College Enquiry Smart Assistant

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Abstract:- College Enquiry Chatbot is a Python web application designed to provide students with information about colleges, such as courses, fees, and admission processes. The chatbot uses artificial intelligence and machine learning algorithms to analyse user queries and provide personalized information. The project aims to create an expert system for college enquiry desks, using an android-based chatbot that communicates in natural language to a server. The chatbot can answer any queries students may have, and students can use the provided graphical user interface to ask questions. The chatbot is designed for college students and guardians, offering a simple and efficient way to access information. The technology demonstrator is used to verify the proposed framework for the chatbot.

Keywords:- Chatbot, Python, Flask, Nltk.

I. INTRODUCTION

The College Enquiry Chat Bot project aims to develop an Android-based bot application that provides answers to students' enquiry related to college entire details. The bot allows users to chat and ask queries related to college activities, such as the date and timing of annual day, sports day, and other cultural activities. The response to the query is determined based on the users questions and the knowledge base . Specified keywords are fetched from the queries and the answer to those keywords is searched in the knowledge base. If a match is found, the relevant response is provided to the user or a default message is displayed, "Answer is not available at the moment, please revert back after some time."

A chatbot, also known as a talk Bot, bot, chatterbox, or Artificial Conversational Entity, is a computer program that conducts conversations via audio or textual methods. These programs are designed to simulate human behaviour as a conversational partner, passing the Turing test. Chat bots are often integrated into dialog systems for various practical purposes, such as customer service or information acquisition. The College Enquiry Chat Bot project uses artificial intelligence algorithms to analyse user queries and understand their messages. Students can select the category for department queries and ask the bot to chat. The algorithm matches keywords from the knowledge base, and if an answer is invalid, the user can mark it as invalid. The admin panel will then see the invalid answers and make necessary changes to the knowledge base to ensure proper results for future queries.

II. LITERATURE REVIEW

The described system proposes an Android-based college enquiry chatbot application that employs artificial intelligence to respond to student queries about college activities and notices. The system includes user registration, a user-friendly GUI, and an online notice board. It utilizes keyword matching to provide answers from a knowledge base and allows users to mark irrelevant answers. An admin panel handles user feedback for knowledge base updates. This system aims to offer students an efficient and convenient means of accessing college-related information, eliminating the need for in-person inquiries.[1]

A chatbot is software designed to engage in human-like conversations, providing answers to users' questions through text, speech, or non-verbal interactions. College Enquiry Chatbot employs machine learning to facilitate discussions about academic matters, including admission, fees, scholarships, department timetables, and required documents. This chatbot streamlines student queries and offers a text-based interface where users type commands to receive answers. The system uses a dataset to understand user queries and independently generates responses. It aims to enhance communication and information retrieval for students.[2]

The College Enquiry Chat Bot is an AI-powered web-based chatbot designed to efficiently respond to inquiries from students and parents about college-related matters. It alleviates the burden on college staff by providing information on topics such as course fees, school facilities, semester grades, backlogs, and due fees. This system offers a user-friendly interface for interactions, reducing the need for time-consuming in-person visits to the institution. The primary goal is to streamline information retrieval and improve response times, making it easier for students and parents to access crucial information during the admission process.[3]

Chatbots, accessible over the internet, are interactive software entities designed for engaging conversations with humans, found on various platforms from old HTML pages to modern social networks. They're highly versatile and work on both computers and smartphones, capable of conversing in multiple languages using NLP. Chatbots simplify daily problem-solving by using machine learning algorithms, particularly NLP, to analyze and respond to user queries. They offer natural and fluid conversations, making it difficult to distinguish between human and chatbot responses. This system is valuable for keeping students updated on college activities and employs various algorithms to generate optimal answers.[4]

The College Enquiry Chatbot project's primary objective is to provide students with quick responses to their college-related queries, such as course details, location, and fees, using machine learning algorithms. This web application offers an effective graphical user interface that gives users the impression of conversing with a real person. It eliminates the need for students to visit the college for inquiries. The chatbot employs Artificial Intelligence (AI) and Natural Language Processing (NLP) to understand and respond to a wide range of user questions. This project focuses on creating a user-friendly chatbot that can handle ambiguous queries, distinguishing it from command-based chatbots that require specific questions to provide answers.[5]

The project focuses on developing a College Enquiry Chatbot, a web application that uses AI to answer student queries about college-related matters like courses, fees, location, and more. The chatbot aims to streamline the information retrieval process and reduce the need for students to physically visit the college for inquiries. It provides a user-friendly interface, and users can ask questions in a conversational manner without following a specific format. The chatbot employs natural language processing and offers a seamless, human-like interaction. This system aims to keep students updated about college activities, enhancing accessibility and efficiency in handling queries.[6]

A chatbot is a computer application that mimics natural human conversations and is often used to handle various tasks, such as answering queries. These chatbots use AI technology and machine learning to understand and respond to user queries. While they aim to provide intelligent responses, they may have limitations in adapting to new information during a conversation. Chatbots are frequently used in customer service and call centers and are designed to interact with users using plain language. They serve as proxies for human interactions and can be built using languages like Python and PHP.[7]

III. METHODOLOGY

A. Implementation
The College Enquiry Chatbot operates by receiving textual input from users. Once it receives input from the user, it processes it for text recognition and initiates a conversation with the user. Users engage in conversations with the Chatbot.

