Outbound Calling Bot For College Admission Using Robotic Process Automation

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Abstract : Robotic Process Automation is a method through which a straightforward to complicated task gets machine-driven with the assistance of RPA Tools. One of the best tools in today's market is UiPath. UiPath has been named the Leader by Forrester with the highest potential scores in Strategy and Market Presence. It helps to automate repetitive/redundant tasks with the help of drag and drop functionality and eliminates human intervention. We are using the UiPath tool for the creation of this outbound calling bot. The communication of the faculty of department with the students is performed manually and it's an awfully time intense procedure. The chance to speak on a matched basis is highly valued but with many hundreds of applications each academic year, one-to-one conversations aren't feasible in most cases. The communication would require a member of faculty staff to expand many hours to seek out suitable answers and get in touch with every student.. The project aims to cut back the burden on the head of admissions, and probably alternative users, by developing a convincing Outbound call bot.

Keywords - **Voice Bot, Outbound Call, Robotic Process Automation(RPA), College,Student,Ui Path..**

I. INTRODUCTION

The purpose of this research is to contribute to the solution of the problem of direct communication between applicants and the College.It will definitely prove helpful to many customer service,sales and marketing sectors. It boosts the functionality of the many colleges. It will automate college admission enquiry using RPA ui path.

In spite of the fact that the admissions process works properly as it is, it is very troublesome and time intensive to contact a member of staff of the College and vice versa. However, the problem would be partially solved if the applicant could talk to a convincing voice bot, able to respond to their concerns with information about admissions, booking accommodation, paying fees in instalments and what pre-sessional courses are on offer. So we Design and Develop an outbound call process solution using RPA UiPath where the robot makes a call to the Students for admission in the College and receives their feedback. Once the feedback is received then the robot saves that feedback in the database in the name of the Students.

The aim of designing this solution is to save the time & effort of a College and Faculty in making calls, surveying students and adding it to the database.The Traditional way of enquiry was lengthy and time consuming with less efficiency. Our Project to create {a school|a college|a university} voicebot would undoubtedly have a bright scope as this might bring a modification at intervals the approach of interaction between faculty and students. Hence we are motivated to Automate the Admission Enquiry vai telephone bot.

II. RELATED WORK

Prithvi Vasireddy [1] created an autonomous bot that could recommend users a healthy diet based on their specifics like height, weight etc. By collecting user data, a diet recommendation bot on automation is created anywhere that is cost-effective and works at a very fast pace with lowmaintenance.This bot can further be improved by maintaining a more curated database for each meal and suggesting users food as a basis of breakfast, lunch and dinner. Meal planning can be very complex. However, by adding additional equations besides macros or (macronutrients) and caloric needs(like balancing of vitamins and minerals), higher precision is achieved and a more effective meal recommendation as compared to an 'actual' human dietician. This way, an efficient, robust, cost -effective model is created.

Sangeeta Kumari ,Zaid Naikwadi,Akshay Akole and Purushottam Darshankar [2] have designed Chatbot through which the human and computer can interact .They are using the Classification of Questions method for solving this problem. Questions submitted by users through web applications can be divided into two parts either it is a FAQ question or it is a transactional question.Proposed application is accessible to customers easily and gives response to users anywhere anytime. Chatbot not only gives responses but also self-learns and improves itself in order to improve the quality of service.

S.Revathy,Niranjani.R and Roslin Kanushya.J [3] have developed a system that offers answers and solutions for audit and treating patients after combining descriptions of the illness and the symptoms, diagnostics, predictions and prescription. A Voicebot using Multinomial Naïve Bayes Algorithm is designed. It is used to analyze the queries given by the user and find the probability, which acts as a key that hits the Database to get an output. The uniqueness of the proposed system is that it can interact with the bot via speech.

Iosif Itkin,Andrey Novikov and Rostislav Yavorskiy [4] stated that an important property of intelligent virtual agents is their capability to acquire information from their environment as well as from available databases and information services. Software systems become more and more complex and life critical. In order to keep their quality up on the necessary level we build software to test software.

Harshala Gawade,Prachi Vishe,Vedika Patil and Sonali Kolpe[5] proposed methodology makes use of both qualitative and quantitative perspectives, and includes a broad array of approaches such as literature reviews, expert opinions, focus groups, and content validation .The proposed system will have the following modules:A] Online Enquiry: Students can enquire about facilities and query related to exams, academics, fee structure, etc. Students can also ask questions related to placement activities. B] Online Chatbot: The result can be shown in the form of images and card format or in text format. The query will be answered on the basis of questions asked and the language model built and also the response media created. Users that want to enquire about the college at the time of admission or any competition held in the college can query the chat-bot.

