Receptionist Chatbot

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***Abstract*—** Today, many of those working front-of-house as receptionists, call handlers, and in administrative positions face a variety of challenges as the workplace remains in a state of flux. Chatbots are intelligent computer systems that mimic human speech to provide automated online assistance and guidance. Many industries have started using chatbots to offer customers virtual assistance because of their increased benefits. A rule-based chatbot will search for certain keywords in user-supplied inputs. The keywords will be used to determine what action the user desires (user intent). Once the intent has been detected, the bot will select a suitable response. With the help of this application, manual labor is drastically minimized. They have had a direct influence on saving time in corporate operations, improving the experience, and saving money for those that implement them.

Keywords*— *Chatbots, Rule based chatbots

I. INTRODUCTION

A. General

A receptionist is a crucial component of every firm. When interacting with the business, they are typically the first person a client or customer encounters. Serving several people in a single location quickly and effectively presents a significant administrative challenge at every college. The most challenging component is that the individual must be coordinated between administrative responsibilities such as controls and documentation, as well as continually attending to the people who come at the location. To comprehend the significance and role of chatbots in modern life. A chatbot is a piece of computer software that is used to create natural language interactions between a user/human and a computer/system.

Chatbots converse with clients in a discussion based on human input and respond to clients. It gives the user the impression that they are conversing with a human being while in fact they are chatting with the computer. The focus of this project is to automate certain front-desk works and thereby, reducing human efforts.[7][8]

B. Chatbot

A chatbot is, at its most fundamental level, a computer program that mimics and processes written or spoken human conversation. This makes it possible for users to converse with digital devices as though they were speaking to a real person. A chatbot can be as simple as a programme that responds to a single line of text to answer a straightforward question, or it can be as complex as a digital assistant that learns and grows to offer ever-more-tailored services as it processes and gathers data. When classifying based on the input processing and response generation method, the manner in which inputs are processed and responses are generated is taken into consideration. The rule-based model, the retrieval-based model, and the generative model are the three models that are used to produce the appropriate responses.[6][9]

C. Rule-Based Chatbot

The Rule-based Model chatbot follows the type of architectural design that was used by the vast majority of the earliest chatbots, including many internet chatbots. They do not create any new text responses; instead, they choose the system's response based on a set of predetermined, established rules and lexical analysis of the input text. Rule-based chatbots are great for simple questions with small numbers of users, such as asking for a place's navigation instructions or the college's counselling code. There are a number of advantages to using his type of chatbot, including:

- *The chatbot doesn't require a lot of training which makes the execution cycle quicker and less complicated.*
- *Since the technology and implementation are less complicated, prices are frequently lower as well.*
- *You can control the chatbot's behavior and responses by pre-defining its responses and structures.*

The chatbot uses knowledge that has been manually hand-coded, categorised, and then presented using conversational patterns. The chatbot can respond to a wider range of user input with the help of its more extensive rule database. This type of model, however, is not impervious to typographical and grammatical mistakes in user input. The majority of the present study on rule-based chatbots concentrates on answer selection for single-turn interactions, which simply considers the most recent input message. A more human- like chatbot technique called multi-turn answer selection chooses a response by considering prior portions of the dialogue that is pertinent to the context of the entire conversation.[10]

The objective of the project is to develop an automated reception system that can deal with a large number of guests at once. By providing the necessary information to the students or their parents, this chatbot system lessens the workload of the receptionist and the department's need to continue responding to all the students' inquiries. Our chatbot application enables users to quickly learn about the college's admissions procedure from any location with an internet connection. It also shows you the college's entire campus map for navigation, provides a general overview of

the institution, and provides quick details on your specific bus route.[11][12]

II. Related Work

Rafael Mellado-SilvaAntonio et al.[2] discussed the way businesses interact with their collaborators on the inside and with their customers on the outside have changed dramatically thanks to chatbots. They have caused business processes to run more quickly, improved user experiences, and cost savings for those who implement them. At the educational level, several virtual assistant experiences have received praise, and research on how the tools are used to impede students' learning outcomes is showing promise. The use of a rules-based chatbot with decision trees to teach accounting students about tax control procedures is described in this paper. The study focused on remote learning because of COVID-19. The outcomes of this experience are promising due to the complexity of the content and the lack of innovation in existing teaching subjects in this area. In comparison to other remote learning strategies, the students' learning generally improved.

