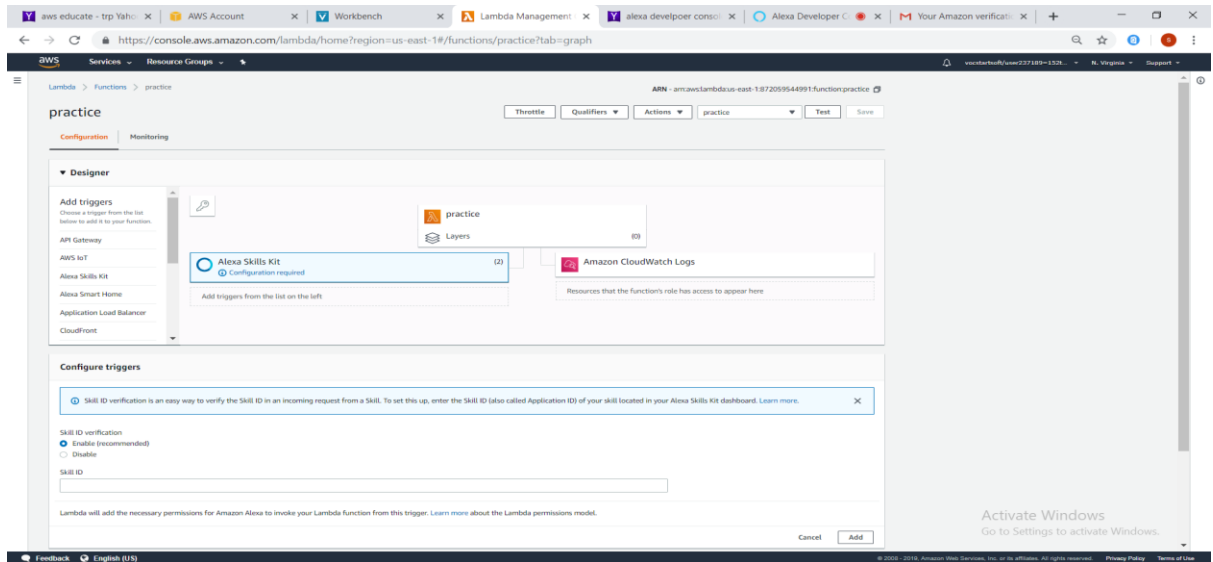


b) Select lambda among list of services

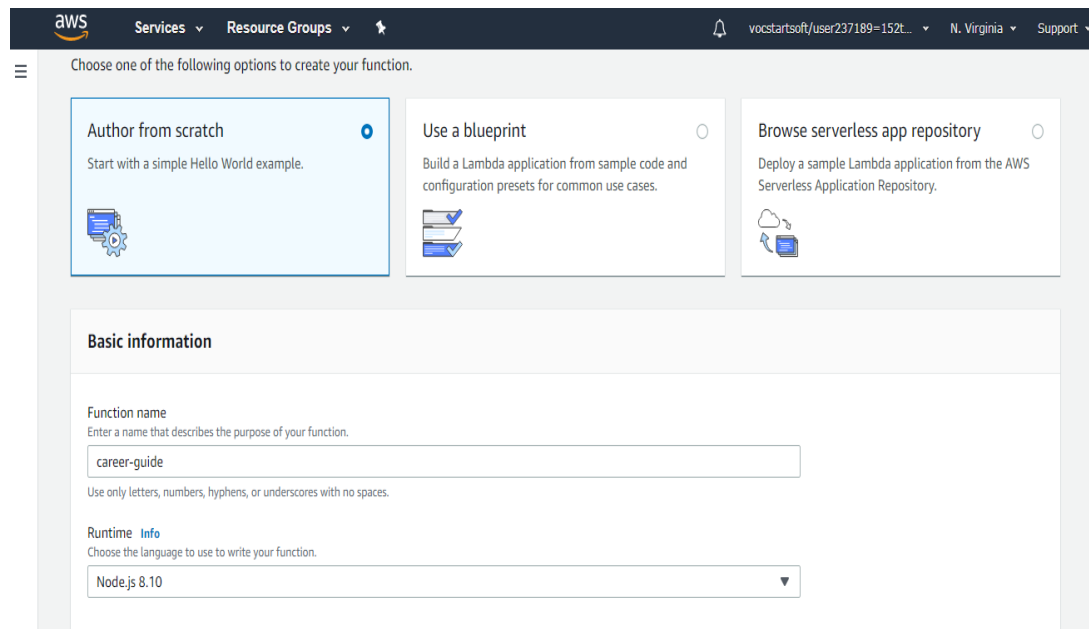


c) Click on create function

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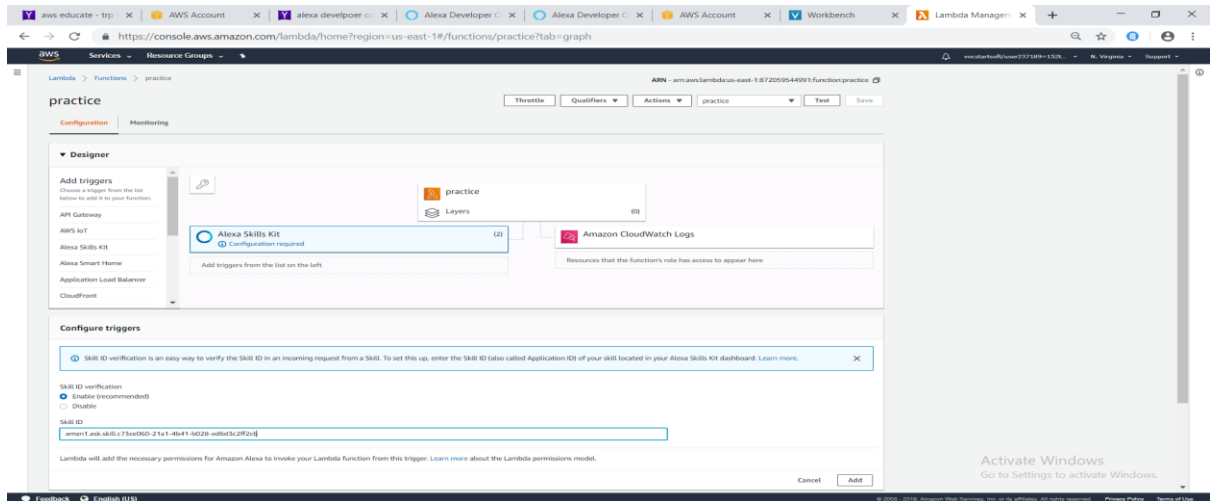


d) Select Author from scratch and fill the requirements