Pruk Sasithong, Ye Moe Myint, Chalita Kriangprapakit, Chalermporn Kertiopas, Irfan Ullah and Lunchakorn Wuttisittikulkij [6] implements cloud-based SLAM and determines a map with a cloud server using the Lidar scanning data from a robot. The sensed data is fed to the cloud server via a cellular network and SLAM operation is performed at the aforementioned cloud server, which generates a map and determines the position of the robot which is available online. The benefit of the cloud-based SLAM is that the new strategy can be easily adopted with the same interface between a robot and the cloud server.As far as practical implementation is concerned, the PhoneBot sends the point cloud data from its Lidar to the cloud server each time the robot moves a certain step. It is assumed that the cloud server has a map available with them; however, the map is not updated. The scan to map matching algorithm is applied to determine the position of the PhoneBot and update the map. The point cloud can be processed at the cloud server to determine markers, landmarks and/or features to enhance the speed and accuracy of the map and the robot's positioning. Loop closure is also done at the server as well. Thanks to the high bandwidth cellular network, the computational power and artificial intelligence can be processed in the cloud.

Amey Tiwari,Rahul Talekar, Prof..S.M.Patil [7] express a student bot project built using artificial algorithms that analyze user's queries and understand the user's message. This System is a web application which provides answers to the query of the student. Students just have to 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 to what the user queries. If the answer is found to invalid, the user just needs to select the invalid answer button which will notify the admin about the incorrect answer. Admin can view invalid answers through the portal via login System allows admin to delete the invalid answer or to add a specific answer of that equivalent question. 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 analyzes the question and then answers to the user. The system answers 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 to the user. The user can query about the college related activities online with the help of this web application. This system helps the student to be updated about the college activities.

Chowdary Raavi , Somraj Digvijay ,and Mrs.Viji Amutha Mary [8] creates a more user accessible chat system; a simpler input method using voice is introduced; creating and catering for a more personal and convenient experience. The input voice is then processed and a response is generated. This process places a large processing requirement on the server's processor and memory resources. This limitation is even more evident when a large number of users are to be simultaneously accommodated on the system.

III. PROPOSED SYSTEM

The Traditional way of enquiry was lengthy and time consuming with less efficiency. Our Project to create {a school|a college|and university} outbound call voicebot would undoubtedly have such a broad scope could result in changes in the way college and students interact.. The goal of this project is to help with the problem's solution of direct communication between applicants and the College.It will definitely prove helpful to many customer service,sales and marketing sectors. It boosts the functionality of the many colleges. It will automate college admission enquiry using RPA ui path. The scope of the project is to come up with a voice bot system having outbound call capabilities. It would be useful to reduce the costs and time of the college staff. The project's goal is to relieve the pressure on admissions officers and, in the long run, other users also by developing a convincing outbound call bot.

In the existing system, there is no software or application to voice call and take feedback automatically. We are building a calling bot which will automatically call , take feedback and save it. Figure 3.1 shows the flow of the proposed system.

Step by Step working process of this automatic solution: 1. Pick the phone no. from the database. 2. Dial the number using call dialer. 3. Place the outbound call. 4. Once the call is picked then activate the voice bot or play the audio for admission purposes. 5. Allowing the option to the user to provide their feedback. 6. Users provide their feedback if feedback fulfills the condition then ask further questions. 7. At last Play the Thank You audio cut the call. 8. Process records the voice and converts it into text. 9. Saves the feedback in the database against that user number. 10. Repeat the process from Step 1 until all given phone no.
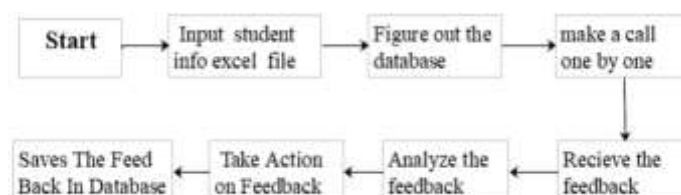

Fig. 3.1 Proposed system Flow

Advantage of this project is that it saves the time and effort of College and College faculty in collecting and storing the feedback in the database.College Faculty can make better use of their time.Timely specific outbound call. Example: If any College wants to enquiry about Student admission between 9:00 AM to 5:00 PM then they can schedule the attended robot to make phone calls during this time. The robot will start making non-stop calls in between that time. This will help College to increase their productivity to collect student feedback in place of college faculty efficiency in placing the call.

