Chat Bot based Helpdesk for Government Employees and Department

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ABSTRACT

In today's world where there is technological advancements in every aspects, efficient communication between government and the public is paramount. This research paper introduces a pioneering Chat bot-based Helpdesk system designed to enhance responsiveness and facilitate seamless information circulation within the education department and also to the public sector. Chat bot based helpdesk is focused on addressing queries from students, faculty, and the public, the system aims to expedite information retrieval and issue resolution. By leveraging artificial intelligence and natural language processing, the chat bot offers an intuitive interface for users to interact with government services, thereby optimizing the overall experience. This study explores the implementation, impact assessment, and potential benefits of deploying a chatbot within the educational domain, shedding light on the transformative role technology can play in government-citizen interactions. The findings presented herein contribute to the ongoing discourse on leveraging innovative solutions to improve public service delivery and foster a more responsive government.

Key Words*: Chatbot, Dialogflow, Education Department, Artificial Intelligence in Education

INTRODUCTION

In response to the burgeoning demands of the education sector, this research investigates the implementation of a Chatbot-based Helpdesk designed to efficiently support teachers, students, and stakeholders. With a primary focus on providing quick access to essential information, the chatbot incorporates features such as information retrieval, addressing frequently asked questions, assisting with common tasks, delivering notifications, and actively seeking user feedback. Tailored for teachers, students, and administrative staff, the chatbot aims to establish a comprehensive and user-friendly support system. Its integration across platforms, including the department's website and dedicated applications, highlights a commitment to accessibility and enhanced user experience. Beyond immediate needs, the chatbot's architecture is designed for scalability, ensuring adaptability to future growth in user numbers and incorporation of additional features. This research delves into the intricacies of deploying a forward-thinking solution, emphasizing both current applicability and long-term flexibility within the education department.

LITERATURE SURVEY

Munira Ansari, Mohammed Saad Parbulkar, Saalim Shaikh, Talha Khan, Talha Khan, Intelligent Chatbot ISSN: 2278-0181 Special Issue - 2021 (IJERT) "Artificial intelligence chatbot is a technology that makes interactions between man and machines using natural language possible. A chatbot can give different responses from the same input given by the user according to the current conversation issue".

Gayathri.V, Saranya.V, Vijetha.A, Vijey.A, SriRagavi.M, Mrs.K. Malarvizhi College Enquiry Chatbot System using Artificial Intelligence Volume 8, Issue 3 (IJSRCEIT) - This project aims to develop a college enquiry Chabot that answers any queries post by students like collegedetails, course-related questions, location of the college, fee structure etc. The College Enquiry Chatbot project is built using machine learning algorithms that analyse user's queries and understand the user's message.

V. Adarsh, B. Koushik, D. Mahesh CHATBOT USING NATURAL LANGUAGE PROCESS (NLP) Volume:05/Issue:02/February-2023 (IRJMETS) - Our system mainly focuses on implementing an online chatbot system to assist users who access websites. By using this tool, we can access files easily instead of going through different modules. Artificial 2 Intelligence methods such as Natural Language Processing, allow users to communicate with college chatbot using natural language input and to train the chatbot using appropriate Machine Learning methods.

Shreyashkar Sharma CHATBOT DEVELOPMENT USING PYTHON Volume 8, Issue 7 July 2020 (IJCRT) - A chatbot is an artificial intelligence computer program which performs communication usingaudio and video system. A person can ask any questions and chatbot will answer accordingly.

Radhika Patel, Nancy Bhagora, Pushpraj Singh, Ms Kavita Namdev CLOUD BASED STUDENT INFORMATION CHATBOT Volume:02/Issue:04/April-2020 (IRJMETS) - Cloud based student information Chatbot system is artificial algorithm that analyzes the student queries and reply as messages. In this system artificial intelligence is built to answer the query of the student. Answer are appropriate to the users queries if the user is invalid then it will notify the admin and same in answer, if answer is invalid then it will notify the admin.

