AI Based Chat Bot For FAQ

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***Abstract*—Chabots are software algorithms that can converse with members of the human community using chat interfaces. They can communicate and conduct conversations. Websites and chat apps can benefit from AI and NLP integration. AI and Natural Language Processing make the bot smarter, which results in better service for the user. Education chatbots improve the correspondence, increment profitability, and limit vagueness from communications. It make a cordial interface between a college site and its guests. By noting a wide assortment of inquiries concerning scholarly, managerial and monetary issues, and giving out significant through the conversation window. The bots can reply any students inquiry, be it related to the Registration details, General Instructions about Course registration, assignments or due dates, etc. chatbots guarantee that any data present on a college's site is accessible day in and day out to its students.**

***Keywords*— Higher education, NLP, Chatbot, Artificial Intelligence, Academic Activity, Supervised learning, Advising,FAQ**

I.INTRODUCTION

The implementation of artificial intelligent systems has been implicated by the advancement of information technology and communication. The systems are nearing excellence. Human interfaced decision support systems, robotics, and artificial intelligence expert systems, natural language processing, and many more. Even in the case of there are some hybrid methods in artificial intelligence fields as well as adaptable methods that make more complex way. Furthermore, there are hybrid natural languages and co adaptable systems that can understand human natural language. These interfaced systems is able to educate themselves and enrich their knowledge by reading all electronics articles available on the internet. As a end-user, client can ask questions to the system in the same way that could be done with another human. These systems commonly named as intelligent answering machines. Added on to intellectual answering-engines, the internet in recent times has numerous applications of chatter-boot, also termed as chatbot, which are developed for designated purposes or simply entertainment [1]. The so called application work is much easier, as the knowledge has already been educated [2]. The virtual assistant would suit the speaker's or user's input sentence with an algorithm that appeared on the knowledge- base. Also every pattern is associated with chatbot knowledge gained from multiple sources. The input statement is formulated as the chat pattern's algorithm. The chat structures denoted by the pattern-template are saved as tables in a relational database management system (RDBMS). A sentence similarity measurement score is used in the pattern matching process. The calculation method for anticipating similarity measurement scores [3]-[6]. In this paper we have analyzed various academic activity of Higher education Institution in Oman in which FAQ lists are segregated for framing chatbot features. Chatbots are categorized as an enormously important method to interact with customers, grateful to the exponential rise of the mobile facilities over the previous decade, and their popularity and adaptability are rapidly spreading. The mobile devices substitute the way we communicate and enable sustainable learning in multiple settings [7]-[9].

II. RELATED WORK

Natural language processing (NLP) is a computer based luxury that permits communication between user -to-computer or vice versa and computer-computer or machine- machine using human natural languages. To comprehend natural language, three analyses are used: parsing, knowledge-based mechanisms and semantic interpretation. Parsing is an examination based on sentence syntax frameworks. A demonstrated Chatbots are classified into several types based on how they function. The majority of chatbots are domain- specific and designed to meet a specific need. For example, a chatbot could be created to answer questions that a prospective student might have before enrolling in a university. According to searches, there has rarely, if ever, been a study conducted to develop a multi-use chatbot capable of assisting users in multiple sectors. So far, one of

the best possible usage of chatbots by universities has been to assist students to enroll in courses. Institutions globally have recognized this advantage and have begun to use the simple platform to improve signups among current students. Chatbots are now in high demand among the market, end-users, and even suppliers. These include Smart Chatbots and Simple Chatbots. The Intelligent Chatbot is the most popular and has more features. Most corporations, institutions, and even individuals are looking for Smart Chatbots since they make human-computer connection easier. That includes universities. Having a Chatbot on the university website can improve service and interaction between stakeholders and the university [10]-[11]. No general or fundamental components are required before constructing a Clever Live chat for University Websites. It is not uncommon for students to be confronted with challenging options regarding their academic preferences, completion plans, classroom planning, and the degree of difficulty of the curriculum when choosing elective courses. Having discussions with academic advisers and peers is commonly regarded as a beneficial approach for gathering both formal and informal information, rearranging priorities, and reaching an agreement on a decision [12]-[15].

