INFORMATION BASED CHATBOT

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ABSTRACT

A chatbot is a computer program that can converse with humans using artificial intelligence in messaging platforms. The goal of the project is to make an AI-based contextual chatbot that will maintain the context or in which sense of proportion the user is asking a query. Further using deep learning techniques in Python, we have constructed a Sequential model for our training sets of data. The patterns, intents and responses will be used to train the AI chatbot. The user's query will be shown to the intents.json class using neural networks, which maintain context and return a random response.

In our project we explore how a chatbot can give information to students about college-related information. We created a chatbot for giving students information about college like where is gym, where the library is, etc. Information given by chatbots would be useful for new students at college, giving them information about things that we consider to be important when you're a first-year student.

INTRODUCTION

AI Chatbots is not a recent development. It is simulation which can understand human language, process it and interact back with humans while performing specific tasks. For example, a chatbot can be employed as a helpdesk executive. Joseph Wiesenbaum created first chatbot in 1966, named Eliza. It all started when Alan Turing published an article named "Computer Machinery and Intelligence", and raised an intriguing question, "Can machine think?", since than we have seen multiple chatbots surpassing their predecessors to be more naturally conversant and technologically advanced. These advancements have led us to an era where conversations with chatbots have become as normal and natural as with another human.

The chatbot services which deliver are diverse. Important health messages, to check weather forecast or to purchase a new accessory, and anything else in between.

The term chatbot is synonymous with text conversation but it is growing quickly through voice communication. "Alexa, play a song?" The chatbot can talk to you through different channels; such as Facebook Messenger, Siri, SMS, Skype, Slack, WeChat, Telegram and many others. Consumers spend lots of time using messaging applications. Therefore, messaging applications are currently the most popular way companies deliver chatbot experiences to consumers. Our goal is to make an AI-based contextual chatbot that will maintain the context or in which sense of proportion the user is asking a query. In our project we explore how a chatbot can give information to students about college-related information.

PROBLEM STATEMENT

Every new student in college have problem to understand the process or environment about the college because they came from school where the environment is very different from the college so they get confused and don't get the proper guidance from seniors or any other person.

This happens with many students so why should students waste their valuable time in figuring out all the basic college related stuff?

That's why, we came with the solution in which we provide a chatbot to the students so that they don't have to worry about the new college environment, places, syllabus, events, clubs etc. All they have to do is open the chatbot on their devices and ask the bot, which will answer all of their questions.

METHODOLOGY

We developed this project with the help of some Python libraries.

The project has some main files: -

1.Training.py

2.Testing.py

3.Chatbot_gui.py

4.Intents.json

5.Chatbot_model.h5

Which is used to train our chatbot for in which context user queries belongs. The GUI of the chatbot is also made with the help of these Python libraries and files.

The libraries are nltk, random, json, pickle, tensorflow, sklearn, numpy, tkinter.

1. Training.py

In training.py file we create the model and train our python chatbot. First, we import all the required libraries.

After that we created a class called 'training'. The class constructor contains all the initialization of the variables which are accessible by the class methods. We created a training set to contain input and output sets for our model. Now we created a build model to use our training sets. We used TensorFlow's keras function to create a model. After this we saved the trained model in 'chatbot_model.h5' and also input and output sets in 'training_data.file' using pickle which is helping in predicting the response.

2.Testing.py

Testing file use to predicting the response. So, first we import all the required libraries. After that we created a testing class, we initialized all variables and load 'intent.json', 'training_data.file' and 'chatbot_model.h5'. Then we created function called 'classify'. The use of this function is to predict the classes for the user queries. We made a response function which help the user to get the response according to their query.

4. Chatbot_gui.py

We created the GUI of the chatbot with the help of tkinter library. It provides a fast and easy way to create GUI application. Than we create the main window interface for conversation between the user and the chatbot. After that we make the chatbot to do some action when the user presses the send button, the query will display on the screen with the bot prediction.

