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# SupportBot: An Artificial Agent Useful for Gathering College Details

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**ABSTRACT:** SupportBot is a chatting application which enacts as an automated online assistant as a user-friendly tool that aids in interaction between the user and the artificial intelligence wherein the user may be a student or a faculty or any outside participant. In this application, two modules serve the institution which is general investigations and notifications. The investigation section is a query-solution feed which is about our college that is built using artificial intelligence algorithms which analyzes and understands user's queries and apt responses are fed back for the raised queries through this artificial conversational entity. In notification section, the latest rapid events get popped up to alert the user.

**KEYWORDS:** assistant; analyze; extracts; alert; intent and entities.

### I. INTRODUCTION

SupportBot also known as Artificial Conversational Entity is an automated program that interacts with human in a text based format that is thoroughly understandable using text or spoken language using artificial intelligence techniques such as Natural Language Processing (NLP). As it is an institution oriented application, the general college investigations and the latest notifications are facilitated. This idea is implemented in an android application which makes it handy enough for the user to interact with the institution. In the chat interface, different categories are available from which the user have to select the particular option that would answer their query. As the user gets the appropriate answer for their query, it replaces the need for direct investigation to the college. Each category available in the query section will lead to the related details that would feed the required details to the user. The reply to the user is done with the help of effective Graphical User Interface (GUI). Figure 1 shows the general interaction of SupportBot.

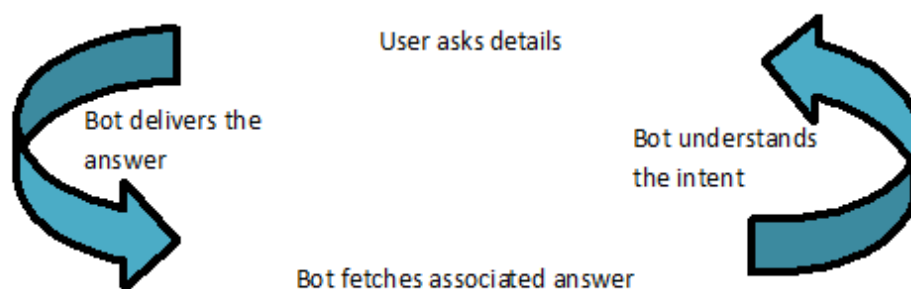


Figure 1: General interaction of SupportBot



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In the notification channel, the latest events get displayed. In this section, the number of notifications gets displayed and the viewed notifications are made to a fade color whereas the un-notified alerts are highlighted. If required, the notifications can even be sent as a message if enabled through an option. The admin takes the responsibility of inserting the latest events in the notification part through the login enabled. The notification column in the module could be updated only by the user and none of the users have the permission to edit it.

## II. RELATED WORK

[1] The aim of this paper is on making a conversation between human and machine. Here Chatbot is based on the text based user interface which allows the user to type commands and receive text as well as the speech responses. They are usually prominent services which remember previous commands in order to provide functionality. This enquiry Chatbot is been developed using artificial algorithms that analyze user's queries. The response is based on the principle of matching the input sentence from the user. The system analyzes the question and then answers to the queries. The system replies using an effective Graphical User Interface as if a real person is talking to the user. This Chatbot has two parts namely core and interface. Here are some operations like parsing, tokenizing, stemming, filtering are carried out in NLP technologies. Despite large number of users, the system can be used securely when it is integrated with the popular web services.

[2] This paper is about Chatbot web application which gives response to the query of the college student. Here the student can query based on any college related activities through this system. The user is not in need to go to college directly. The system analyses the question and answers it with the help of artificial intelligence. Here Graphical User Interface is used where we feel like speaking with the real person. In this system user have to register and has to log in. After login user can query about annual day, sports day and other cultural activities. This system helps the student in updating their daily college activities.

[3] This paper describes a proposal that is been carried to explain the Chatbot design which is implemented to solve the problems of students faced before and after the admission. Here keywords based on human-computer dialog system make the Chatbot possible for the user to chat with computer using natural language, i.e. in English.

[4] This Chatbot is basically for creating a platform where students can learn and clarify their doubts. Here they included the concept of Natural language processing and machine learning concept. This Chatbot acts as a mate for students where they can approach any time they want and ask any questions. And this software solves all their doubts and will scale down their problems, analyze them and make sure that the student is now cleared with the answers displayed.

