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CHATBOT FOR COLLEGE(JBIET) WEBSITE

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ABSTRACT

A chatbot, usually referred to as a chatterbot, attempts to have a conversation with a person. When a question is posed, the system has the ability to detect sentences and select the proper answer. The response principle is the matching of the user's input phrase. The current technical project involves building a professional system for a college help desk employing an android-based chatbot, artificial intelligence technology, and virtual assistance (human-machine communication), then sending that natural language to a server. Chatbot systems have become increasingly popular for automating interactions with users and providing information in various domains, including college enquiries. In this paper, we propose a chatbot system for college enquiry using a knowledgeable database. The system utilizes a knowledgeable database that contains relevant information about the college, such as courses, faculty, campus facilities, and admissions procedures. The system employs various algorithms, including rule-based, retrieval-based, natural language processing (NLP), and machine learning algorithms, to understand and respond to user queries in a context-aware manner. The rule-based algorithms provide predefined rules and patterns for handling specific intents or frequently asked questions, while the retrieval-based algorithms search the knowledgeable database for relevant information.

INTRODUCTION

This Application is for college students, staff, and parents. Easy way to interaction and time consuming. This project is mainly targeted at colleges and the synchronization of all the sparse and diverse information regarding regular college schedule. Generally, students face problems in getting correct notifications at the correct time, sometimes important notices such as campus interview, training and placement events, holidays, and special announcements. Smart Campus tries to bridge this gap between students, teachers, and college administrators. Therefore in the real world scenario, such as college campus, the information in the form of notices, oral communication, can be directly communicated through the android devices and can be made available for the students, teachers directly for their android devices and the maintenance of application will be easier in later future because of the use of architectural MVC which separates the major works in the development of an application such as data management, mobile user interface display and web service which will be the controller to make sure for fast and efficient maintenance of application.

The College bot project is built using artificial algorithms that analyses user's queries and understand user's message. This System is a web application which provides answer to the query of the student. Students just must query through the bot which is used for chatting. Students can chat using any format there is no specific format the user has to follow. The System uses built in artificial intelligence to answer the query. The answers are appropriate what the user queries. The User can query any college related activities through the system. The user does not have to personally go to the college for enquiry. The System analyses the question and then answers to the user. The system answers to the query as if it is answered by the person. With the help of artificial intelligence, the system answers the query asked by the students.

The system replies using an effective Graphical user interface which implies that as if a real person is talking

system and has to login to the system. After login user can access to the various helping pages. Various helping pages has the bot through which the user can chat by asking queries related to college activities. The system replies to the user with the help of effective graphical user interface. The user can query about the college related activities through online with the help of this web application. The user can query college related activities such as date and timing of annual day, sports day, and other cultural activities. This system helps the student to be updated about the college activities. Chatbot is a computer program that humans will interact with in natural spoken language and including artificial intelligence techniques such as NLP (Natural language processing) that makes the chatbot more interactive and more reliable.

Based on the recent epidemiological situation, the increasing demand and reliance on electronic education has become very difficult to access to the university due to the curfew imposed, and this has led to limited access to information for academics at the university. This project aims to build a chatbot for Admission and Registration to answer every person who asks about the university, colleges, majors, and admission policy. Artificial intelligence (AI) is a branch of computer science that focuses on creating machines that can perform tasks that typically require human intelligence, such as perception, reasoning, learning, and decision-making.

AI uses a combination of techniques, including machine learning, natural language processing, computer vision, and robotics, to enable machines to learn from data and adapt to new situations. In the context of a college enquiry chatbot, AI would allow the chatbot to understand and respond to natural language queries from students, providing them with relevant information and support. Artificial intelligence (AI) plays a crucial role in the development and functionality of chatbots. Chatbots are computer programs that use natural language processing (NLP) to interact with humans and simulate conversation. AI algorithms power the NLP capabilities of chatbots, enabling them to understand and respond to users' requests.