e) Paste the Skill id in Developer Console and paste here

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e) Copy the ARN Address and paste in Developer Console

Login to Developer Account



Sign in

Email (phone for mobile accounts)

Password

[Forgot your password?](#)

Sign in

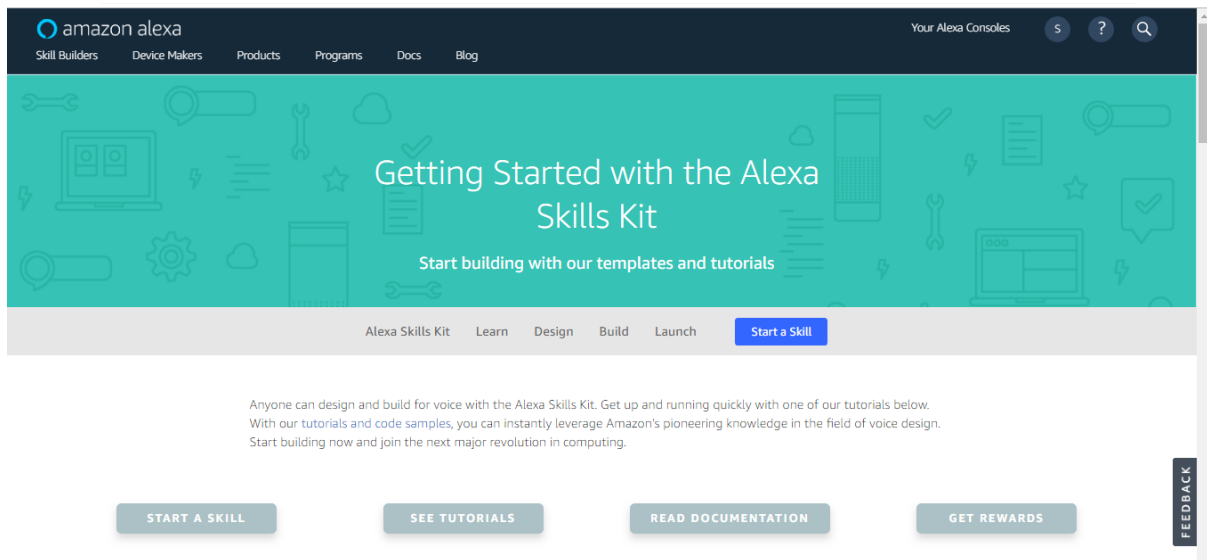
New to Amazon Developer?