FLOWCHART OF THE CHATBOT
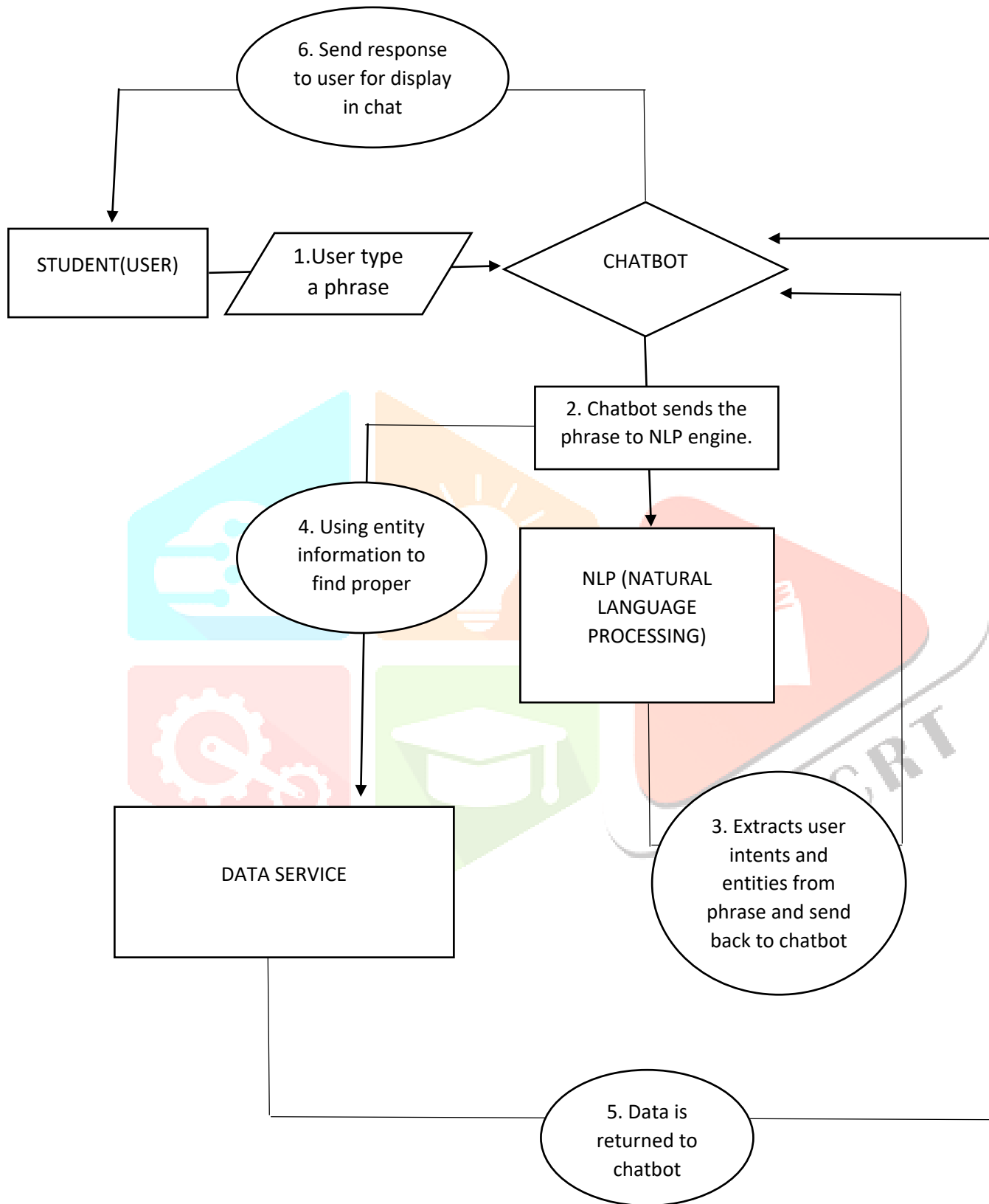
EXISTING SYSTEM

Mostly the information about the infrastructure is gathered from college staff so it gets very troublesome and time consuming to get the required information.

There are many students who face problem in gathering all the necessary and basic information on matters such as various events or clubs. It is very hard to find the right person who can answer all their queries without getting frustrated by the barrage of questions.