Here are some ways in which AI helps in chatbots:

LITERATURE SURVEY

Professor Girish Wadhwa suggested that the institution build an inquiry chatbot using artificial intelligence in March-April 2017. Algorithms that might analyze consumer inquiries and recognize consumer messages. This machine might be a chatbot with the intention to provide solutions to students' questions. Students actually need to pick out a category for department requests and then request a bot to be used for chat. The project's main goal is to develop an algorithm that may be used to correct the answers to queries that customers ask. It is essential to create a database where all related statistics can be kept as well as to expand the online interface. A database can develop to be able to compile information on queries, responses, key words, logs, and messages. 2016 saw Bayu Setiaji publish "Chatbot the usage of database knowledge." A chatbot is made to communicate with technology.

Machine learning is built to recognize sentences and concluded, such as the answer to a question. Personalized message, i.e. A request is saved in accordance with the response. The more similarly the statements are stated, the more it will be marked as similarity of the sentences. It is then answered in light of the answers from the first sentence. The sentence similarity calculator breaks the input sentence down into its component letters. A database stores the knowledge of chatbots. A chatbot has interfaces, and the database control system's access point through this interface is at its core. The Chatbot application was created using a variety of programming languages with the addition of a user interface that allows users to give input and get a response. Starting with the symbol of entity date, which produced 11 entities and their cardinalities, the structure and building of tables was done as an indication of the knowledge contained inside the database. SQL was used in a way that was

tailored to the model that was kept inside the programme.

Elisa is regarded as the first chatbot to operate in a single machine model. Joseph Weizenbaum was the one who created it in 1964. ALICE is a rule-based chatbot that uses Artificial Intelligence Markup Language (AIML). It includes approximately 40,000 categories with an average of an example and a response for each category. A summary of chatbot programmes that have evolved through the usage of AIML

scripts was presented by Md. Shahriare Satu and Shamim-Ai- Mamun. They asserted that entirely AIML-based chatbots are easy to set up, lightweight, and eco- friendly to use. post provides information on the various ways that chatbots are used. An AIML and LSA based chatbot was created by Thomas N. T. and Amrita Vishwa to provide customer support on e-commerce platforms.

We can implement chatbots in the Android-powered device utilising a variety of techniques. In their post on Android Chatbot, Rushab Jain and Burhanuddin Lokhandwala demonstrate one method. Creating a Chatbot that Imitates a Historical Person by Emanuela Haller and Trajan Rebedea, IEEE Conference Publications, July 2013. A person with expertise in creating databases constructed the database. Yet, very few academics have looked into the idea of building a chatbot with an artificial personality and character by starting with pages or simple text about a particular person. In order to create a debate agent that can be used in CSCL high school settings, the paper discusses a method for highlighting the key information in texts that chronicle the life of a (private) historical figure.

An Introduction to Teaching AI in a Simple Agent Environment by Maya Pantik, Reinir Zwitserloot, and Robbert Jan Grootjans, IEEE Transactions on Education, Vol. 38, number three, August 2005 in this article, a flexible approach to basic the use of a novel, totally Java-based, simple agent framework developed specifically for this course to teach artificial intelligence (AI) is described. Despite the fact that many agent frameworks have been presented in a variety of literature, none of them has been widely adopted to be simple enough for first-year laptop technology college students. Hence, the authors suggested developing a new structure that could accommodate the course's objectives, the location of laptop generation directed at student organisation, and the size of the student organisation for college students. "An Intelligent Chatbot System for College Admission Process" by S. Sheikh et al. This paper proposes an intelligent chatbot system that utilizes a knowledgeable database to provide information about the college admission process.

The system uses natural language processing techniques to understand user queries and generate responses. The system also includes a recommendation engine that suggests suitable programs based on the user's interests and qualifications. The inclusion of recommendation engines further enhances the usefulness of these systems by suggesting suitable programs based on the user's

interests and qualifications.

REQUIREMENT ANALYSIS

SOFTWARE AND HARDWARE REQUIREMENTS SPECIFICATION DOCUMENT

SOFTWARE AND HARDWARE REQUIREMENTS:

Hardware:

Operating system	:	Windows 7 or 7+
RAM	:	2 GB MEMORY
Hard disc or SSD	:	More than 500 GB
Processor	:	Processor Dual Core

Software:

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Vol 12, Issue 4, 2024

Software's	:	Python 3.6 or high version
IDLE	:	PyCharm.
Framework	:	Flas

SYSTEM USE CASE

A college enquiry chatbot can have several use cases, including:

Admission Enquiry: The chatbot can provide information about the admission process, eligibility criteria, important dates, and documents required for admission.