Methodology

To empower the Chatbot-based Helpdesk with a robust foundation, the research commenced with the compilation of a comprehensive dataset comprising frequently asked questions (FAQs). The dataset was meticulously curated from various educational websites, with a particular focus on aggregating information from sources such as Education for All India. This approach ensured the inclusion of diverse queries that encapsulate the broad spectrum of inquiries typically encountered within the education sector.
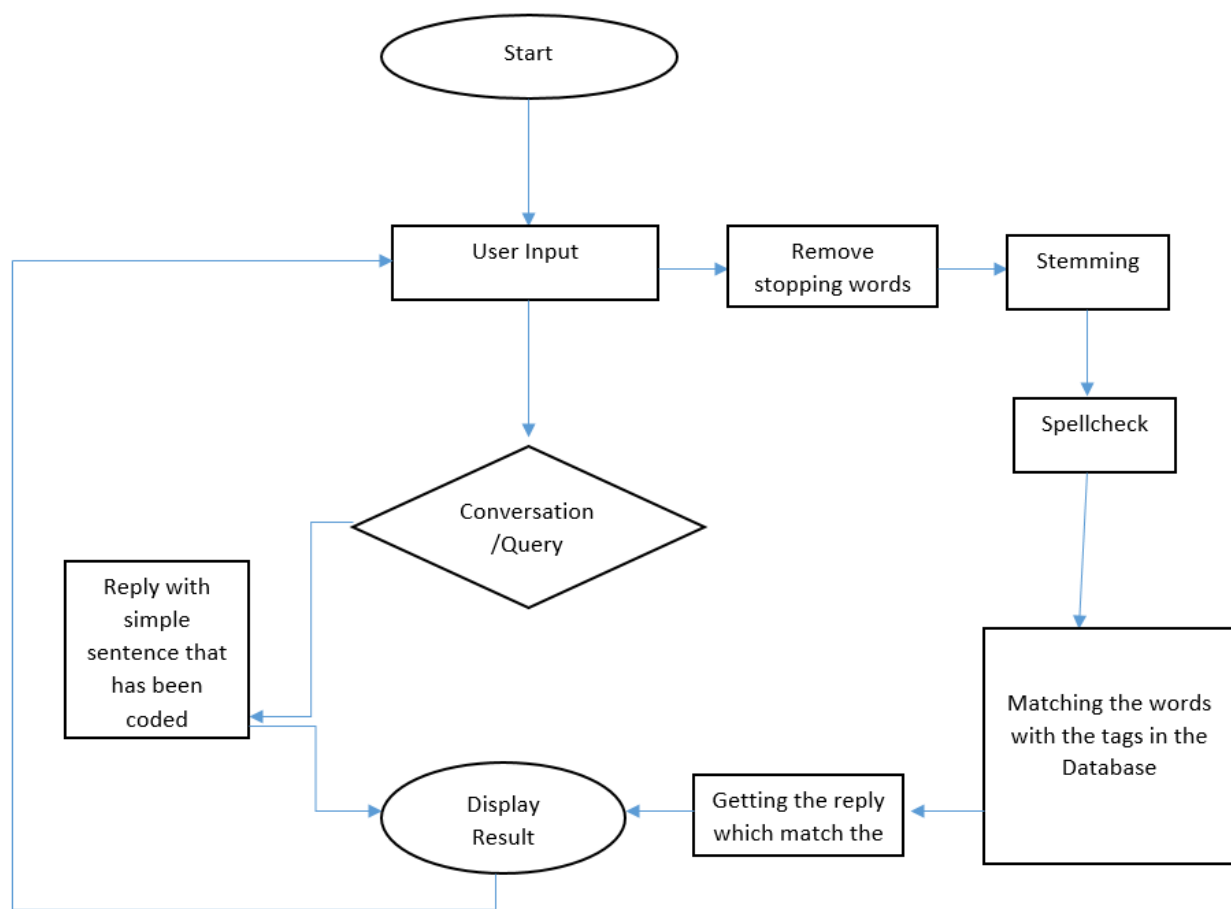
Fig: Conversational Flow: System design

Subsequently, the gathered dataset became the cornerstone for training the chatbot, a process executed using Dialogflow—a leading natural language processing platform. The utilization of Dialogflow allowed for the development of a sophisticated conversational model, capable of understanding and responding to user queries with a high degree of accuracy. The training process involved iterative refinement, leveraging machine learning algorithms to enhance the chatbot's comprehension of nuanced language structures and domain-specific terminologies.

Furthermore, the integration of the chatbot into the educational ecosystem involved careful consideration of the department's specific requirements. This phase encompassed the design of tailored conversation flows,

ensuring that the chatbot could adeptly address queries related to course offerings, schedules, curriculum guidelines, exam schedules, results, and contact information for department staff.

The methodology adopted for this research embraces a data-driven approach, harnessing real-world questions to inform the development and training of the chatbot. The utilization of Dialogflow as the primary platform underscores a commitment to cutting-edge natural language processing technologies, ensuring the chatbot's efficacy in providing quick and accurate responses to users within the education department.

CONSLUSION AND FUTURE ENHANCEMENTS

In conclusion, the implementation of a Chatbot-based Helpdesk within the education department has proven instrumental in enhancing communication and support mechanisms. The research journey began with the compilation of a robust dataset, drawn from diverse educational sources, laying the foundation for the chatbot's training in Dialogflow. Through iterative refinement and the incorporation of machine learning algorithms, the chatbot evolved into a sophisticated tool capable of efficiently addressing a myriad of user queries.

Looking ahead, there are several avenues for enhancing the Chatbot-based Helpdesk to further elevate its utility within the education department. Firstly, continual refinement of the chatbot's training dataset will be imperative to keep pace with evolving language nuances and emerging educational inquiries. User feedback mechanisms should be strengthened to provide an ongoing source of improvement, ensuring the chatbot remains responsive to the ever-changing needs of teachers, students, and administrative staff.

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