Create your Amazon Developer account

[Conditions of Use](#) [Privacy Notice](#) [Help](#)

a) Sign in to Developer Account using User Credentials

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b) Select Get start Alexa

SkillsEarningsPayments

Alexa Skills

Create Skill

SKILL NAME	LANGUAGE	TYPE	MODIFIED	STATUS	ACTIONS
<div><div>?</div><div>career guide</div><div>View Skill ID</div></div>	English (US)	Custom	2019-03-30	<div><div></div>In Development</div>	Analytics Edit Delete
<div><div>?</div><div>practice</div><div>View Skill ID</div></div>	English (US)	Custom	2019-03-30	<div><div></div>In Development</div>	Analytics Edit Delete
<div><div>?</div><div>alexa_test</div><div>View Skill ID</div></div>	English (IN)	Custom	2019-03-27	<div><div></div>In Development</div>	Analytics Edit Delete
<div><div>?</div><div>testsession</div><div>View Skill ID</div></div>	English (US)	Custom	2019-02-19	<div><div></div>In Development</div>	Analytics Edit Delete
<div><div>?</div><div>news</div><div>View Skill ID</div></div>	English (IN)	Custom	2019-02-14	<div><div></div>In Development</div>	Analytics Edit Delete

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c) Select create skill

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aws educate - trp x AWS Account x alexa developer c x Alexa Developer c x Alexa Developer c x AWS Account x Workbench x Lambda Manager x + - □ x

https://developer.amazon.com/alexa/console/ask/create-new-skill

alexa developer console Feedback forum

Create a new skill

Cancel Create skill

Skill name

career guide 12/50 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.

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"

Music
Give users complete control of their music. This pre-built model lets users search, pause, skip, or shuffle in your skill.
"Alexa, play music by Lady Gaga"

Activate Windows
Go to Settings to activate Windows.

d) Fill the requirements

aws educate - trp x AWS Account x alexa developer c x Alexa Developer c x Alexa Developer c x AWS Account x Workbench x Lambda Manager x + - □ x

https://developer.amazon.com/alexa/console/ask

alexa developer console Feedback forum

Build a Monetized Skill Directly in the Developer Console, Earn Money

Enrich your skill with in-skill purchasing (ISP), available for skills in the US. Deliver premium experiences with consumables, one-time purchases, and subscriptions. You define your product offering and price, and we handle the voice-purchasing flow. You can choose to build a monetized skill directly in the developer console or use the Command-Line Interface (CLI).

Welcome to the Alexa Skills Kit Developer Console

Visit our [release notes](#) to learn about new feature and tools. Curious about what's new? [watch this video](#) or [read our documentation](#).