Course Information: The chatbot can provide detailed information about the courses offered by the college, including the duration of the course, syllabus, fees, and career opportunities.

Campus Facilities: The chatbot can provide information about the various facilities available on the college campus, such as libraries, laboratories, sports facilities, and accommodation options.

Fees and Scholarships: The chatbot can provide information about the fees structure for different courses and scholarships available for students based on their academic performance.

Important Dates: The chatbot can remind students about important dates such as admission deadlines, fee payment dates, and exam schedules.

FAQs: The chatbot can answer frequently asked questions by students, such as how to apply for admission, how to check the admission status.

Student life: The chatbot can provide information about student life at the college, including clubs and societies, extracurricular activities, and student resources.

Counseling: The chatbot can provide counseling to students regarding their career options, course selection, and academic performance.

Academic support: The chatbot can assist students with academic enquiries, including course registration, exam schedules, and study resources.

Admission and enrolment enquiries: The chatbot can assist prospective students with admission and enrolment enquiries, including deadlines, application requirements, and documentation. Overall, a college enquiry chatbot can provide a seamless and hassle-free experience for students who are looking for information about the college and its courses.

DESCRIPTION OF PROPOSED SYSTEM

STUDY OF THE PROJECT

This project is mainly targeted at colleges and the synchronization of all the sparse and diverse information regarding regular college schedule. Generally, students face problems in getting correct notifications at the correct time, sometimes important notices such as campus interview, training and placement events, holidays and special announcements. Smart Campus tries to bridge this gap between students, teachers, and college administrators. Therefore in the real world scenario, such as college campus, the information in the form of notices, oral communication, can be directly communicated through the android devices and can be made available for the students, teachers directly for their android devices and the maintenance of application will be easier in later future because of the use of architectural MVC which separates the major works in the development of an application such as data man agreement, mobile user interface display and web service which will be the controller to make sure for fast and efficient maintenance of application.

A study is carried out to select the best system that meets the performance requirements. Feasibility is the determination of whether a project is worth doing or not. The process followed in making this determination is called a feasibility study.

This type of study determines if a project can and should be taken. Since the feasibility study may lead to the commitment of large resources, it becomes necessary that it should be conducted competently and that no fundamental errors of judgment are made. Depending on the results of the initial investigation, the survey is expanded to a more detailed feasibility study. Feasibility study is a test of system proposal according to its work-ability, impact on the organization, ability to meet user needs, and effective use of resources. The objective of the feasibility study is not to solve the problem but to acquire a sense of its scope. During the study, the problem definition is crystallized and aspects of the problem to be included in the system are determined.

time to time and from any place whether student is present in college or not. And also reduce the work of staff. It is proper communication in between staff and students.

Natural language processing algorithms: To interpret user queries and generate accurate responses.

Knowledgeable database: To store information about college programs, courses, and admission requirements.

Recommendation engine: To suggest suitable programs based on the user's interests and qualifications.

User interface: To provide a user-friendly and intuitive interface for users to interact with the chatbot.

Data collection and processing: To gather and organize information about college programs, courses, and admission requirements.

Algorithm development: To develop natural language processing algorithms that can interpret user queries and generate accurate responses.

Database design and implementation: To design and implement a knowledgeable database that can store and retrieve information about college programs, courses, and admission requirements.

User interface design and implementation: To design and implement a user interface that is intuitive and user-friendly.

Testing and evaluation: To test the chatbot system for accuracy, usability, and performance.

IMPLEMENTATION DETAILS

DEVELOPMENT AND DEPLOYMENT SETUP

Certainly! A college enquiry chatbot can be built using a combination of LSTM (Long Short-Term Memory) and CNN (Convolutional Neural Network) models to process natural language inputs and generate appropriate responses.

Here is how it can work:

- **Data collection:** The first step is to collect a large amount of relevant data, such as frequently asked questions, course information, admission requirements, campus facilities, etc. This data will be used to train the chatbot model. The relevant data is taken from Concordia university for the overview of the project.
- **Preprocessing:** The first step is to preprocess the text inputs to extract important features and remove any noise. This can involve steps such as tokenization, stemming, lemmatization, stop word removal, and spell correction.