IV.   SYSTEM DESIGN

The Figure 4.1 shows the working of voice bot whereas the Figure 4.2 shows the working and designing of the project in uipath RPA tool.
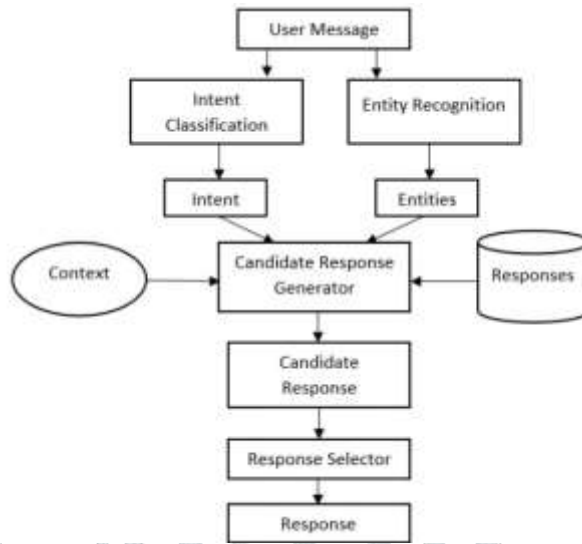
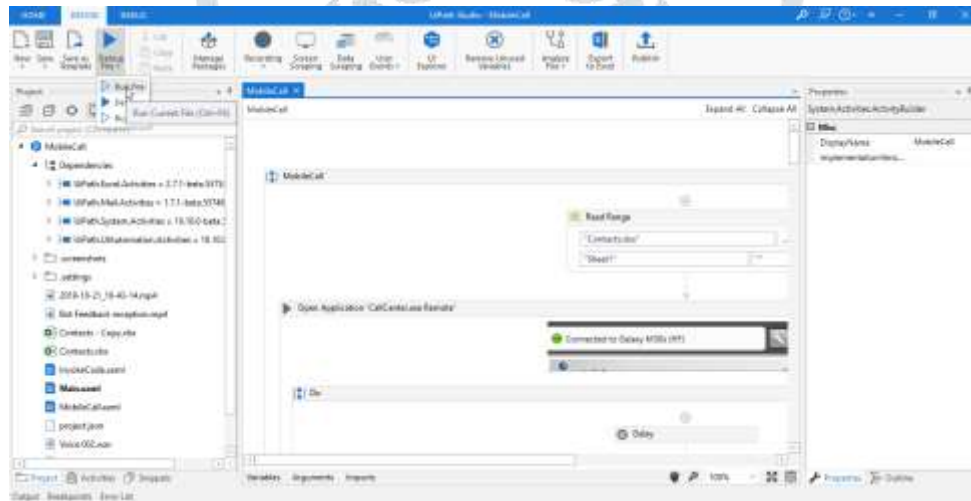

Fig.4.1 Voice Bot Response Working Diagram

Fig.4.2 Designing of Bot in Ui Path Studio

The Figure 4.3 shows the excel file where the student info will be saved with their responses whereas the Figure 4.4 shows the outbound call made by bot using phone dialer.

Fig.4.3 Student Details and Their Responses.

Fig.4.4 Outbound Call By Robot.

V. CONCLUSION AND FUTURE WORK

To improve the current functionalities of College Enquiry, in the future, the scope of the voice bot can be increased by inserting data for all the departments, training the bot with varied data, testing it on live, and based on that feedback inserting more training data to the bot. Some of the new features which can be added to the bot are 1) speech recognition feature through which students can ask their queries verbally and get the answers from the bot, 2) integration with multiple channels such as , SMS, and various social media platforms like Skype, Facebook and Twitter, 3) handling context aware and interactive queries in which bot will be aware of the context of an ongoing conversation with a student, enrollment, 4) adding a capability for the bot to perform analytics based on user's basis of this sentiment, the bot can be retrained on human emotions, allowing for additional empathy to be added to the bot.. It is helpful for many fields like finance and accounting, payroll,human resources, supply chain, customer service, sales and marketing, IT.

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