EVALUATION OF INTERNSHIP REPORT

B.Tech: III Year

Department of Computer Science & Information Technology

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Year 2022-2023

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Certificate

Certified that training work entitled "*Alexa Training*" is a bonafied work carried out after sixth semester by "*Mihir Joshi*" in partial fulfillment for the award of the degree of Bachelor of Technology in Computer Science and Information Technology from "*Prof Garima Kumrawat* " Acropolis Institute of Technology and Research during the academic year 2022-23.

Name and Sign of Training Coordinator *Name & Sign of Internship Coordinator*

ACROPOLIS INSTITUTE OF TECHNOLOGY & RESEARCH, INDORE

Department of Computer Science & Information Technology

ACKNOWLEDGEMENT

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Introduction to Technology Undertaken

Amazon Alexa, also known simply as Alexa, is a virtual assistant technology largely based on a Polish speech synthesiser named Ivona, bought by Amazon in 2013. It was first used in the Amazon Echo smart speaker and the Echo Dot, Echo Studio and Amazon Tap speakers developed by Amazon Lab126. It is capable of voice interaction, music playback, making to-do lists, setting alarms, streaming podcasts, playing audiobooks, and providing weather, traffic, sports, and other real-time information, such as news. Alexa can also control several smart devices using itself as a home automation system. Users are able to extend the Alexa capabilities by installing "skills" (additional functionality developed by third-party vendors, in other settings more commonly called apps) such as weather programs and audio features. It uses automatic speech recognition, natural language processing, and other forms of weak AI to perform these tasks.

Most devices with Alexa allow users to activate the device using a wake-word (such as Alexa or Amazon); other devices (such as the Amazon mobile app on iOS or Android and Amazon Dash Wand) require the user to click a button to activate Alexa's listening mode, although, some phones also allow a user to say a command, such as "Alexa" or "Alexa wake".

As of November 2018, Amazon had more than 10,000 employees working on Alexa and related products. In January 2019, Amazon's devices team announced that they had sold over 100 million Alexa-enabled devices.

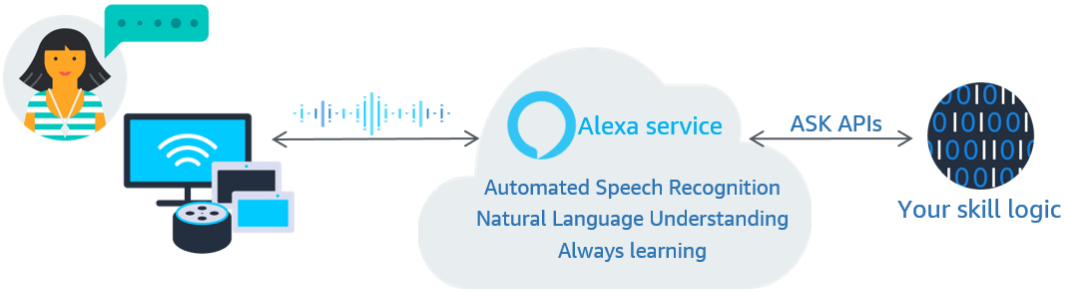
In September 2019, Amazon launched many new devices achieving many records while competing with the world's smart home industry. The new Echo Studio became the first smart speaker with 360 sound and Dolby sound. Other new devices included an Echo dot with a clock behind the fabric, a new third-generation Amazon Echo, Echo Show 8, a plug-in Echo device, Echo Flex, Alexa built-in wireless earphones, Echo buds, Alexa built-in spectacles, Echo frames, an Alexa built-in Ring, and Echo Loop.

The *Alexa Skills Kit (ASK)* is a software development framework that enables you to create content, called skills. Skills are like apps for Alexa. With an interactive voice interface, Alexa gives users a hands-free way to interact with your skill. Users can use their voice to perform everyday tasks like checking the news, listening to music, or playing a game. Users can also use their voice to control cloud-connected devices. For example, users can ask Alexa to turn on lights or change the thermostat. Skills are available on Alexa-enabled devices, such as Amazon Echo and Amazon Fire TV, and on Alexa-enabled devices built by other manufacturers.

