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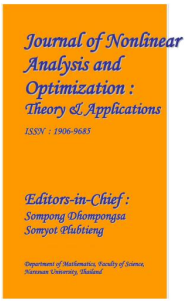

FARMERS AGRICULTURE ASSISTANCE CHATBOT

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ABSTRACT

India is known for the apprehension of global powerhouse of agriculture in the world and has been mainly an agriculture-based economy, in spite of the fact that a lot of farmers and respective individuals face a lot of problems in agriculture due to inadequate knowledge of

agriculture production such as poor farming techniques, inadequate materials for the crop, proper crop planning, maintaining of fertilizer balance. This project represents a prototype of a chatbot structure which helps assist individuals or farmers in crop management and predicts the need of the crop. Prediction such as the fertilizer dosage, nutrients in the crop and assists in providing sufficient knowledge to the individual to work on the basic needs. This structure uses Natural Language Processing and takes feed from the predetermined data to give responses on based queries. For the Structure to be accurate the chatbot analyzes factors such as past feed and the sources of the data from "The Indian Council of Agricultural Research"

1. INTRODUCTION

The basic aim of this Chatbot system/structure is that this structure is for humans to resolve Agriculture and Farming related queries for the best results it is mainly based on providing informative lines to get the individual understand what they want [1]. The chatbot design consists of an architecture in which the asked query is analyzed in forms of pre-determined keywords associated with the type of questions in the form of a mapping to identify the need of the user.

The assistant conducts a chatbot with a voice that helps farmers with their questions. Thereby, through the help of a chatbot have function such as specific fertilizer doze predictor, best crop selection according to the climate a farmer or an individual can easily get the specific required information [2]. In a country like India, in which most of the farmers are not capable to decide complex estimations needed in the cultivation process, this chatbot can help them to a large extent. Agriculture is the main and only source of food (raw materials) globally & a large number of individuals rely on it for livelihood. Approximately 70% of rural areas people directly rely on agriculture. Even agriculture is the main source of income for the most developing countries.

Agriculture accounts for 18% of the gross domestic process of India and almost 50% on the country workforce is dependent on agriculture for livelihood. Despite such massive size and worth of this sector and most of the Indian farmers did not have the prior knowledge about the proper farming technique & management ways such as lack of knowledge in selection of crops

as per soil and climate type, identification of pests in farms & the selection of proper pesticide for the same, irrigation measures [3].

These above mentioned factors affect the yield or quality of the crop majorly. Proper planning of the crop, its management & nutrition watch may lead to increase the quality & yield of the crop to a large extent. There are various sites providing chatbot services one which no one never heard of two chatbot system like google assistant or Crotona. There are many ticks to providing services but in the agriculture field chatbot system is still in improvement. Farmers who want better crop production lack basic skills and even if they are an expert there are slight chances that the quantity and quality of the crop can still not be perfected [4]. In order to get 100% yield in agriculture production one must do what it takes to achieve the goal. This project is a step towards proving knowledge to the individual to get answers related to farming techniques. As there is an increasing advancement in the field of robotics certain farmers get to test them but many rely on small scale production. In that case any advancement in technology is useless because the priority here is people itself not machines [4].

Now coming back to Chatbot assistance which will be free of cost, portable, reliable and helpful in every aspect. This idea may encourage farmers to take information on farming practices and raise any query if needed.

2. LITERATURE SURVEY

The outbreak of the present pandemic Coronavirus (official designation COVID-19 or 2019-nCov) forced us to adopt “new normal” and give a greater use and reliance on virtual space than ever before with physical spaces. In the context of the library, shifting of the user assistant programme from physical to virtual face a problem in this transition. This paper based on the probable solution with the use of practical implementation of conversational AI [5] i.e. “Bot” or “Chatbot” to fulfil user needs 24*7 without human intervention. A chatbot is a computer program that can simulate conversation and interact with humans — spoken, written or both. It acquired a set of pre-programmed commands and continue learning based on the inputs it receives. This paper gives a general overview of conversational AI, Chatbot and its multitasking features and a practical overview of the implementation of one of the famous chatbot provider

Kore.ai using its free to use plan. Additionally, the paper explained the requirement of the present situation & long term benefits of chatbot in the library.

