Chatbot using IBM Watson

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ABSTRACT

Chatbot are more popular these days as there are some programs respond intelligently like human. These type of programs are known as Chatbot. This paper addresses the design and implementation using the Ibm Watson tool of a University Chatbot system. These new modes of user interaction are aided in part by advancements in Artificial Intelligence and Machine Learning technology.The project aimed to implement a web-based chatbot to assist with online student query, using tools that expose artificial intelligence methods such as natural language understanding.

Allowing users to interact with the chatbot using natural language input and to train the chatbot using appropriate methods so it will be able to generate a response. The chatbot will allow students to solve any query related to college..

KEYWORDS— Chatbot; Artificial Intelligence, Natural language

INTRODUCTION

Universities are becoming ever more competitive with each other to adopt the newest advancements in technology to provide an improved delivery service to satisfy students. GGSIPU, DU, IIT and NSIT are wanting to focus on integrating new technology to improve the speed at which queries are acknowledged . With this in mind the relationship with the student is always evolving due to the growth of technology.

Universities are now enabling the use of technology so students can perform more tasks online, such as; cheque image clearing to allow the payment of cheques remotely and intelligent chatbots to increase customer service and assist employees. A chatbot is a "simple software program that can answer user query, engaging experience and strengthen their relationship with the customer, with the use of natural language used by bots to establish a more personal and contextual conversation. The focus of this project is to implement these new technologies to create an intelligent chatbot to enable students query .

This work aims to provide a fast and convenient way to manage your Student query. The online university chatbot will help facilitate the students with queries and assist with personal and college info.

DESIGN OF CHATBOT

A University Chatbot refers to a chatting robot. It is a communication pretending computer program. It is all about the conversation with the user. The conversation with a Chatbot is very easy ..During designing a Chatbot, how does the Chatbot responds to the user?And how will be the conversation with the user and the machine..

Chatbot is very important. The flow diagram of a Chatbot is represented using diagram as follows:
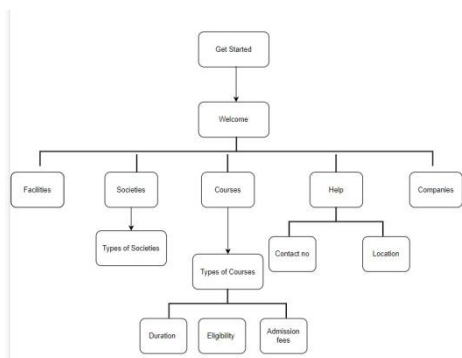
Fig.1: Flow Diagram of Chatbot Design.

The following facts are necessary during designing a Chatbot :

A.   Selection of Operating System

Windows is used for this project because it is user friendly. It is also robust.

B.   Software Selection

IBM Watson software is used for programming in python. trains basic workspace and it is mostly used for artificial intelligence.

C.   Creating a University Chatbot

For creating a University Chatbot, a program has to be written. Python programming language is used for programming. The Chatbot is created in such a way that it will help the user, improve the communication with each other and amuse the user. Here we need no to write the program we have to create questions and answers for the chatbot.

D.   Creating a Chat

The chat is created using a design that is known to the user and could be easy to understand. Chat dialog box is used to create conversation. This dialog box is created using Watson tool. The user creates the intents ,entities to connect through nlp.

E.   Matching Pattern

It is a technique of artificial intelligence used in the design of a Chatbot. The input is matched with the inputs saved in the intents and corresponding response is returned to the user.

F.   Easy and Simple

The design of a Chatbot is very simple. It just answers to the questions asked by the user, if the question is found in the database, if not then it shows default answer.

G.   NLP(Natural Language Processing)

The chatbot engine is thought of as one of the most important elements of a chatbot, alias "Natural Language Understanding (NLU) engine" .
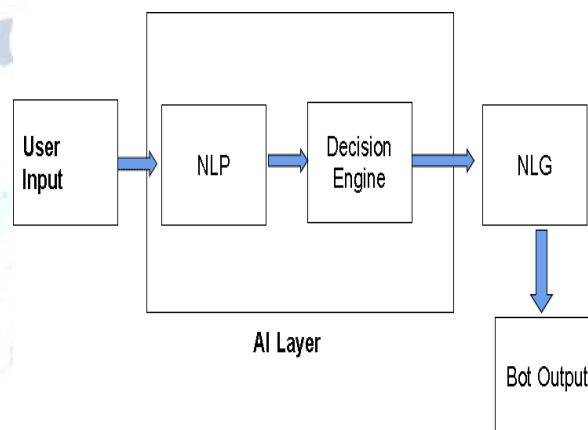

Fig. 2: Sequence Diagram Representing Architecture of the Chatbot.

IMPLEMENTATION PROCESS

Chatbot is a computer application which uses artificial intelligence to mimic human conversation. It helps the user by answering the questions asked by them. The program is implemented using IBM Watson tool. Like

A. *Design Techniques and Methods*

• *Launch the Ibm Watson*

First login to the ibm cloud. Then go to services and search the Watson assistant services and then launch the Watson assistant.