A user accesses content in a skill by asking Alexa to invoke the skill. Alexa is always ready to invoke new skills. When a user says the wake word, "Alexa," and speaks to an Alexa-enabled device, the device streams the speech to the Alexa service in the cloud. Alexa recognizes the speech, determines what the user wants, and then sends a request to invoke the skill that can fulfill the request. The Alexa service handles the speech

recognition and natural language processing. Your skill runs as a service on a cloud platform. Alexa communicates with your skill by using a request-response mechanism over the HTTPS interface. When a user invokes an Alexa skill, your skill receives a POST request containing a JSON body. The request body contains the parameters necessary for your skill to understand the request, perform its logic, and then generate a response.

The following diagram shows the voice-activated processing flow to invoke a skill with the Alexa service.



The functionality you want to implement determines how your skill integrates with the Alexa service and what code you develop. Your skill idea might fit one of the Alexa pre-built voice interaction models, or your idea might require that you design your own custom voice interaction model. You can develop game skills, music skills, smart home skills, and many other skill types.

After you know what type of skill you want to develop, familiarize yourself with Alexa skill development terminology.

ASK includes APIs, tools, code samples, and technical documentation to create and manage skills throughout their lifecycle. These libraries, tools, and training materials can help you successfully develop and publish an Alexa skill.

Below diagram illustrate how our skill can be developed

Technology used

1. Natural language generation

Machines process and communicate in a different way than the human brain. Natural language generation is a trendy technology that converts structured data into the native language. The machines are programmed with algorithms to convert the data into a desirable format for the user. Natural language is a subset of artificial intelligence that helps content developers to automate content and deliver in the desired format. The content developers can use the automated content to promote on various social media platforms, and other media platforms to reach the targeted audience. Human intervention will significantly reduce as data will be converted into desired formats. The data can be visualized in the form of charts, graphs, etc.

2. Speech recognition

Speech recognition is another important subset of artificial intelligence that converts human speech into a useful and understandable format by computers. Speech recognition is a bridge between human and computer interactions. The technology recognizes and converts human speech in several languages. Siri of iPhone is a classic example of speech recognition.

3. Machine learning

Machine learning is a division of artificial intelligence which empowers machine to make sense from data sets without being actually programmed. Machine learning technique helps businesses to make informed decisions with data analytics performed using algorithms and statistical models. Enterprises are investing heavily in machine learning to reap the benefits of its application in diverse domains. Healthcare and the medical profession need machine learning techniques to analyze patient data for the prediction of diseases and effective treatment. The banking and financial sector needs machine learning for customer data analysis to identify and suggest investment options to customers and for risk and fraud prevention. Retailers utilize machine learning for predicting changing customer preferences, consumer behavior, by analyzing customer data.

Objectives

It is capable of voice interaction, music playback, making to-do lists, setting alarms, streaming podcasts, playing audiobooks, and providing weather, traffic, sports, and other real-time information, such as news. Alexa can also control several smart devices using itself as a home automation system.

Amazon Alexa Skills Kit Development training classes will help you learn the Alexa built-in capabilities, its various functions, Alexa development environment, understanding the design process, building and delivering the right responses, calling the Alexa API and more through real-world projects.

Skills are like apps for Alexa. With an interactive voice interface, Alexa gives users a hands-free way to interact with your skill. Users can use their voice to perform everyday tasks like checking the news, listening to music, or playing a game. Users can also use their voice to control cloud-connected devices.

Alexa is a voice-controlled virtual assistant. She can play audio, control your smart home, answer questions and engage your favorite services to keep you organized, informed, safe, connected and entertained. As a product of Amazon, she's also your personal shopper.

Project Undertaken

I have created an alexa sill on the topic cafe ordering system using alexa. In I have created the skill using voice flow website. The voice flow is conversational AI product teams use Voiceflow to design, test, and ship chat and voice assistants- together, faster, at scale.Voiceflow is the modern creative platform for teams that are conversation design oriented and product driven. Voiceflow unifies the design and prototyping workflow whilst making design-dev handoff, or launching live experiences, easy. We felt this problem in 2018, when building our own conversational apps, and set out to solve it with Voiceflow.