## III. METHODOLOGY

The application starts with a greeting from the bot which leads to a display in which different categories are available from which the user could put their queries into. Though, the type of question raised may vary from user to user, which may be as simple as a keyword or as detailed as an appropriate question. [1][3]All that matters is whether an apt solution is fed back in bot interface to the user, no matter in which format the query has been put forward. The artificial intelligence focuses on towards that one particular concept which is the chosen category. It limits its idea to only that one topic and other irrelevant questions if framed would sound invalid. Figure 2 shows the SupportBot functioning. [2]If the user input is relevant to intimation then the query will be passed to Natural Language Processing tool by SupportBot. The bot interface sends helpline to modify or reframe the query if any unrelated inquiry was raised. The NLP takes the sentence to remove redundant words since there are many phrases to compare. Moreover selecting the specific intend in the question is important to proceed and the responses to be given is said to depend upon the entities that is decided by tool. [7]Finally they are compared with the data which is inserted by admin in the storage area where the response is mined from. After completion of search the predefined answers are displayed to the user rapidly. It will not take much time to come back with an answer.

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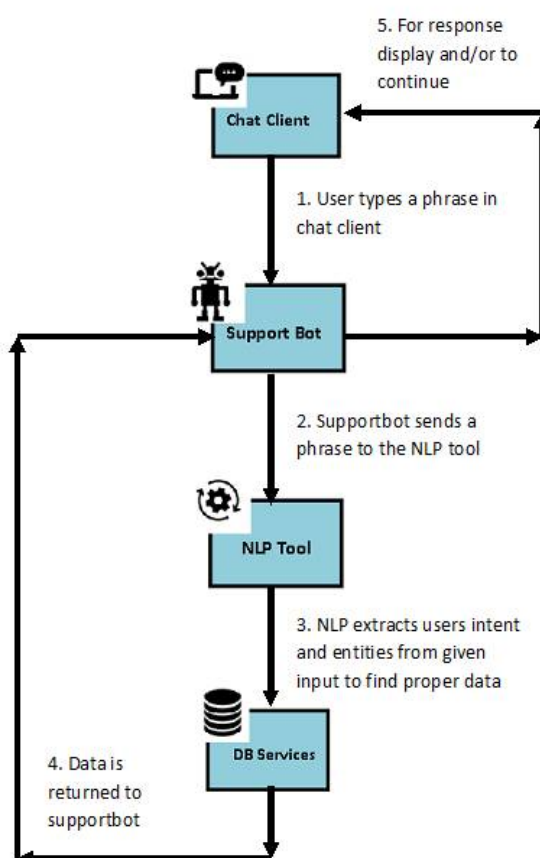


Figure 2: Working flow of SupportBot

For instance, consider one simple query. E.g.: When is the internal exam scheduled? In this question the intention is to know the “date of exam” and more specifically entities chosen are “When” & “internal exam”. With the help of these key terms, the reply is traced to display.

[5] Another part of our application is the online notice board that announces events that shares the information to be known. This is said to be issued by the administrator and can be viewed by the students and the teachers as well. The application will have the following modules:

- Chatting Interface: The queries will be asked in this module and corresponding responses are viewed.
- Notification Alert: The events, circulars will be displayed in this module.

Figure 3 shows sample conversation between User and SupportBot. Left side aligned messages are SupportBot responses and right side messages are the user asked inquiries. The replies from the bot are indicated along with a bot icon. This aids to a cosy conversation between the user and the bot. In case, if the raised questions are not detailed enough,



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the bot comes up with a question that would probably make the user reach out the expected query in an exact way which makes it convenient for the bot to search the corresponding answer and feed the same.