Al-Hanouf Al-Ajmi, Nora Al-Twairesh [4] discussed about Rule-based and data-driven methodologies are commonly used to design Dialogue Systems (DS's). While rule-based DSs rely on a preset set of rules and keywords that are to be recognised in the user's utterances, data-driven DSs need a vast amount of training data. However, due to a shortage of training data for Arabic task-oriented DSs, the rulebased technique has often been used to construct Arabic task-oriented DSs, despite the data-driven approaches' more encouraging outcomes. In this research, we suggest a textbased flight booking DS that can handle consumer utterances using a hybrid rule-based and data-driven approach. The Wit.ai's natural language interface was utilised in the construction of the proposed DS. The Wizard of Oz approach and the DS intentions were used to configure the discussion flow.

Siddharth Gupta, et al.[3] talked about portrays a website-based chatbot linked to an e-commerce website. This chatbot can facilitate interactions with websites. Here, the bot Understands the users and talks to them in simple language. Among various products with different characteristics. chatbot helps you decide which product is right for you. This is especially useful if you haven't narrowed yourself down to product standards. Its function is basically an Automated online assistant. They use RiveScript, MySQL, and PHP in the project.

Jagdish Singh, et al[1] talked about the term "conversational agents," also known as "chatbots," refers to programs that use natural language to communicate with their users. Chatbots are experiencing a new revival and increasing in popularity as a result of the significant foothold that messaging applications have begun receiving. The implementation of a rule-based inquiry chatbot geared specifically toward Asia Pacific University (APU) students is the primary focus of this paper. The "APU Admin Bot" chatbot, which was put into place to replace a significant portion of student interaction with the administrative offices, aims to give students answers to their inquiries more quickly. The rule-based pattern recognition technique is used to programme the chatbot to react to a particular set of words, phrases, and even actions. Certain words, phrases, and even actions cause the chatbot to respond with a whole range of options using a rule-based approach to pattern recognition. Instead of using conventional programming languages and architectural frameworks, the implemented chatbot relies on a messaging platform and a code-free authoring tool. It is entirely constructed using the Chatfuel platform and is hosted on Facebook Messenger.

Naing Naing Khin and Khin Mar Soe[5] discussed Automated chat interactions between humans and chatbots are conversational systems. It is designed to act as a virtual assistant, answer questions, provide driving directions, and act as a human companion in smart homes, among other things. To obtain the required responses, the artificial intelligence (AI) algorithms are utilized by the majority of chatbots. In this paper, they present the design of a university chatbot that responds to user inquiries about university information in a timely and accurate manner. This is the first university chatbot that uses Pandorabots as an interpreter and is based on Artificial Intelligence Markup Language to inquire about school information in the Myanmar language.

III. Methodology

This is a Rule-based receptionist chatbot mainly built for community assistance inside the campus. It automates some specific tasks of the receptionist like the admission enquiry where the chatbot asks the student to create an admission profile and that will be intimated to the admission department once the form is submitted, it is taken care of by the concerned department. The modules used in our chatbot are briefly described in the forthcoming topics and the system workflow is also discussed. Fig 1 represents the Architecture Diagram.