Skills Earnings Payments

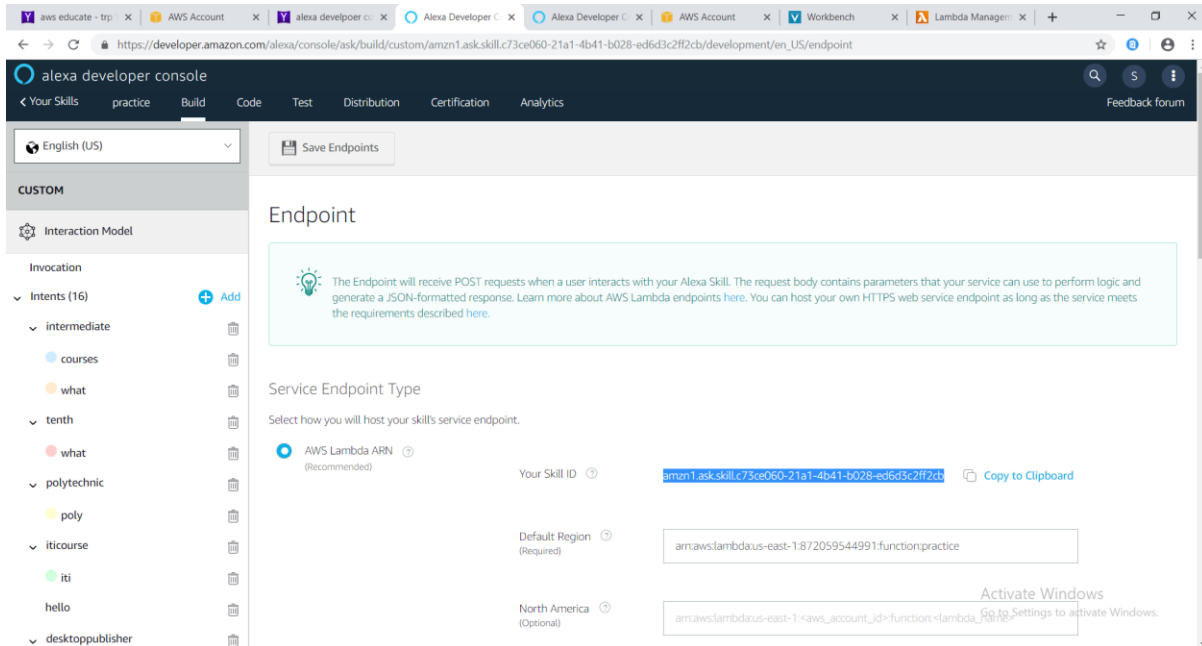
Alexa Skills

Create Skill

SKILL NAME	LANGUAGE	TYPE	MODIFIED	STATUS	ACTIONS
career guide View Skill ID	English (US)	Custom	2019-03-30	In Development	Analytics Edit Delete
career guide View Skill ID	English (US)	Custom	2019-03-30	In Development	Analytics Edit Delete
career guide View Skill ID	English (US)	Custom	2019-03-30	In Development	Analytics Edit Delete

Activate Windows
Go to Settings to activate Windows.