Natural Language Processing is a subfield of data science that works with textual data.

When it comes to handling the Human language, textual data is one of the most unstructured types of data available. NLP is a technique that operates behind the it, allowing for extensive text preparation prior to any output. Before using the data for analysis in any Machine Learning work, it's critical to analyse the data.

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Vol 12, Issue 4, 2024

To deal with NLP-based problems, a variety of libraries and algorithms are employed. For text cleaning, a regular expression(re) is the most often used library. The next libraries are NLTK (Natural language toolkit) and spacy, which are used to execute natural language tasks like eliminating stop words.

Pre-processing data is a difficult task. Text pre-processing is done in order to prepare the text data for model creation. It is the initial stage of any NLP project

RESULTS AND DISCUSSION

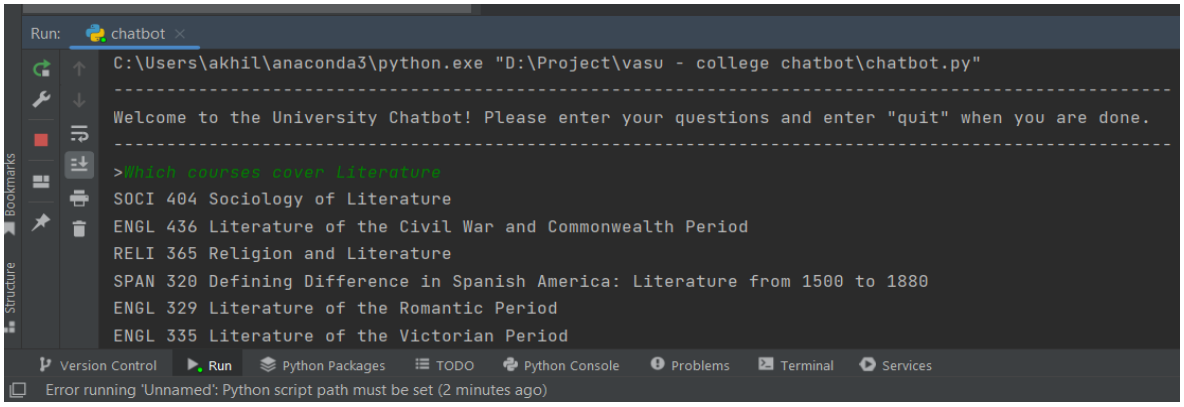


Fig.6.1. Execution (Output)