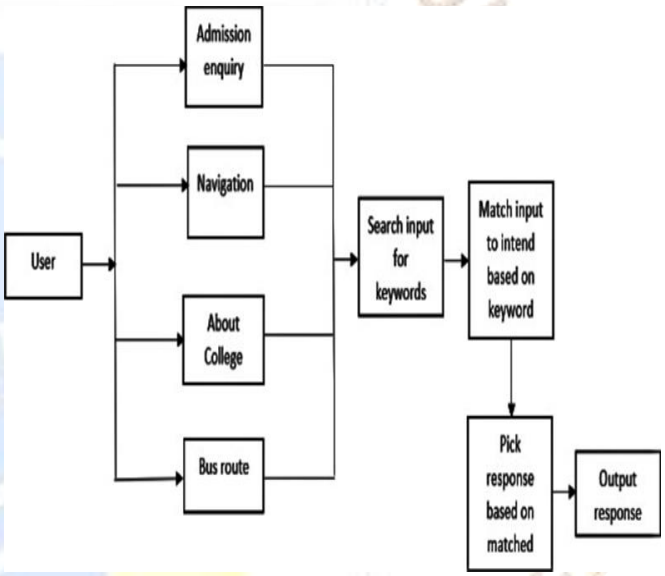

Fig 1. Architecture Diagram

A. *Admission Enquiry*

The Admission Enquiry Module provides details on admission, the college's counseling code, and information on placement and eligibility. In the rivescript, the word "admission" is used as a keyword for the module, and the keyword is scanned in the user's input phrase. The sub-menu with the categories is then displayed. In the Admission Details section, the user is prompted to create an admission profile using the provided Google Form link. The Google form link is given as a hyperlink within the text "click here." The admission profile is two pages long. The first page requests basic information about the candidate, such as their name, parent's or guardian's name, address, phone number, and so on. The second page displays the options and inquires about the students' 19 preferred courses. Following the creation of the admission profile, the admission department will be notified of the responses. These multiple responses can be combined and viewed in Google Sheets for a better understanding. Other features, including the counseling code of the college is displayed, and to know the eligibility and placement criteria, an anchor tag is used that redirects to the college website for detailed information.

B. Navigation

The navigation module provides routes to specific destinations and location-based information on buildings, roads, and other campus facilities. We've included a miniature college map to help you find your way around campus. Using an HTML img tag the route map image is displayed along with the textual directions. The navigation is narrowed for particular places such as way for the Auditorium, Central Library, Mess, Boys Hostel, Girls Hostel, and also departments: CSBS, CSE, EEE, ECE, CIVIL, MBA, and AI&DS. It enables individuals to quickly and simply navigate the college campus. The word navigation is used as keyword for the module in the rivescript, where the keyword is scanned in the user's input phrase, then drops down the sub-menu with the categories of list of places in the campus.

C. About College

This about college module provides a brief overview of the college foundation and for more information, a hyperlink has been given that redirects to the about page of the official college website. The module in the rivescript that is searched in the user's input phrase uses the keyword "about college". Following that, The redirection link will lead you to the college website, where you can learn more in-depth information about campus life, which is then displayed to you.

D. Bus Routes

The Bus routes are often confusing and hard to find. It's not just the bus routes themselves that are confusing, but the whole bus system. The keyword "bus" is used for the module in the rivescript, which scans the user's input phrase for the keyword. To make it simpler the bus route module helps to identify the bus routes with respect to the bus numbers for the destination and also displays if multiple buses are available for a certain location. The sub-menu is displayed with various arrival destinations. It allows them to know exactly where the places are located and it provides them with a sense of security and comfort, knowing that there is a specific bus route that they can take.

IV. Results and Discussions

In this paper, the following pages are designed, Fig 2 represents home page, fig 3 represents the menu of the webpages. Fig 4 & Fig 5 display the admission eenquiry and resultant information of admission enquiry, Fig 6 represents navigation, fig 7 displays the PEC map, fig 8 displays the details about college and fig 9 display the bus route.