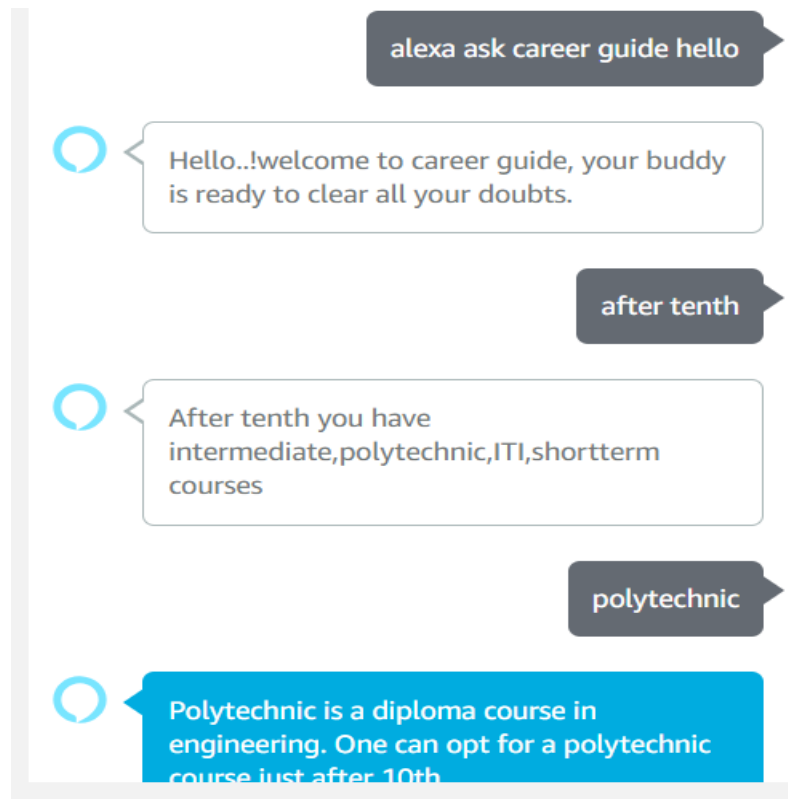
CAREER GUIDE



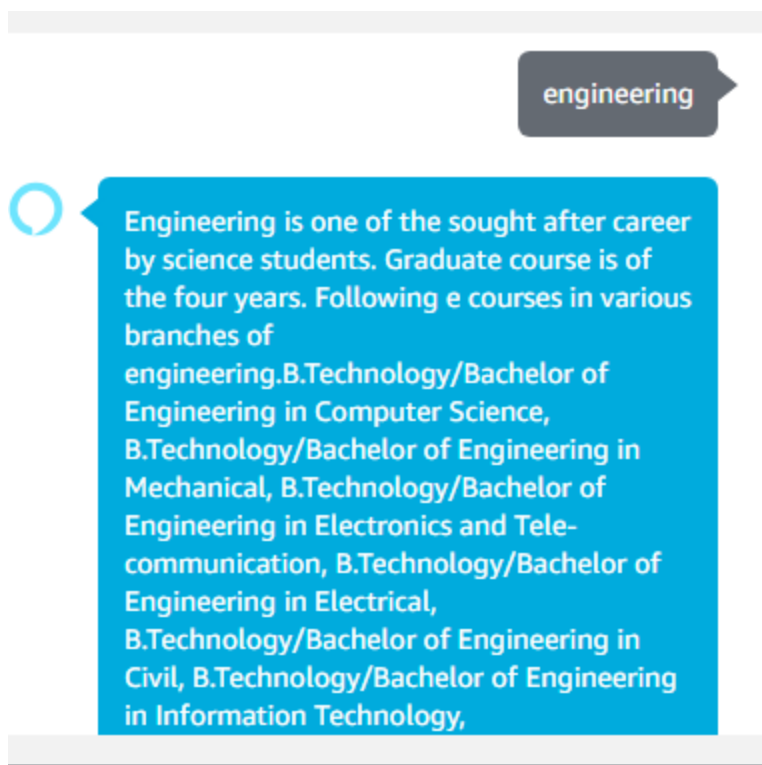
e) Connect the end point of developer and AWS

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Output Screens



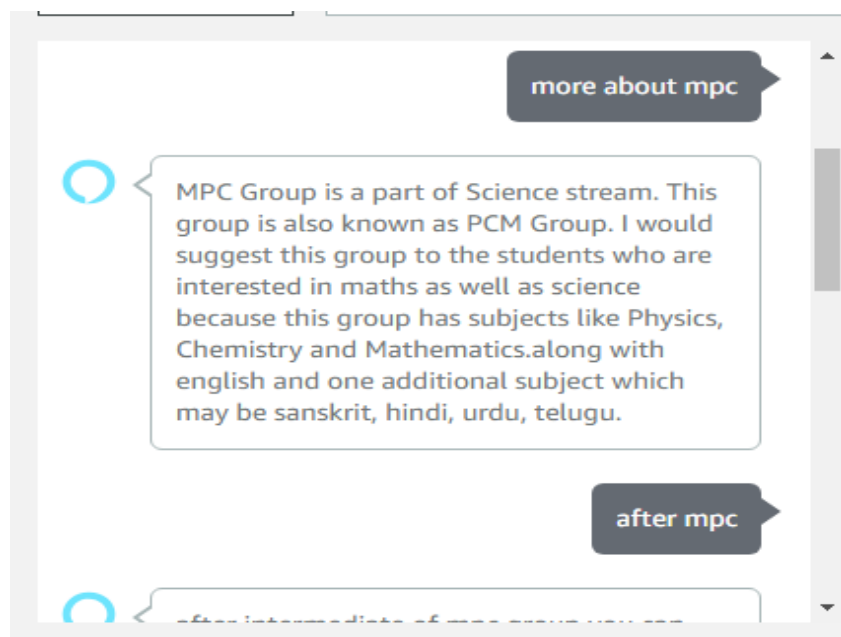
CAREER GUIDE



A screenshot of a digital interface for an engineering career guide. It features a dark grey header bar with the word "engineering" in white. Below this, a large blue speech bubble contains text about engineering careers. To the left of the bubble is a small blue circular icon with a white question mark. The background is a light grey gradient.

engineering

Engineering is one of the sought after career by science students. Graduate course is of the four years. Following e courses in various branches of engineering. B. Technology/ Bachelor of Engineering in Computer Science, B. Technology/ Bachelor of Engineering in Mechanical, B. Technology/ Bachelor of Engineering in Electronics and Telecommunication, B. Technology/ Bachelor of Engineering in Electrical, B. Technology/ Bachelor of Engineering in Civil, B. Technology/ Bachelor of Engineering in Information Technology,