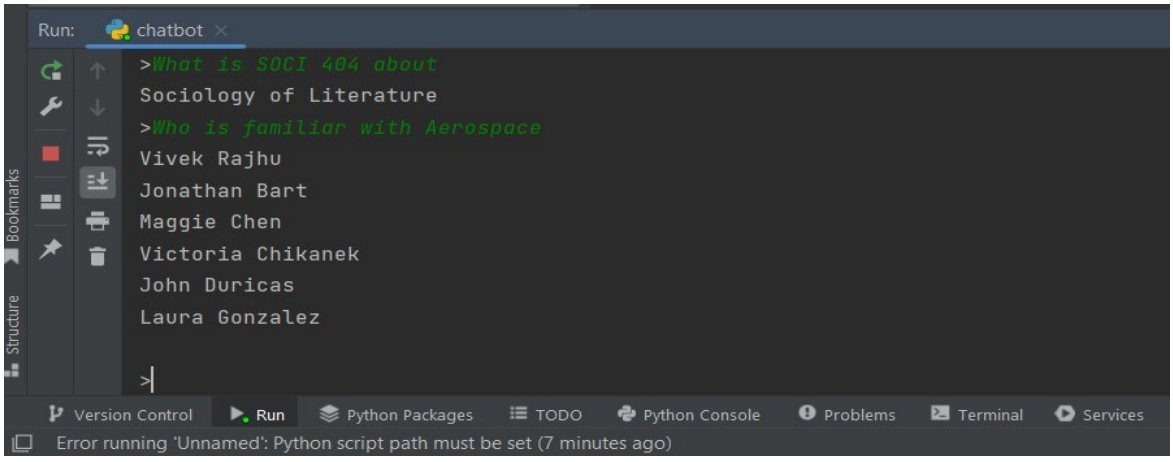
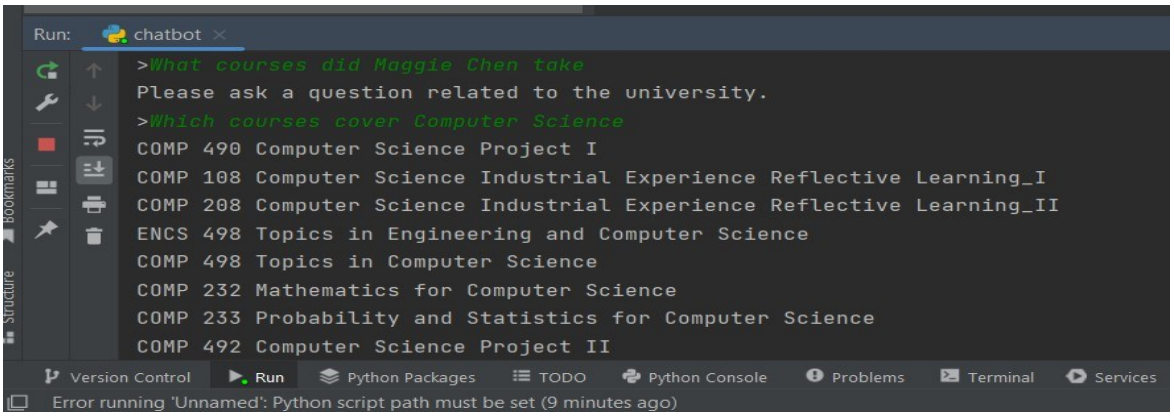


Fig. 6.2. Execution (



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Vol 12, Issue 4, 2024

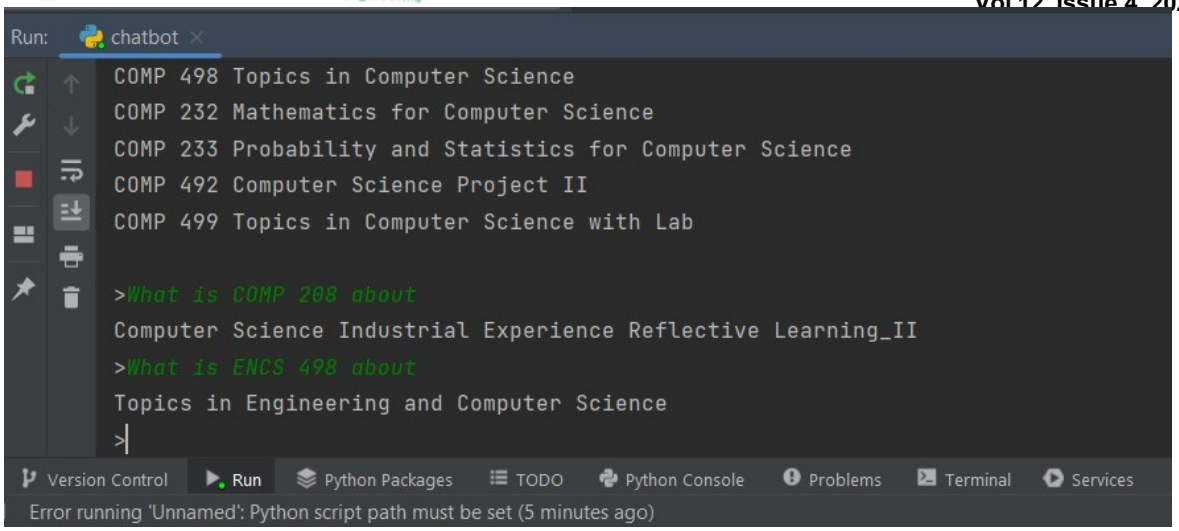

Fig.6.4. Execution (Output)