III. METHODOLOGY

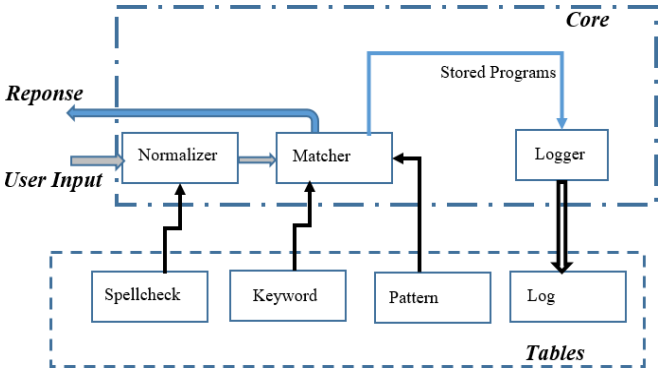

Figure 1. Chatbot Core Design

Figure 2 illustrates the classification of the chatbot framework with respect to responses and conversations. Retrieval based chatbot is employed in many of the academic web portal. Most of the FAQ loaded in in data base. Education institutions maintain the securable data whenever they prefer chatbot .Common guideline and information is shared in the beginning of the chat. Reponses delivered to user based on their log in credentials. Following information asked to verify the user info and security purpose (Student ID/Register Number, College Email, Registered mobile number, etc.)

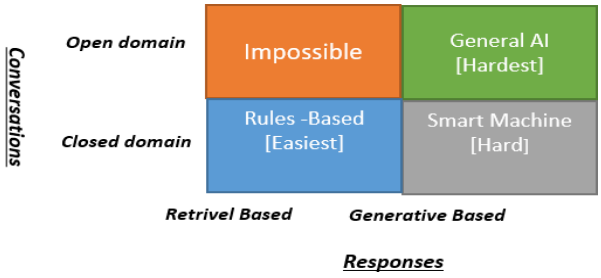

Figure 2. Classification of chatbot framework

IV. Existing System of academic Web portal in CUIMS

Advise and mentor students as a segment of their teaching responsibility. The faculty is an efficient multitasker, who can juggle between the academic responsibilities in an efficient note [16]. The primary objective of a faculty is to morally discipline the student community in a best possible way. The Clare is empowered with the ideology of the lecturer and the interaction from the students. The attendance ledger authenticates the physical presence of the students. Each faculty had been given around 25 advisees which involve a lot of conversations, grievances, extensibility about credits, required to complete the tenure in a successful manner. The advisors support the Students by educating them regarding the difficulty level of the courses, teaching slots, grading methods etc. The young people who enter into the specific departments suffer from routine trauma about the new environment and move disciplined people around. The adviser takes the responsibility of easing out the cold pressed environment. The challenging task of a lecturer includes is to grab the attention of the whole lot. The quizzes are streamed online with the flexibility of time given to the students. The assignment are rolled out for each outcome and the grading is done based on the originality in contribution. The experiments for each outcome is tailor made and customized by a team of experts and students are benefitted. The midterm exam and final exam quantify the understanding of the student on the particular course.

Table 1. Web app incorporated in web portal

E-learning Portal	College Information Management System	Staff Portal
Student Portal	Library Info	Examination
Administration	On the Job Training	Staff Directory

Table .1 represents the mostly used web app which is incorporated in CUIMS website portal. User or students browse the information in concern web app for clarifying their enquiry. User Log in credentials also mandatory to browse the concern app

IV .CHATBOT FOR UNIVERSITY RELATED FREQUENTLY ASKED QUESTIONS (FAQ)

As most of them are engaged in meetings every day about adapting and smooth conduct of college operations due to the pandemic, the faculty and senior administrators are struggling to handle the calls from students with various academic based questions during COVID-19 online transition. Fortunately, most chatbot service providers have pre-programmed their self-help chatbots with basic CDC and WHO information. Staff can focus on other related issues whereas the assigned chatbot can respond to redundant questions by following a pattern frequently asked questions and relevant answers into the chatbot. Automated conversational interfaces are now becoming progressively popular as a result of the time savings they provide. Bots are able to respond immediately to questions and concerns. When it comes to promoting new students, colleges and universities need to be quick to respond to inquiries. Questions regarding courses, fees, and accommodation are on everyone's minds as the new academic year approaches. Admissions offices are under a lot of pressure at this time of year because of the large number of inquiries they receive. As a result of this issue,

chatbots are a remedy. They are extremely convenient and simple to use, with the goal of providing automated responses to frequently asked questions while avoiding uncertainty and delayed responses. Retrieval-based chatbots (Figure 3) operate on the graph or directed flow principle. The chatbot is programmed to provide the best response possible from a database of predefined responses. To determine the most appropriate response, retrieval-based chatbots employ techniques such as key

phrase matching, machine based learning, or deep learning.