A screenshot of a digital interface for an MPC Group career guide. It features a dark grey header bar with the text "more about mpc" in white. Below this, a large white speech bubble contains text about the MPC Group. To the left of the bubble is a small blue circular icon with a white question mark. At the bottom, there is a dark grey bar with the text "after mpc" in white. The background is a light grey gradient.

more about mpc

MPC Group is a part of Science stream. This group is also known as PCM Group. I would suggest this group to the students who are interested in maths as well as science because this group has subjects like Physics, Chemistry and Mathematics. along with english and one additional subject which may be sanskrit, hindi, urdu, telugu.

after mpc

10. CONCLUSION AND FUTURE SCOPE

In this project we demonstrated the way of writing a skill and implementing the Alexa skills and Amazon Web services .We conclude that this idea will be useful for the beginners who would like Learn the basics of two major and basic programming languages c and java through the trending technology of voice based assistance through Alexa.

Coming to the future, this can be implemented further by providing more educational tutorials usingAWS and Alexa for the betterment of rising educational standards in order to meet the need of advanced learning techniques.

11. REFERENCES

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- 2: <https://aws.amazon.com/ec2/>
- 3: <https://aws.amazon.com/ec2/instance-types/>
- 4: <https://aws.amazon.com/elasticloadbalancing/>
- 5: <https://aws.amazon.com/cloudfront/>
- 6: <https://aws.amazon.com/ebs/>
- 7: <https://aws.amazon.com/route53/>
- 8: <https://www.sumologic.com/aws/what-is-aws-cloudwatch/>
- 9: <https://www.sumologic.com/aws/lambda/>
- 10: <https://aws.amazon.com/elasticbeanstalk/>
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- 12: <https://aws.amazon.com/efs/>
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- 18: <https://docs.aws.amazon.com/vpc/latest/userguide/flow-logs.html>
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22: https://developer.amazon.com/alexa-skills-kit?&sc_channel=RD&sc_campaign=codeacademy&sc_detail=C1&sc_segment=codeacademydevs&sc_publisher=codeacademyc1&sc_country=US&sc_medium=RD_codeacademy_C1_codeacademydevs_codeacademyc1_US_RD_C1E5a&sc_trackingcode=RD_C1E5a

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[Fauth%2F2.0%2Fidentifier_select&openid.assoc_handle=amzn_dante_us&openid.mode=checkid_setup&marketPlaceId=ATVPDKIKX0DER&openid.claimed_id=http%3A%2F%2Fspecs.openid.net%2Fauth%2F2.0%2Fidentifier_select&openid.ns=http%3A%2F%2Fspecs.openid.net%2Fauth%2F2.0&#/skills?&sc_channel=RD&sc_campaign=codeacademy&sc_detail=C1&sc_segment=codeacademydevs&sc_publisher=codeacademyc1&sc_country=US&sc_medium=RD_codeacademy_C1_codeacademydevs_codeacademyc1_US_RD_C1E9&sc_trackingcode=RD_C1E9](https://www.amazon.com/ap/signin?openid.pape.preferred_auth_policies=Singlefactor&clientContext=130-6288430-2975038&openid.pape.max_auth_age=7200&openid.return_to=https%3A%2F%2Fdeveloper.amazon.com%2Falexa%2Fconsole%2Fask&openid.identity=http%3A%2F%2Fspecs.openid.net%2Fauth%2F2.0%2Fidentifier_select&openid.assoc_handle=amzn_dante_us&openid.mode=checkid_setup&marketPlaceId=ATVPDKIKX0DER&openid.claimed_id=http%3A%2F%2Fspecs.openid.net%2Fauth%2F2.0%2Fidentifier_select&openid.ns=http%3A%2F%2Fspecs.openid.net%2Fauth%2F2.0&#/skills?&sc_channel=RD&sc_campaign=codeacademy&sc_detail=C1&sc_segment=codeacademydevs&sc_publisher=codeacademyc1&sc_country=US&sc_medium=RD_codeacademy_C1_codeacademydevs_codeacademyc1_US_RD_C1E9&sc_trackingcode=RD_C1E9)

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