Cloud Based Student Information Chatbot Using AWS Lex

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Abstract- **This project cloud based Student information chatbot used by student who wants to get information for collage and personal information. This project is very useful because all queries solved by this chatbot. This project is give the information about student like name, address, result, fees, phone number etc. This project is also give the some college information like timing, faculties etc. Every student no need to go the college and get the information. This chatbot is like friendly conversation which you do in normal chat so every person get the information very easily. To make this project some AWS services we use like Amazon Lax, Dynamo DB, Athena, Lambda. In normal case student send the message to the admin and admin reply to the student. But in this case student don't send the message to the admin and whatever time it is student solve their question and doubts. Cloud based student information chatbot project is artificial algorithm which analyse the student queries. In now a days every person having no time to give the answer to the all question from the students because in our department having so many responsibilities so they not giving us time for solve our question so this project is very helpful of every student and also our management department. Our management department can spent time to grow our teaching culture. Using this project lots of benefits are there that's why we make this project.**

1) Introduction

Cloud based student information chatbot project- this project is artificial algorithm for analyse the student queries and reply to the student in form of message. In this system artificial intelligence to make the answer to give the user. If user is not valid so simply give the answer user is not valid if valid so give the appropriate answer. We can check the whether user is valid or not. Bot gives the answer from database to valid user and give the specific answer and expecting answer.

Chatbot system use the specific services to give the answer. There are many service we use in this system. We use the Amazon Lax to build the chatbot.

We have to manage all the messages. We have to understand first how think the user, What will be next question, what our bot giving the answer. So first of all before you make bot every queries of user you have to understand which type of queries occur in the user mind. Than next we have to understand how handle those queries. What is our next question to the user.

User just have to solve the query using chatting only. User send her/his query to the bot in form of chat. So bot(graphical interface understand the question and give the appropriate answer. Bots are created in such a way that they follow specific route for give the answer to the user.

In some cases bot is not understand the queries. Actually bots are failed to give answer. In this case to resolve the queries we use the active learning for bot. Active learning is algorithm for interactively handle the queries. If bot not understand the question so using this algorithm bot gives some option to ask the query. So bot can handle the situation.

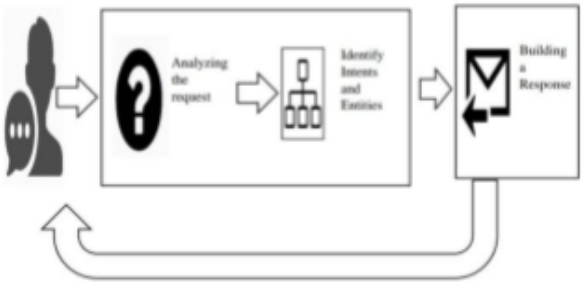
We can deploy the chatbot in various platform like facebook messanger, any messaging App, using skrach. So this various platform we can publish our bot. Also we made our new App.

1.1 **Components used:**

AMAZON Management Console:

- There is various services which is used in our project from AMAZON console 1)AMAZON Lex 2)AMAZON Athena 3)AWS Lambda 4)DynamoDB.
- 1) Amazon Lex: we have to create bot(chatbot) in the amazon lex .
- 2) Amazon Athena: make the query to send the lambda function.
- 3) Amazon Lambda: using lambda function we can validate the messages and also make the pattern of fulfilment we can create. Using lambda function we connect the database to bot.
- 4) DynamoDB: dynamodb is used for store the data. This service is basically database service.

2) Background



How to work the bot

In this bot first analyse the query which is ask by the user. After analysing request bot check the intent, entities and identity. After checking all tis bot give the answer in form of message.