• *Creating skills dialog*

A container for the artificial intelligence that enables an assistant to help your customers. Assistant Directs requests down the optimal path for solving a customer problem. Add skills so your assistant can provide a direct answer to a common question or reference more generalized search results for something more complex

B. *Modules Description*

The description of the modules used in the implementation is given below :

• Dialog()

This is the main part of the Watson assistant tool. In this the responses are arranged , it makes the relation between the intents and the entities .

- Intents()

A goal that you anticipate your users will have when they interact with your assistant. For example, you might define an intent that is named store hours that answers questions about store hours.

- Entities()

A term or object that provides context for an intent. For example, an entity might be a city name that helps your dialog to distinguish which store the user wants to know store hours for.

- Integration()

This is used to create the web chat link for the chatbot. Also we can change the font color of the text and the link color and the heading color of the chatbot. In this we have the embedded code of the chatbot which we use in any website we want to use. This is one of the main part of IBM Watson References.
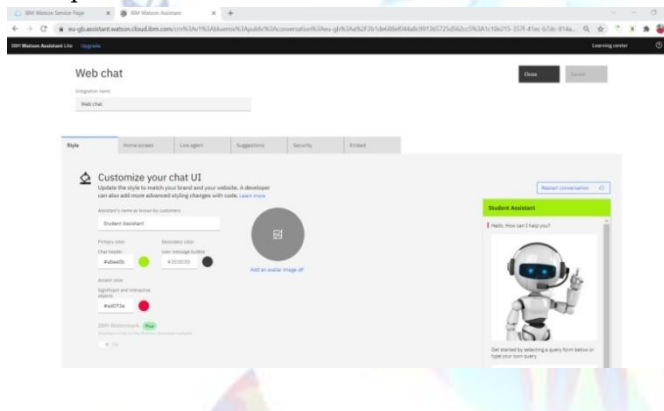
COMPARISON

IBM Watson AI Assistant integrates diverse conversation technology into an application. The Assistant can be used for a variety of channels including mobile devices, messaging platforms, and robots. This Chatbot is user friendly and easy to understand. It is not very complicated like other Chatbots. In other Chatbots, the inside working of the chatbot is very complicated. Many coding lines are used which is difficult to understand. In this we have to just write queries as a user and types its solutions and just connect them . This Chatbot uses general pattern matching to represent the input and output whereas other Chatbots uses input rules, keyword patterns and output rules to generate a response. If the input is not found in the database, a default answer will be generated. The input and output format can be changed by the customers. Since own database can be created, it allows the user to easily understand how the response is created. The program can be modified easily acc to the needs of the customers .

FUTURE SCOPE

Chatbots are also known as virtual assistants. Everyone once in their life has an encounter with a chatbot, while you are searching for your queries and land on the website there is a small icon that pops up after some time and asks for your name or queries, that pop-up window is a chatbot. In simple answer for what is, a chatbot is " A software that can interact with human and collect information in conversation without human intervention is called a chatbot."

Future of chatbots In the future there will be lots of changes, we are going to witness. Here are some future use cases of chatbots.

1. Chatbots will process human conversation better using technologies like NLP and NLU. Chatbot platforms will use these technologies to make chatbots more human-like.

2. Improved Customer Experience: Chatbot will be designed to focus on chatbot experience and hence chatbot will be engaging and will provide a personalized experience to customers/visitors.

3. Voice Support: Chatbot will be able to process voice commands and answer the queries

4. Advance analytics: Chatbot platforms will provide better analytics to understand users' behavior and will organize them according to their interaction with chatbots.

5. Use of AI: Chatbot is going to be powered with Advance AI, which will enable chatbot to resolve more complex problems of visitors/customers.

Chatbots will make purchases more accurate and personalized with options prepared just for you. As chatbots learn more about the customers, the more personalized the experience will get. Apart from solving doubts and queries by conversing, it will adopt more human-like qualities and prove extremely beneficial to the business as well as the customer. It has already started taking over repetitive tasks users have to do on various platforms like making payments. It will make

the experience easier for everyone in the future with its capabilities eliminating the chance of taking risks with resources and making wrong decisions.

CONCLUSION

A chatbot is one of the simple ways to communicate with the computer and get your query solved without hesitations ; users can easily type their query in natural language and retrieve information. In this paper, information about the design, implementation, creation of the university chatbot using IBM Watson has been presented. Chatbot is an advance tool for quick interaction with the user. They help us by providing information and answering the questions that are hard to find. The Chatbot must be simple and conversational. Since there are many designs and approaches for creating a chatbot, but this approach is easy and simple . In this project, we looked into how Chatbots are developed using watson and the applications of Chatbots in education fields. Watson created Chatbot must be user friendly, must be easily understood and simple, the knowledge base must be compact.

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