Developing Custom Skill by Using Amazon Alexa-Dream Stream

Saranya N[1], Pragatheesuwar K L[2], Santhiya R[3], Siva Prakash S[4]
[1] Assistant Professor, Dept of Computer Science and Engineering,
[2, 3, 4] Dept of Computer Science and Engineering,
[1, 2, 3, 4] Sri Shakthi Institute of Engineering and Technology, Coimbatore

Abstract- *One revolutionary idea can change the world smarter and by this way we introduce you THE ALEXA. It is An AI powered, voice based personal assistant product from Amazon Web Services which is already in the mission to take the people into the next step in Human-computer interaction. This VUI (Voice User Interface) will do more than the user want with the help of Custom Skill and Voice Service. Now, we have built a custom skill called Dream Stream. Which is interesting and simple project to conduct interviews and Q&A sessions in institutes for employees, professors, to analyse their technical knowledge without the need of any Human resource to judge the person about their level of knowledge. Therefore, we have created a cool stuff to pick the right talents out of box.*

Keywords- Node JS, JSON, MySQL and Lambda (Server less Architecture from AWS).

I. INTRODUCTION

Alexa is one of the smart speaker, which means that it is a kind of wireless speechmaker and voice comment tool with a unified artificial intelligence and also called virtual assistant that provides interactive movements and flexibility with the help of one or more hot words. The smart speaker can act as a smart device. By increase the usage on the far side of audio playback, so it makes a use of Bluetooth, Wi-Fi, and different wireless protocols.

Speech recognition or voice recognition is the concept using which a piece of hardware or software decodes human voice and either transforms it into stored data or uses the voice data to execute various commands without the need for any conventional input devices such the keyboard, mouse or even a single touch. The existing implementation for this concept are automatic speech recognition (ASR) programs that have to be trained with user's voice and speech patterns to act properly but even this can be improved if the ASR programs are pre-trained using data from the world wide web. Such a process would enable the use of speech recognition for endless possibilities.

II. REASON

In direct recruiter have to travel to the place and they can make the recruit process at one time so parallel recruiting process done in different places. In addition, using this Custom skill with Amazon Alexa is reduce the manpower and time.

There is no need to maintain the data because all data are stored in the cloud.

We humans always look to do things efficiently and Speech to text documentation allows up to three times faster document generation. This saves a lot of time effort for the secretarial staff who spend most of their time with documents.

III. ESSENTIALS

AWS account is need to host our custom skill set into AWS Alexa Market Place.

By using Amazon Skill Kit, it can allow developers to develop an own custom skill and make to publish skills for Amazon. In Alexa application, all of these skills are available, we just downloading those skills without paying the any cost. All codes are running in the cloud, nothing stored in device.


VUI (Voice User Interface) can used as an interaction model, which act as an interface for the end user.

The latest version of Amazon's smart device, Amazon Echo 2nd generation, tries to prove the companies argument that voice control is the future of OS. This new addition gives an upgrade in Alexa's skills as well a significant improvement in look and fell. The 2nd gen Echo is compact and solid so it's much stable is less fall over and start having weird dents. This new design also makes the Echo classier and makes it a good addition in the line of smart speakers by replacing the volume dial with the more conventional buttons and also the Echo has a mute button to avoid Alexa being turned on due to random speech. Digital documents were meant to be typed until now but no longer.

IV. WORKING

Working of an Alexa depends on two models, one is called Interaction model and other one is called Development or Service model.

Interaction model consists of three elements called Interaction name, Intents of roles, Utterances whereas, the Service model consists of two different way of hosting, one is by using Self Host (with the help of ASK documentation) and the another way is by getting into AWS (AWS Lambda function, Java Servlet on CC2, load balance through Beanstalk). Here the input is obviously voice; the voice is captured by Alexa AI PDA device, where it is integrated with the AWS cloud as Alexa skill service.
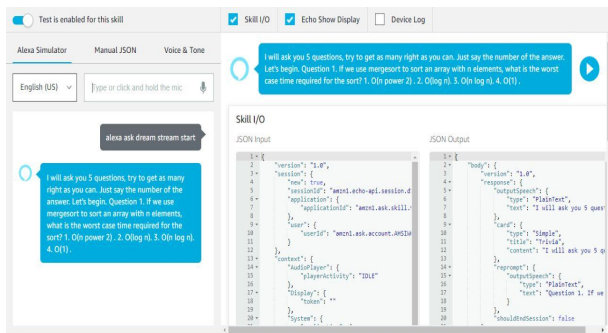
Then the request is analysed and splitter depends on the user intents and then processed on any of the methods mentioned above in service model.

Then the response is converted into natural language and delivered to the user. Here Natural Language Processing (NLP) used to convert the voice into text and ASR (Automated Speech Recognition) can be used for convert from text to speech.

The software inside the Echo has a self-learning mechanism that allows it to learn as it corrects mistakes. This

in turn greatly enhances performance and reduces the learning time and the resultant digital documentation is sharp and swift to achieve. Speech recognition is a great tool and can assist humans in almost all possible cases such as legal vocabulary for lowers. Speech recognition aided assistant devices are so easily customizable if data is available and the internet has more than enough data about everything. This is not only useful and efficient but also fun as who doesn't like to see whatever they speak transform into documents.

V. TECHNOLOGIES

There are some technologies used in this project like Lambda Node JS, MySQL, and JSON.

One of the function is used is called Lambda. It can be executed in the isolated environment. These can be providing the resources that can specified in the function. The function is configured like memory size.

AWS Lambda handles differently what happens when you call a Lambda function for the first time and consequence calls to the same Lambda function.

JSON (JavaScript Object Notation) is a lightweight format that is used for data interchanging. It is based on the subset of JavaScript Language like the way objects are built in JavaScript.

The main advantages in JSON is, it has a smaller message size, and easily consumed by JavaScript.
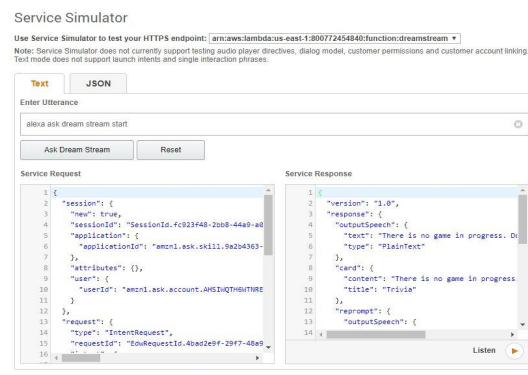
MySQL is the most popular open source database. It can provide the more performance, reliability, and ease-of-use. When we implement a database for Web-based application MySQL is very useful to store and maintaining the data.

Oracle MySQL Cloud Service delivers a secure, cost-effective, and enterprise-grade MySQL database.

VI. CONCLUSION

Therefore, in later days we used keypad to interact with the device or machine. Later, it changes to touch based user interface and which is ruling the most human-computer interaction as of right now. In future, it is going to be a voice-based user interaction and the future is here in the form of ALEXA. These kind of cloud and AI based smart device will rue the next decades of technological world and we have developed the future ready technology in collaboration with ALEXA called DREAM STREAM (Human less session for Questions and Answering analyse and enhance the knowledge of the specific person).

REFERENCES

[1] https://github.com/AlwaysBCoding/Episodes/tree/master/amazon-echo

[2] https://docs.aws.amazon.com/lambda/latest/dg/welcome.html

[3] https://developer.amazon.com/docs/ask-overviews/build-skills-with-the-alexa-skills-kit.html

[4] http://docs.aws.amazon.com/AWSJavaScriptSDK/latest/intex.html