3) Research the project

An extension has been made to the chat bot ViDi when the authors in queries proposed the whole redesign of the vidi chatbot by employing the benefits of a electronic database . They added extension and prerequisite algorithm to update ViDi into web-based chatbot. The authors used web programming languages like PHP,HTML and XHR to implement the coding of the chatbot addition to Asynchronous JavaScript +XML(AJAX). Again Malaysian is employed .The extension of ViDi designed in makes it available to users on the web through an internet browser.de

Introducing new matching models it represents true innovation in chatbot. the author proposed a replacement models that produces a replacement sentence from two existing sentences. The study proposes employing a Genetic Algorithm(GA) to create a replacement (IJACSA) international journal of Advance computing and Application ,The study proposes employing a Genetic Algorithm(GA) to create a replacement (IJACSA) international journal of Advance computing and Application, www.ijacsa.thesai.org counting on the sentences that are retrieved from an available database. The proposal is to presented so as to adapt the GA to a tongue structure.

The approach combines indexing and query matching methods with pattern matching and applies information Retrieval (IR) techniques to produce a new sentence from existing ones. In this study, the prevailing sentences became the initial population of the GA, then it swap and crossover operators were applied to supply the new sentence as a replacement generation of the GA. Experiment evaluation for the chatbot before and after applying the sentence combination approach were presented. The purpose was to improve the diversity of the Chatbot response. The two main contributions of the study are

i) Converting two sentences into one.

ii) Applying information retrieval techniques to Chatbot.

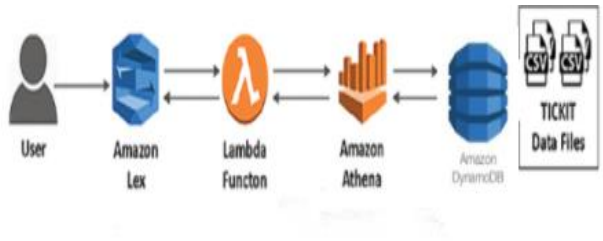
4) Methodology

Step 1: Online Enquiry

In first step we have to research the all college students. What type of query they have. When query occur and how to solve those query. So first of all we understand the all students then and then we can handle and make the chatbot. You can do two things over here. First you meet the student personally and collect the information like survey. Second in online

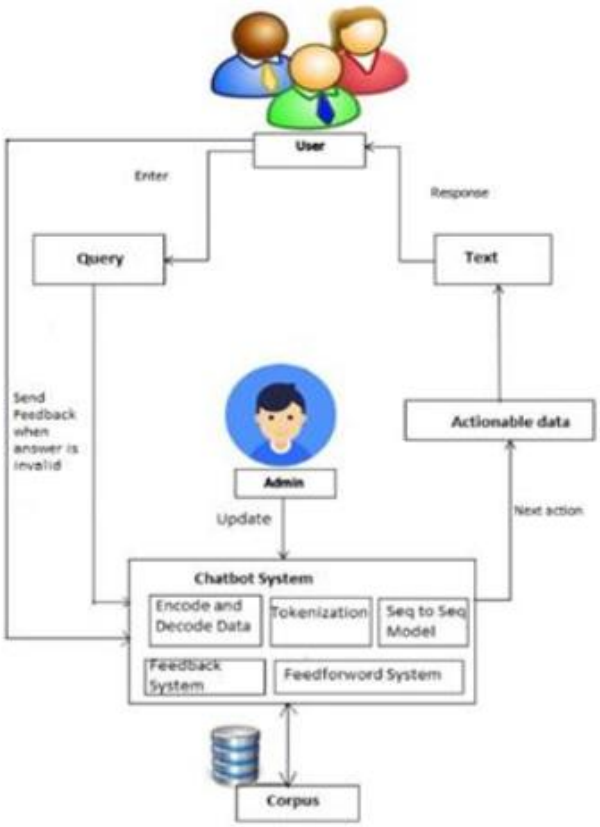
mode you can collect the survey so you can better understand the what's going on in the project

Step 2: Architecture of project



Flow of project

In above figure user send the query to the lex. Lex send the query to the lambda function to handle lambda function handle the query and fetch the data from dynamodb through Athena and response to the lex through lambda function then user can see the response given by lambda.



Process

This process of project user send query to chatbot. Chatbot connected with database through database chatbot given the response to the user.

Step 3: Working process in technical term.