For creating café alexa skill using AI. The menu card of the café should be browed in the website using display field. It which you can display one image at a time. My alexa skill can also take multiple orders at a time and also calculate the total bill of the order placed.

It has the two choices at the starting that where you want to enjoy at the café of at the resort.

Then it will display the menu card accordingly of whatever you choose.

It will further give an notification to the chef and manager along with the biller that from which table the order is from and what is the order.

Also the feedback of our services will be also taken with the help of star rating.

In our skill we can also get the code in JavaScript language and python code also we can get the api key.

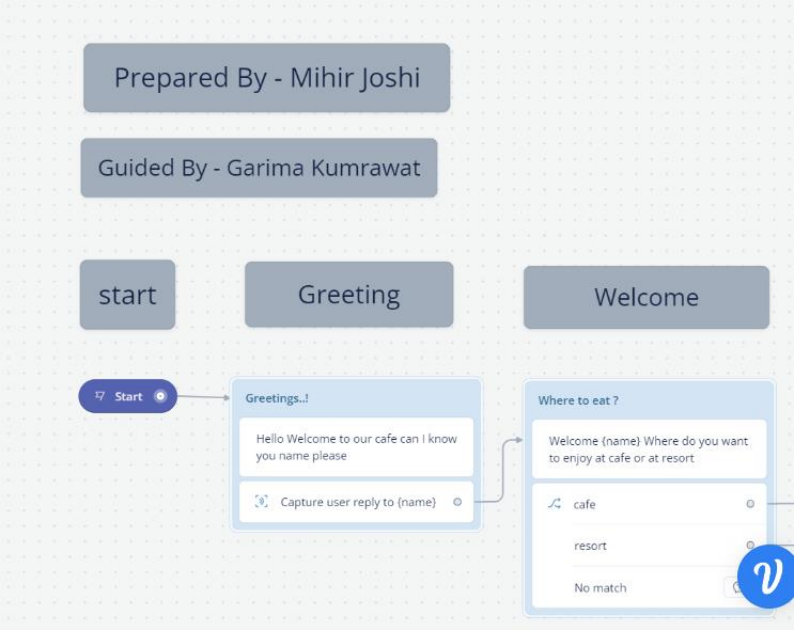
For accesing my alexa skill the link is

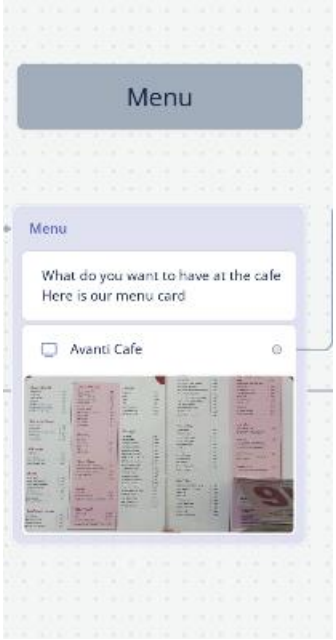
https://creator.voiceflow.com/prototype/62d4de84f108daf9bc3f54e5

How does it works:

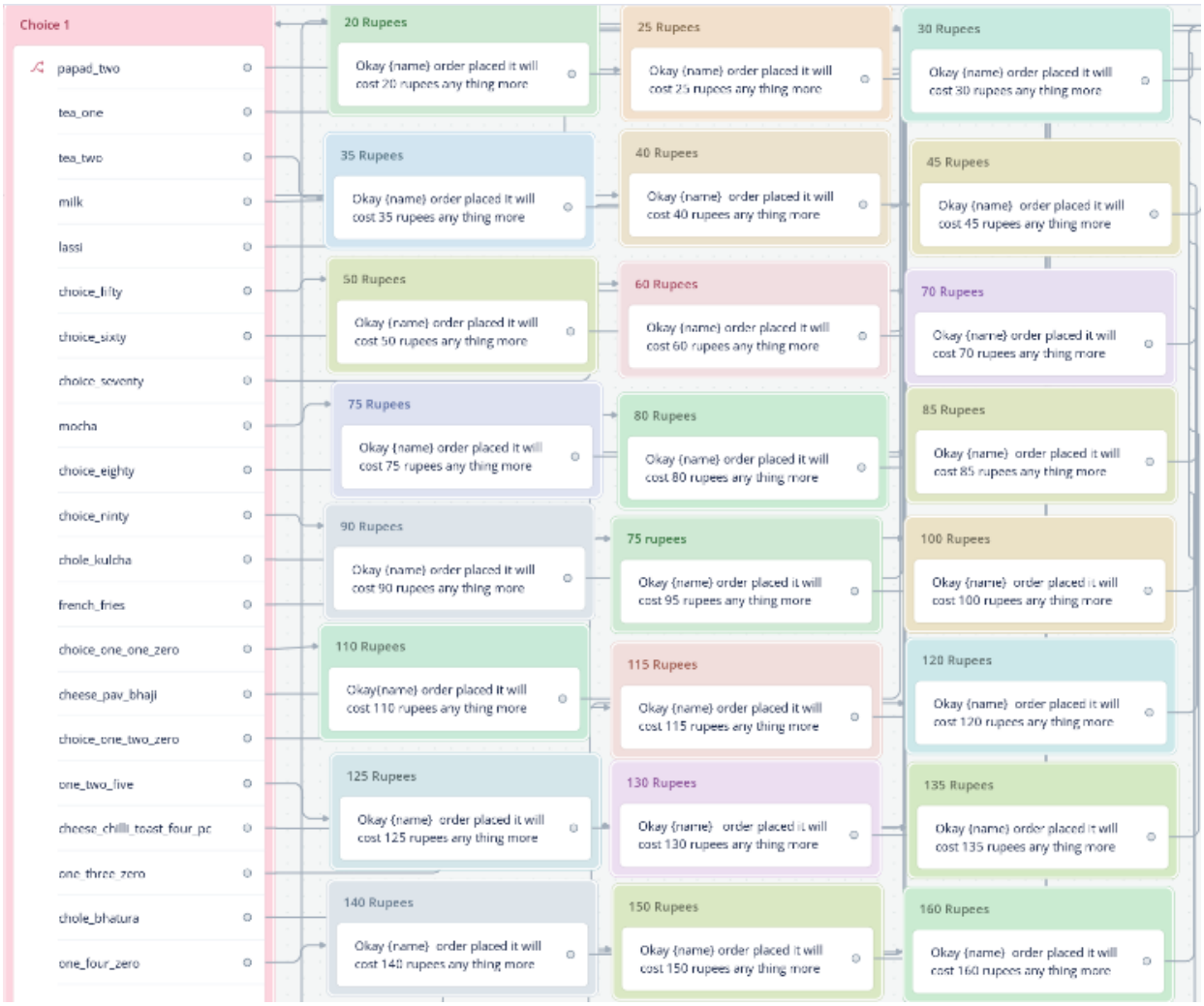
1. Firstly it will greet the costumer.
2. The it will take the name of the user.
3. Then the skill will ask where the user wants to enjoy.
4. The user will automatically directed the page where the menu of cafe/resort will be shown
5. At that point the user can order the things according to his/her interest.
6. The bill will be generated and the order is confirmed