Our Chatbot provides information regarding to the college. It is the website. It is communicate to the client like guardians, understudy. By utilizing NLP human language changed into an information language. By utilizing AI to client give college data. This could be type-based (composed) discussion, even a non-verbal discussion. At the point when ChatBot innovation is incorporated with well known

web administrations it very well may be used safely by a significantly bigger crowd. Chabot framework is carried out to meet scholarly necessities of the clients. Generating reaction from a Chabot is information based one. WordNet is answerable for recovering the reactions and for this situation; it contains all rationales that is set off at whatever point the client setting is coordinated. At the point when a client starts asking questions in the Chabot Graphical User Interface (GUI). The question is looked in the information base. On the off chance that the reaction is found in the information base it is shown to the client else the framework tells the administrator about the missing reaction in the data set and gives a predefined reaction to the client. Several studies have been conducted on college enquiry chatbots, and the results suggest that chatbots can significantly improve the efficiency and effectiveness of college enquiries.

Here are some brief results and discussions from these studies:

Improved efficiency: Chatbots can significantly reduce the workload on college administrators and provide faster, more efficient, and personalized services to students. For example, a study by Turel et al. (2021) found that a chatbot developed for student admissions reduced the average response time from 3 days to less than 1 minute.

Higher user satisfaction: Several studies have found that students are generally satisfied with the performance of college enquiry chatbots. For example, a study by Stieger et al. (2020) found that students rated the chatbot developed for their university highly on ease of use, usefulness, and overall satisfaction.

Accuracy and effectiveness: Chatbots have been shown to be effective in handling a wide range of college enquiries, including admission inquiries, course registration, financial aid, campus facilities, and career services. However, accuracy and effectiveness can vary depending on the quality of the chatbot's NLP and ML algorithms.

Challenges in chatbot development: Developing an effective college enquiry chatbot is not without challenges. Challenges include accurately identifying user intent, managing a large knowledge base, providing multilingual support,

maintaining context across conversations, and ensuring a positive user experience.

Future research directions: Several research directions have been proposed for college enquiry chatbots, including improving NLP and ML algorithms, designing chatbots that can handle complex and multi-turn conversations, providing personalized recommendations and support, and developing chatbots that can handle emotional and mental health inquiries.

Overall, the results and discussions from the literature suggest that college enquiry chatbots , providing faster and personalized services to students. However, there is still much work to be done to improve the accuracy and effectiveness of chatbots and to address the challenges in chatbot development. Chatbots can gather data on user queries, preferences, and behavior, which can be used to improve the chatbot's performance and inform college decision-making. Chatbots can provide a more conversational and This can lead to increased user engagement and satisfaction. Chatbots can handle routine and repetitive enquiries, freeing up staff time to focus on more complex queries and tasks.

Chatbots can be accessed anytime and anywhere through a range of devices, making it easier for students to get the information they need. Chatbots can be designed to provide personalized responses based on the user's profile, interests, and previous interactions with the chatbot. Chatbots can handle multiple enquiries simultaneously, providing quick and efficient responses to users. However, there are also some challenges and limitations to the implementation of college enquiry chatbots. These include the need for ongoing maintenance and updates, the potential for errors in natural language processing, and the need to ensure user privacy and data protection. Additionally, chatbots may not be able to handle complex, and some users may still prefer to interact.

CONCLUSION

Fastest-growing technology in history is artificial intelligence. utilizing a database that is both artificially intelligent and knowledgeable. We are able to transform virtual aid and pattern matching. This method is creating a chatbot based on the Android operating system with the help of a virtual assistant and an artificially intelligent database. A chatbot that can distinguish between human and machine speech and answers to user enquiries is something we can make. Researchers must cooperate and decide on a common strategy in order to build a chatbot. In this study, we investigated the development of chatbots and their applications across several industries. Also, there are parallels with other chatbots. The knowledge base of the chatbot should generally be brief, approachable, and simple to understand. Even if some of the commercial solutions have just become accessible, there is still work to be done in order to discover a standard method for building chatbots. In conclusion, a chatbot system for college enquiry using a knowledgeable database can provide a convenient and efficient way for students, faculty, and other stakeholders to access information about college programs, courses, and admission requirements. By utilizing natural language processing algorithms, a knowledgeable database, and a recommendation engine, the chatbot system can generate accurate and relevant responses to user queries in a timely manner. Save timing of students and teachers and also save extra manpower. Student can see all document related college like, notice, study material, question papers etc. on time to time and from any place. It is proper communication in between staff and students.