In this step first we create the bot in chatbot. In chatbot create the multiple intent in every intent there is slot type. Slot type means what type of user can answer to particular question which is asked by the bot to the user.

Than to handle the query we can pass the query in lambda function lambda function is connected with bot and database also. Through query pass via Athena to dynamodb fetch the value in lambda function.in lambda function we create the function to fetch the data from database.

In database create the db instance. In instance we have to create table in table we add the item manually. In table there is one primary key. Using this primary key we can excess the data in lambda function from dynamo db database.

After that we build the bot and check the flow is it working or not. If we change something in any of service so we have to build again and get the answer.

5) Experimental Study

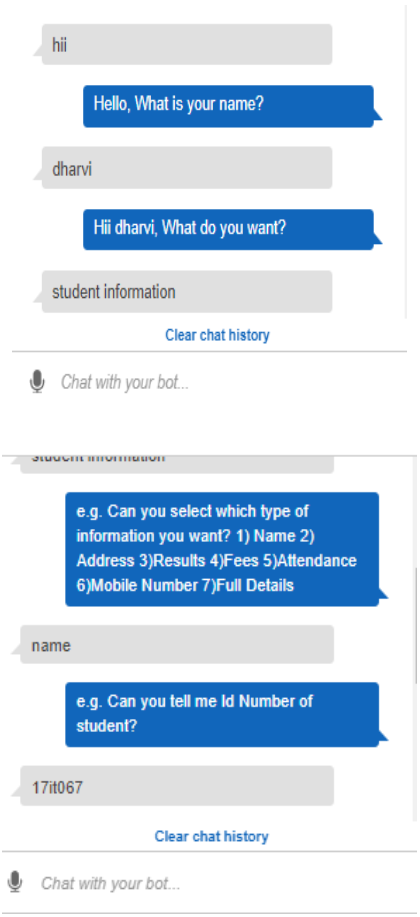
Database

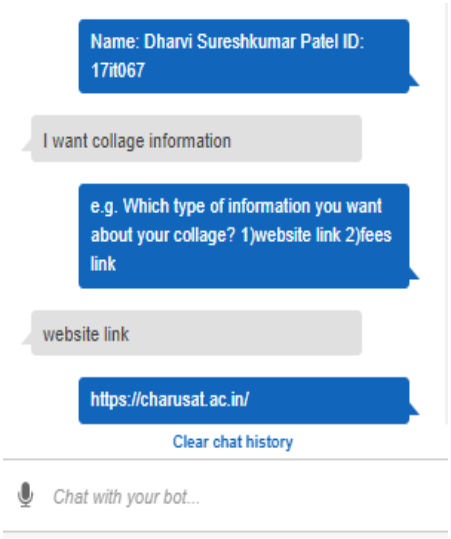
In database create the db instance. In instance we have to create table in table we add the item manually.

Database having many values about students like name, address, id, phone number, fees, result etc.

Result:

The results of this project are measured in whether sentiment analysis and active learning is correctly implemented or not. In this system all the queries like positive, negative and neural queries and also the conversations are store within the database. the system was partially successful by using the chatbot. it is because, although great deal of knowledge was added to incorporate some common answers to the queries which are off scripts and to feature empathy to the bot(so that it understands what is the current mood of the user and responds accordingly), since scope of these queries is vast, the system requires more rigorous data to Handel all the question which are out of script. Active learning helps to enhance the bot performance for handling off-script queries. It correctly understand the user's question, asks clarifying, then re trains the NLP to offer response what the user is meant to urge . So there is a more benefits of the using chatbots by the students for the enquiry of the college.





Result of chatbot

6) Conclusion

This project is extremely useful for the scholars who can't go college and also want the knowledge about college. Students can use the chat bot to urge the answers to their questions. Students can use these web based system for creating queries at any point of your time. An evaluation happened from data collected by potential students of the school . Also after received feedback from the primary deployment, extra requirements were introduced and implemented. Nevertheless, active helps to enhance the bot performance for handling off-script series. so the conclusion is that the student chatbot are very useful for the scholars also as colleges.

7) Acknowledgement:

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