Screenshots of Project and Certificates

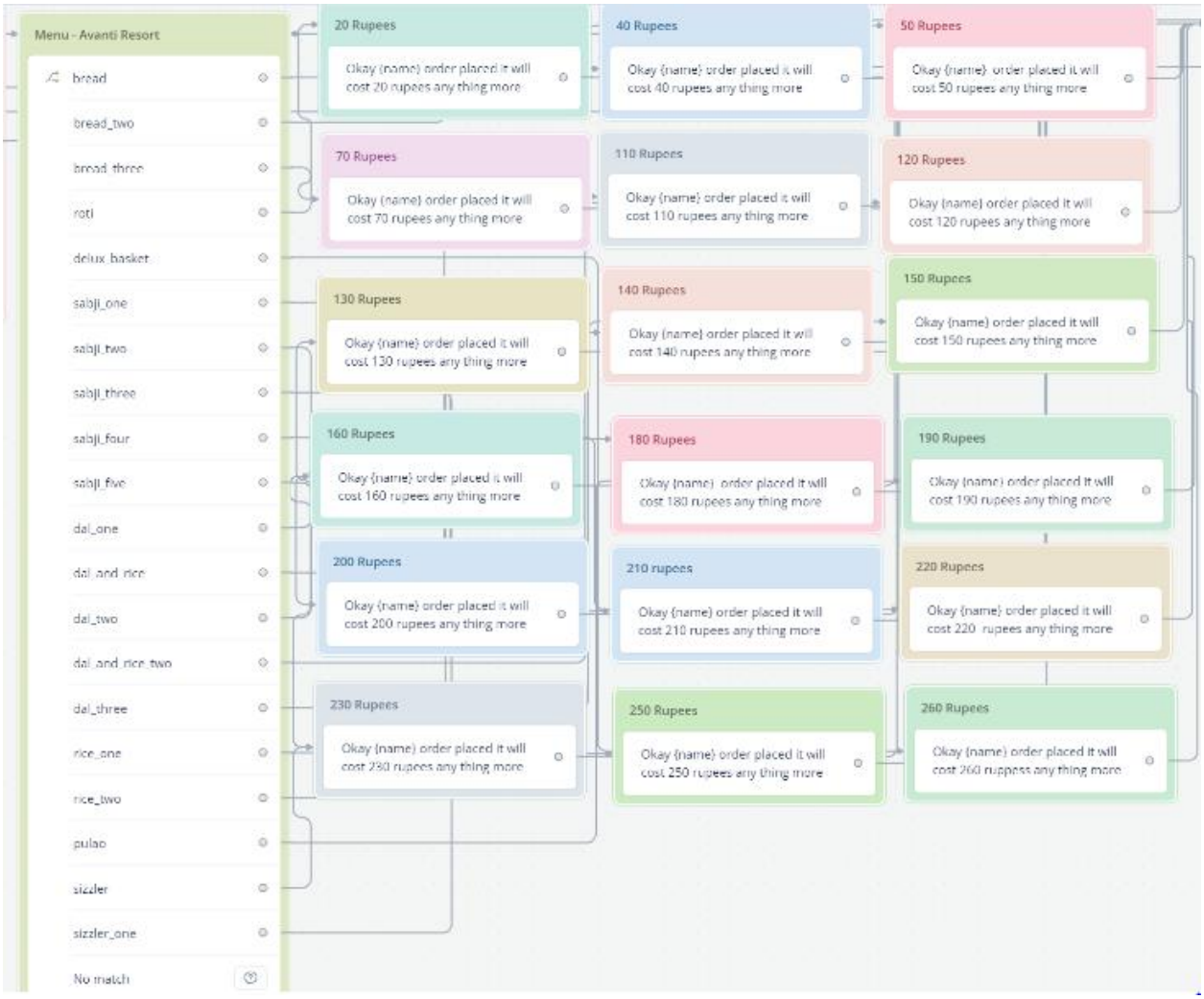




Cafe Ordering



Resort Ordering




Closing
Ratings / Review
Ending
Confirmation
Yes
No
No match
Thank You
Okay {name} thank you for visiting us.
New Block 57
Please rate us out of 5
Capture user reply
End
Skill ends in current state

Certificate

GitHub Link

https://github.com/mihir260602/EOI

Conclusion

The conclusion of report is that that the alexa is an artificial intelligence based device that is develop to make our work easy and faster.

Also the order can be placed done with the help of café skill management using AI and it is an automation of the ordering process that is done in café.

The alexa is just like Siri by iphone and assistant by google.

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