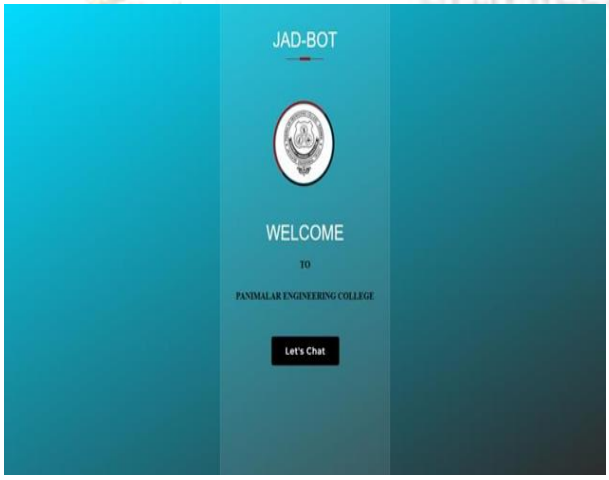

Fig. 2 Home Page

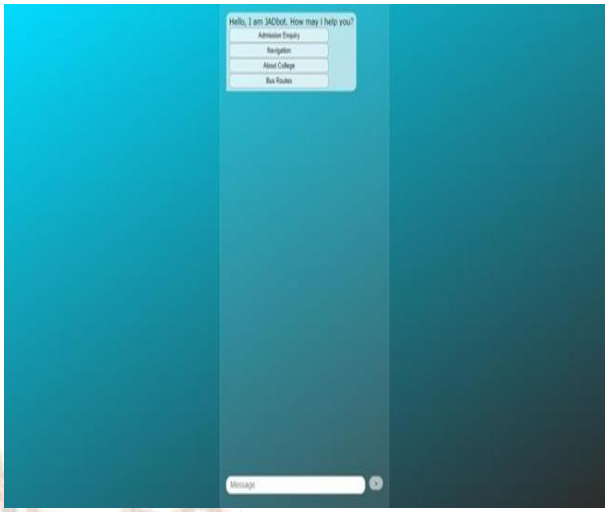

Fig. 3 Menu

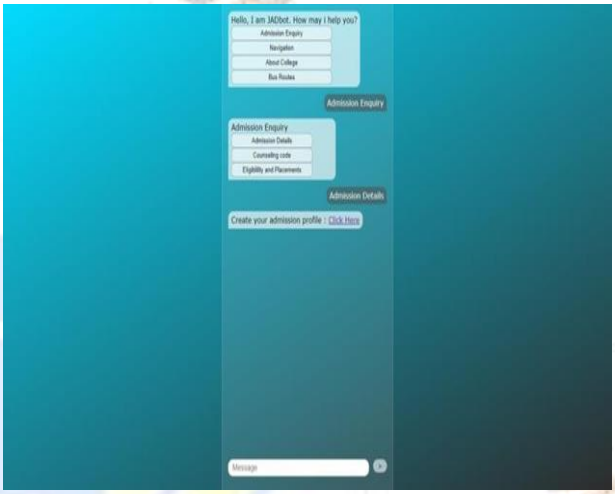

Fig. 4 Admission Enquiry

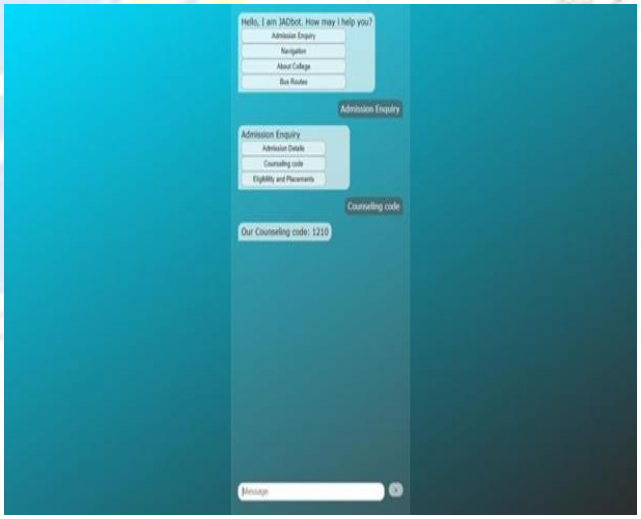

Fig. 5 Resultant Info of Admission Enquiry

Fig. 6 Navigation

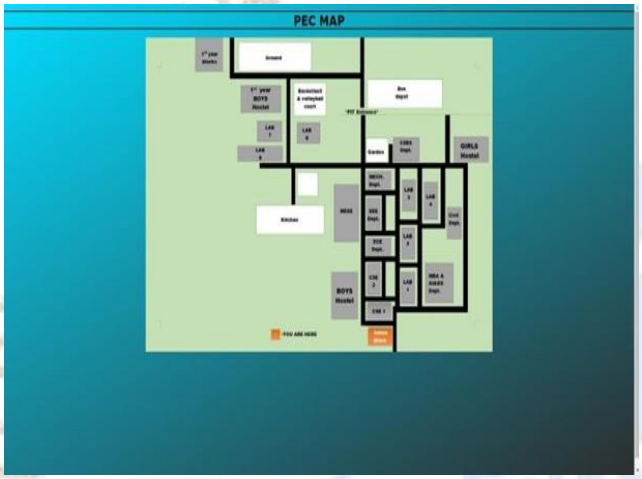

Fig. 7 Display of PEC Map

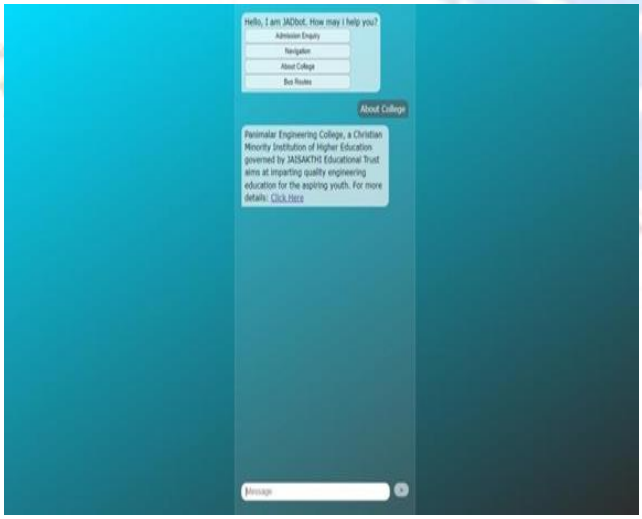

Fig. 8 About College

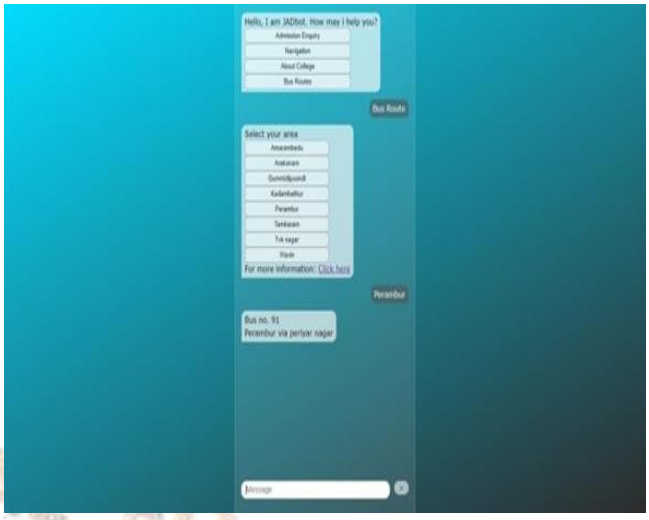

Fig. 9 Bus Route

V. Conclusion

This chatbot is helpful in reducing the receptionist's efforts and provides an user-friendly assistance. It will be a new way of approach for the visitors in accessing the front desk of an organization. Rule-based chatbots are a simple and effective way to create a chatbot. They are easy to create and can be deployed quickly. The RiveScript chatbot was an excellent option for our chatbot requirements due to its numerous features and overall ease of use.However, it could be improved in a few areas.For instance, it would be helpful if chatbot responses could be saved and used in subsequent conversations.In addition, it would be nice if the chatbot could recall previous interactions so that it could respond more precisely.Overall, we thought the Rule-based chatbot was an excellent option for our requirements and would recommend it to others.

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