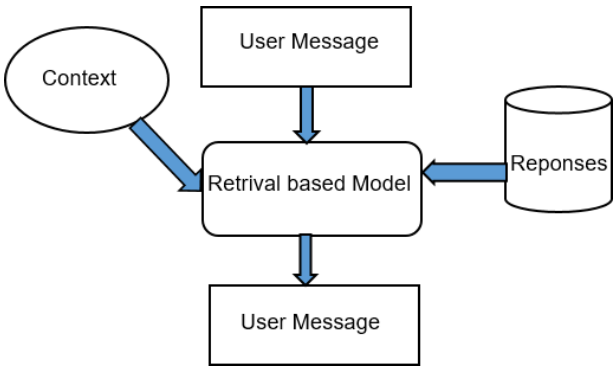

Figure 3. Chatbot Core Design

To determine the most apt response, on retrieval-based chatbots employ techniques such as keyword synonym, machine based learning, or deep learning algorithms. Whatever technique is used, these chatbots only providepreset responses and do not create new output.

V .PROPOSED FAQ LIST TO BUILD UNIVERSITY CHATBOT

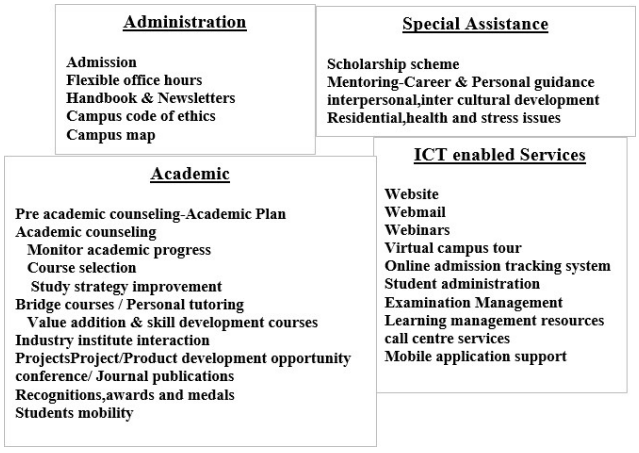

Figure .4 Academic Chatbot Domain coverage

Fig 4 describes the various diverse avenues of the chat-bot permissible to be trained in an educational field. Compilation of bridge courses, personal tutoring facility, campus road map, webinars and online workshops are the few arenas that could be trained for a chat-bot usage. The most intermittently asked questions are enlisted in the table, most of these are registration based analogical questions which demand a categorical answer which could be given by a trained chatbot, The chat-bot should be trained with the knowledge of appropriate specific answers on par with that of the human who is into such a task.

Table 1. FAQ and Response

Questions	Retrieval-based Chabot Response
What is the method to drop a course online?	Response is delivered based on authentication of students info and recorded
What is the method for postpone a course online?	Auto generated reply based on the student details(condition and norms)
What are the pre requisite for particular course?	Auto generated(course name, ID, Semester)
Course theory and Practical weightage	Auto generated(course name, ID, Semester)
Attendance percentage of each lecture	Subject code and Name
Section availability	YES /No/Contact info
Time slot availability	YES /No/Contact info
Registration schedule in particular semester	Date and info
Grade requirement to clear level	Response generated based on students details

Proposed Chat-bot Screen Window

Learners can chat with the trained bots immaterial of the time, which is especially useful for international candidates who reside in varied time zones.AI embedded bots also used to collect huge amount of data during their interactions with clientele. This data has useful information regarding student behaviour with relating to information that can be found on an university site, proving to be a handy tool form accessibility and improvement, indeed a valuable asset for registration and enrolment teams.

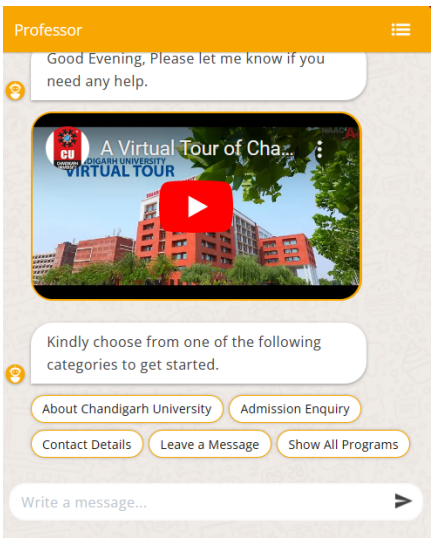

Figure 5. chatbot window screen

In order to better serve our students, the webservice (Figure5) will help academicians build strong relationships with them and identify pupils who may need extra help.

CONCLUSION

Chatbots can offer a variety of solutions to higher education institutions. Chatbots are an extremely effective way of communicating with a digitally fluent generation, from standardizing the course-finding process to delivering information about the university to educational support and even helping students in their daily operations in life. Chatbots are profound to operate by dual or singular means of machine learning or instructed or programmed guidelines. This progressive technology is a multi-crore enunciating business which is proved to be a boon in the forthcoming era. The education oriented chatbot discussed in this literature is placed with limited conversation and does not involve in making self-decisions.

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