REFERENCES

[1] CHATBOT BASED ON AI Information technology professors Nikita Hatwarl, Ashwini Patil 2, and Diksha Gondane 3123 are from Nagpur/RTMNU in India. Volume 3, Issue 2 (March-April 2016), International Journal of Emerging Trends in Engineering and Basic Sciences (UEEBS), ISSN(Online)2349-6967)

[2] Chatbot Utilizing a Knowledge in Database at the 2016 7th International Conference on Intelligent Systems, Modelling and Simulation by Bayu Setiaji and Ferry Wahyu Wibowo.

[3] Chatbot, https://en.wikipedia.org/wiki/Chatbot.Schantz, Herbert F., The History of OCR, Recognition Technologies Users Association, Manchester Center, Vermont, 1982.

[4] P. Chenna, T. Rao, et al (2018). HFSS software is used to design a twin inverted L microstrip antenna for sustainable systems. International Journal of Computer-Aided Engineering Technology (IJCAET).

[5] J. Quintero, an IEEE student member, and R. Asprilla, an IEEE member Proceedings of the 2020 IEEE Thirty-Fifth Central American and Panama Convention: Towards an Efficient Voice-Based Chatbot (concapan xxxv).

[6] Rao, P.T., and Kumar, P.P. (2015,January). Twin microstrip patch antenna in the form of a staircase. 2015 saw the ICPC (International Conference on Pervasive Computing) (pp. 1-5). The Technical Writer's Handbook by IEEE
M. Young. University Science, Mill Valley, California, 1989.

[7] Rao, P. T., and Kumar, P. P. (2021). dual dual folded inverted-L antenna with a frequency-tunable circular polarisation and varactor-loaded split-ring resonator constructions. Global Journal of Communication Systems, e4715.

[8] Ly Pichponreay and Chi-Hwan Choi created the Chungbuk National University Smart Responding Chatbot based on OCR and Overgenerating Transformations and Rating.

[9] Trinatha Rao, P., and Praveen Kumar, P. C. (2020). Using HFSS, a double folded inverted-L antenna with a rectangular ground plane is designed to be reconfigurable. IETNetworks,9(5),229-234.

[10] Automated Question Answering System Utilizing Ontology and Semantic Role International Conference on Innovative Mechanisms for Industrial Applications (ICIMIA2017) by S. Jayalakshmi and Dr. Ananthi Sheshasaayee.

[11] Yuriy Dyachenko and Nayden Nenkov Articial Intelligence Technologies For Personnel Learning Management Systems 2019 IEEE 8th Internatignal Conference on Intelligent Systems Volodymyr DahlEast Ukrainian National University Severodonetsk, Ukrainev.

[12] "Development of Chatbot System for College Enquiry" by J. Rajitha and
S. Sathish Kumar. International Journal of Engineering Research & Technology, vol. 6, no. 3, March 2017.

[13] "Implementation of a Chatbot System for College Enquiry" by P. R. Ramya and M. Mythili. International Journal of Innovative Research in Computer and Communication Engineering, vol. 5, no. 5, May 2017.

[14] "Design and Development of a Chatbot for College Enquiry System" by
P. R. Praveen, P. S. Sridhar, and K. Divya. International Journal of Advanced Research in Computer Science and Software Engineering, vol. 7, no. 7, July 2017.

[15] "Chatbot Based Enquiry System for College" by S. Sowmiya and S. Sathish Kumar. International Journal of Innovative Research in Science, Engineering and Technology, vol. 6, no. 8, August 2017.

[16] "Development of Chatbot for College Enquiry System using AIML" by R. Arun and A. Shanthi. International Journal of Computer Science and Mobile Computing, vol. 6, no. 9, September 2017.

[17] "Chatbot Based Enquiry System for College Admissions" by S. S. Gupta and R. K. Singh.

International Journal of Computer Sciences and Engineering, vol. 6, no. 2, February 2018.

[18] "An AI-Based Chatbot System for College Enquiry" by N. Nidheesh et al. (2020). This paper describes the development of an AI-based chatbot system for college enquiry that utilizes a knowledgeable database and machine learning techniques to provide accurate responses to user queries.