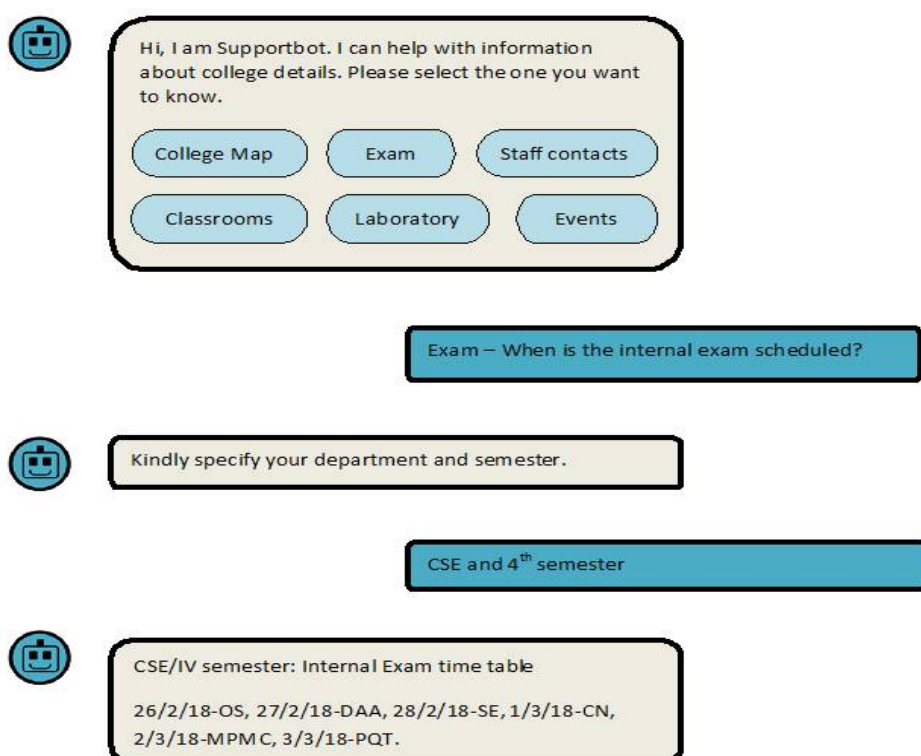


Figure 3: Sample conversation in the application

## Query Extraction

The text received from the user as a query is separated in order to identify that particular entity which would actually answer that question. [4][6]The required keyword is snatched from the query that is typically more than enough to answer that question. It might be one single word or sometimes even a group of words that are used as keywords. It thoroughly depends upon the question framed. Apart from this, the performance of the artificial intelligence does matter for this enquiry section. Figure 4 describes about stages in extracting the queries.

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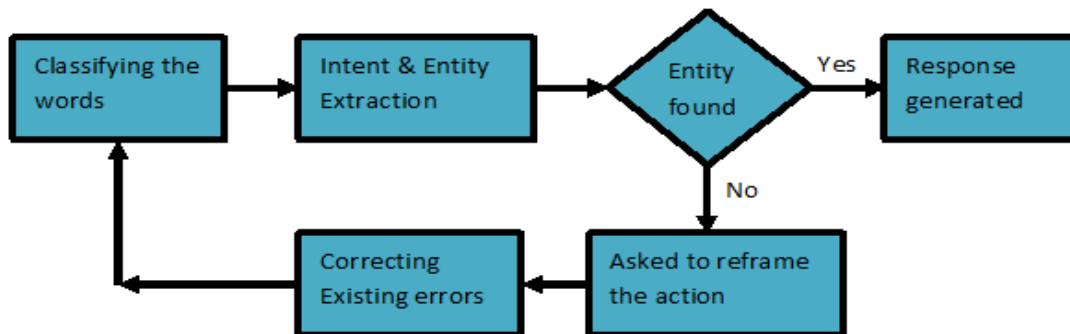


Figure 4: The stages of query extraction

The action of choosing over the apt keyword among the many is in the hands of the artificial intelligence. [8]The working process has got a huge background task at the back. The raised question is fetched through the interface and fed to the artificial intelligence wherein pattern matching is performed that would relate word matching if an as a keyword with which the answer for the query is fetched from the data storage and updated back to the user over the bot interface.

## IV. RESULT AND DISUSSION

The accomplishment made out of this application is in rendering the best guidance sought by the user in terms of answering their queries and availing them with the recent notifications if any. The SupportBot architecture integrates a language model and a computational algorithm to emulate information via the chat communication interface between a user and a computer using natural language. With the advent of data-mining and machine-learning techniques, better decision-making capabilities, availability of corpora, robust linguistic annotations, Chatbot have become more practical in daily life applications such as help desk tools, information retrieval tool and automatic telephone answering systems, advertising, and tools to aid in education, business and E-commerce. Being it a widely accepted technology across many applications, the introduction of SupportBot to an institution level is rated the best as of to the user's expectations wherein the user may be a student or a faculty or any unacknowledged people to the institution.

## V. FUTUTR SCOPE

The further idea of this project is to include certain visually impaired features for the physically challenged people. Our entire motive is to help this app reach out to all participants though limited to the institution level and help them at the best. This is made possible by including certain features such as speech recognition for the visually challenge. That is, to bring out the human conversations in its natural format including text or spoken language using artificial intelligence techniques such as Natural Language Processing (NLP), image and video processing, and audio analysis. Apart from this, the artificial intelligence implemented in this adapts to smart learning which adds to the best conversing performance the next time if the right delivery of content fails at one instant. Though this feature is available within the same, the motive is to take it to an advanced level.

## VI. CONCLUSION

SupportBot is a tutor-kind to the needy. It serves as the best mentor in answering the query and in feeding up with the latest updates. It is more preferred as it owes to timely interactions which ensure the apt delivery of answers in the conversational flow. The Chatbot plays a major role in rendering the primary touch point over services to the users. It aids in hassle-free conversation, keeping it user friendly which makes it more supportive enough for the users and hence the



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name, SupportBot. Moreover, it replaces the need for wandering in and out of their college in order to get their query answered. Being it a user-friendly app, the communication goes at ease. In this way, the proposed application will help the institution to ensure quality service provision as well as the user satisfaction with minimized human effort.

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