PORPOSED SYSTEM

This System will provide a platform to easily access such information.

This system will also provide an easy approach to share information related to college structure and events. Multiple users can work simultaneously on the system.

It will also save time for staff who are bombarded with questions regarding such matters almost every day. The system will be used by students and teachers in colleges and can also be used by schools.

The Objective of AI Chatbot is to provide better facility to the students and teachers to them out with such stuff without annoying others.
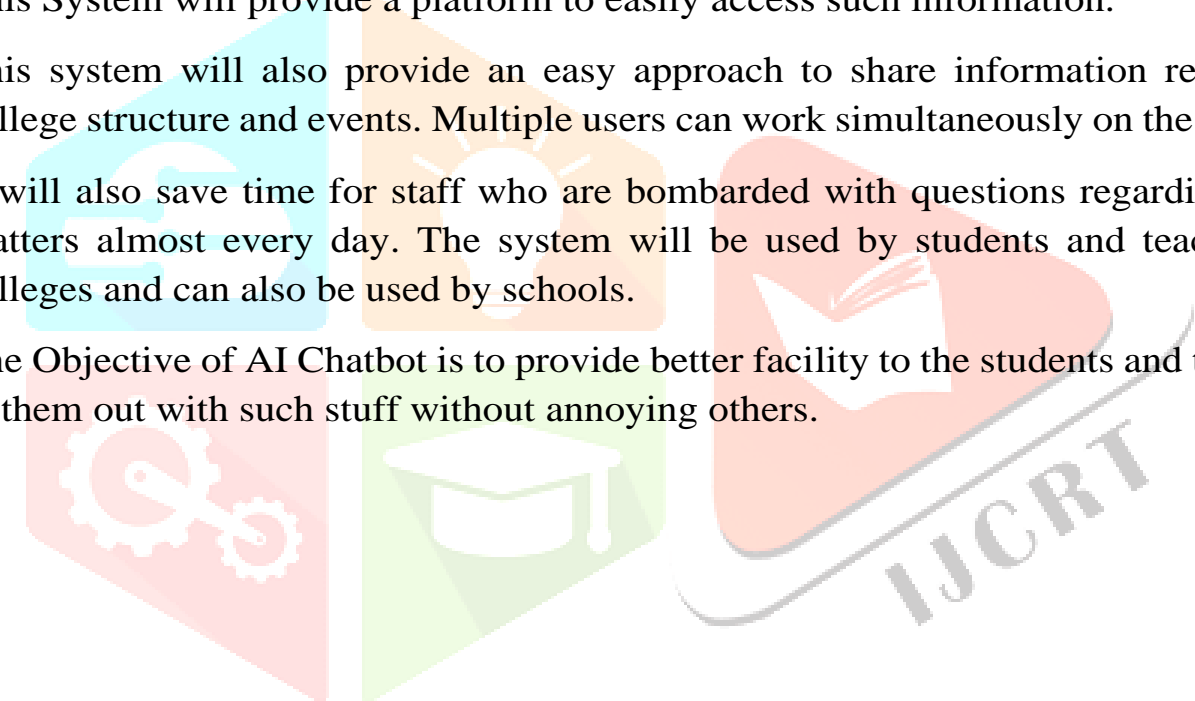
FUTURE SCOPE

There are limitations to what has been currently achieved with chatbots.

This project has large scope as it has the following features which help in making it easy to use, understand and modify it.

Data processing and retrieval are hindering chatbots to reach their full potential. It is not that we lack the computational processing power to do so. However, there is a limitation on "How" we do it.

Students can easily gather information no need to be hesitant of annoying anyone to stay up to date with events.

CONCLUSION

It has been a matter of immense delight, respect and challenge to have this opportunity to take up this venture and complete it effectively. It was a pleasant experience working with the professors.

This will be helpful when we are going work in industry & educational field where we can put all these it in our practice. While creating this framework AI Chatbot, I have learnt a part about the working of system.

Amid the development process, I have got the concept of planning and building a system. Whereas working on my framework I have utilized all the information which was instructed to us and all that helped this project complete.

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