The Chatbot operates based on a predefined set of rules, offering responses only to specific queries or texts within that predefined set. It can respond to requests that match the data in its dataset.

If someone asks a question that is not part of the dataset, it indicates that the Chatbot is not well-trained. Conversely, if a user poses a query that the bot is unfamiliar with, it won't respond as expected because it lacks understanding or preparation for the user's request. These bots are not particularly intelligent when compared to other types of bots. The questions asked by users are typically in straightforward English language.
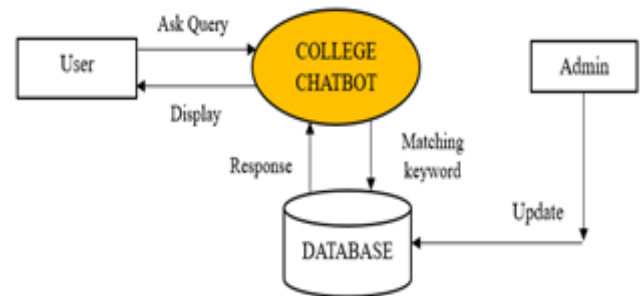

Fig 1: Basic architecture of Chatbot

In this system, we have created some file: -
- Creating a HTML template & add *chatap.html*
- Creating a CSS file *styles.css*
- Creating a python file *chatbot_flask.py*

A text file *college_details.txt* is created which contains all the required details of college that are sent as output/response from chatbot to the user's query.

➤ *Run the CHATBOT*
When all the scripts are error free. Then should be all setup the College Enquiry Chatbot project, Run the *chatbot_flask.py*. By the command

➤ *python chatbot_flask.py*
In the case of everything going the right way, then go to http://localhost:5000/

B. Functioning
When the user run the command, the default messages appear to user as welcome wishes. Then after user enters his query, the query is tokenized into tokens and these tokens or keywords or compared with knowledge base. If there is a match then the corresponding response will be sent to the user by the chatbot. Otherwise, a message will be displayed "The required information is not available. Reach us after some time…". The Flask application is used to 'GET' the query from the Graphical User Interface and to 'POST' the response along with the query on the GUI interface.
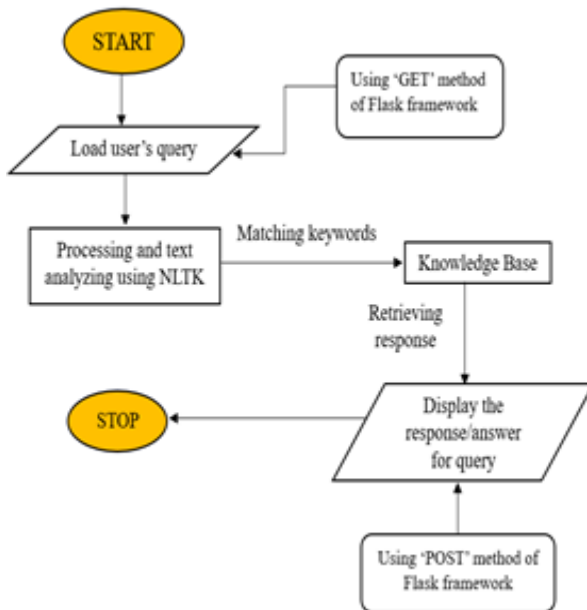
Fig 2: Working of chatbot

The chatbot framework serves to meet the academic requirements of clients. The chatbot's responsiveness relies on its knowledge base. WordNet is tasked with retrieving responses, encompassing all explanations triggered when the chatbot's Graphical User Interface (GUI) is engaged by a customer for inquiries. When a customer initiates interaction with the GUI and poses questions, the knowledge base is queried to find the answer. If the answer is located in the database, it is presented to the customer. If not, the system alerts the administrator that the response is absent from the knowledge repository and furnishes the client with a predefined response.

IV. CONCLUSION-

Our Chatbot serves as a platform that offers college-related information to users, including parents and students. It employs Natural Language Processing (NLP) to transform human language into a language of information. With the help of AI, it provides information about the college to users through both text-based and non-verbal interactions.

The generation of college enquiry chatbot is successful. This Python-implemented AI-driven chatbot has the potential to completely change how potential students and educational institutions communicate. It provides an easy-to-use, round-the-clock help system that expedites questions, application procedures, and even virtual campus visits. The chatbot is flexible and scalable to meet increasing demands since it makes advantage of Python's many modules and natural language processing powers. The project's success also depends on its capacity to lower expenses, eliminate manual labor, and enhance overall service quality. This chatbot has a bright future ahead of it, offering educational stakeholders, institutions, and students a useful tool as technology develops.

FUTURE SCOPE

The future scope of college enquiry chatbots powered by Python is promising. Python's versatility and AI capabilities can enhance user experiences, streamline processes, and provide personalized support for students. These chatbots can be developed to handle inquiries, assist with applications, and offer virtual campus tours using Python's robust libraries and natural language processing capabilities. They can also adapt and scale to handle increasing volumes of inquiries efficiently. As Python continues to evolve and its AI ecosystem expands, college enquiry chatbots are set to become more sophisticated and integral in the educational landscape, offering accessible and tailored assistance to students throughout their academic journey.

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