For using software applications, user interfaces that can be used includes command line, graphical user interface (GUI) [6], menu driven, form-based, natural language, etc. The mainstream user interfaces include GUI and web-based, but occasionally the need for an alternative user interface arises. A chatbot based conversational user interface fits into this space. The chatbot is a class of bots that have existed in the chat platforms. The user can interact with them via graphical interfaces or widgets, and the trend is in this direction. They generally provide a stateful service i.e. the application saves data of each session. On a college's website, one often doesn't know where to search for some kind of information. It becomes difficult to extract information for a person who is not a student or employee there. The solution to these comes up with a college inquiry chat bot, a fast, standard and informative widget to enhance college website's user experience and provide effective information to the user. Chat bots are an intelligent system being developed using artificial intelligence (AI) and natural language processing (NLP) algorithms. It has an effective user interface and answers the queries related to examination cell, admission, academics, users' attendance and grade point average, placement cell and other miscellaneous activities.

Today is the era of artificial intelligence. With the development of artificial intelligence, machines have begun to impersonate various human characteristics today. Chatbot is one instance of this interactive artificial intelligence. Chatbot is a computer program that enables to conduct natural conversations with people. As mentioned above, Chatbot conducted conversations in text, but Chatbot, in this study evolves to perform commands based on speech-recognition. In order for Chatbot to perfectly emulate a human dialogue, it is necessary to analyze the sentence correctly and extract appropriate response. To accomplish this, the sentence is classified into three types: objects, actions, and preferences. This study shows how objects is analyzed and processed, and also demonstrates the possibility of evolving from an elementary model to an advanced intelligent system. By this study, it willbe evaluated that speech-recognition based Chatbot have improved order-processing time efficiency compared to text based Chatbot. Once this study is done, speech-recognition based Chatbot have the potential to automate customer service and reduce human effort.

Purpose This study aims to explore the role of artificial intelligence (AI)-powered chatbot marketing efforts (CMEs) [6] in the establishment of relationships between brands and their customers, extending the link between relationship marketing and online consumer behavioral intentions. Design/methodology/approach Data are collected from 1,072 customers in the USA, who used chatbot marketing activities from any of 30 brands leading their industries in messaging innovation. Structural equation modeling is used for data analysis. Findings Results show that interaction, information, accessibility, entertainment and customization are important CMEs components. CMEs have significant direct effects on the quality of communication with chatbot agents and indirectly affect customer–brand relationships (CBR) and customer response. In addition, the findings demonstrate that CBR mediates the association between communication quality and customer response. Originality/value Implications of this study can enable practitioners to understand the effects of AI on user experiences and provide a guide for the development of CMEs strategies and relationship building.

Speech and textual information play a crucial role in communicating between humans. An article in “The New York Times” published that now-a-days the adults are spending more than 8 hours a day on screens of computers or mobiles. So the major communication between humans is conducted through web applications such as WhatsApp, Facebook, and Twitter etc as a form of speech and textual conversation. In the present paper, we have focused on designing a textual communication application namely chatbot in the educational domain. The proposed chatbot assists in answering questions provided by the users. To develop the system, we have employed an ensemble learning method as random forest in the presence of extracted features from our prepared dataset. Besides, the validation system offers an average F-measure 0.870 score on various K-values under random forest for the proposed chatbot. Finally, we have deployed the proposed system in a from of telegram bot.

Prioritization is essential for process decision-making. Organizational decision-makers frequently do not have clear perceptions of which processes are of prime and secondary importance. Further, research does not provide a satisfactory definition of process importance and quantifiable proxies. Thus, this paper derives dimensions of process importance including the number of process executions, involved process stakeholders, customer or supplier involvement, and value chain position from literature, and introduces measurable proxies from

information systems for each dimension. The artifact “KeyPro” is developed to explore important processes bottom-up from log data in SAP-ERP systems with visualization in interactive dashboards. As process library, we retrieve 220 processes from 52 process experts across four real-world companies. 773 ERP transactions are matched to these processes to measure which processes constitute important processes along the importance dimensions. We implemented KeyPro in three real-world SAP-ERP systems and a focus group of process experts. An evaluation in two case studies reveals significant deviations between perceptions by decision-makers and the results suggested by KeyPro.

system which selects a suitable candidate for the future process design to help organizations in decision-making in their transformation projects is needed.
The idea underlying this project therefore is to theorize, conceptualize, and finally to implement a prototype which compares two BPMN representations of processes and computes a measure of similarity between the two BPMN processes.
The resulting algorithm might become a part of larger decision-support system for business process transformation [7].

3. PROBLEM STATEMENT

Before the beginning of formatting this current paper let us acknowledge that there has been several works and projects related to chatbot usage and its structure-based assistance. The structural work related to chatbot query system pretty much work the same write. This general review is based on the study of implementing ConversationalAI in Libraries: A practical approach. Also, the important part to notice that certain big companies are taking over farming practices leaving farmers nothing but labor. Future of farming is that it is too dominated by a handful of giant companies [5]. Decision about farming practices should be made by more people for individuals in farming sector.

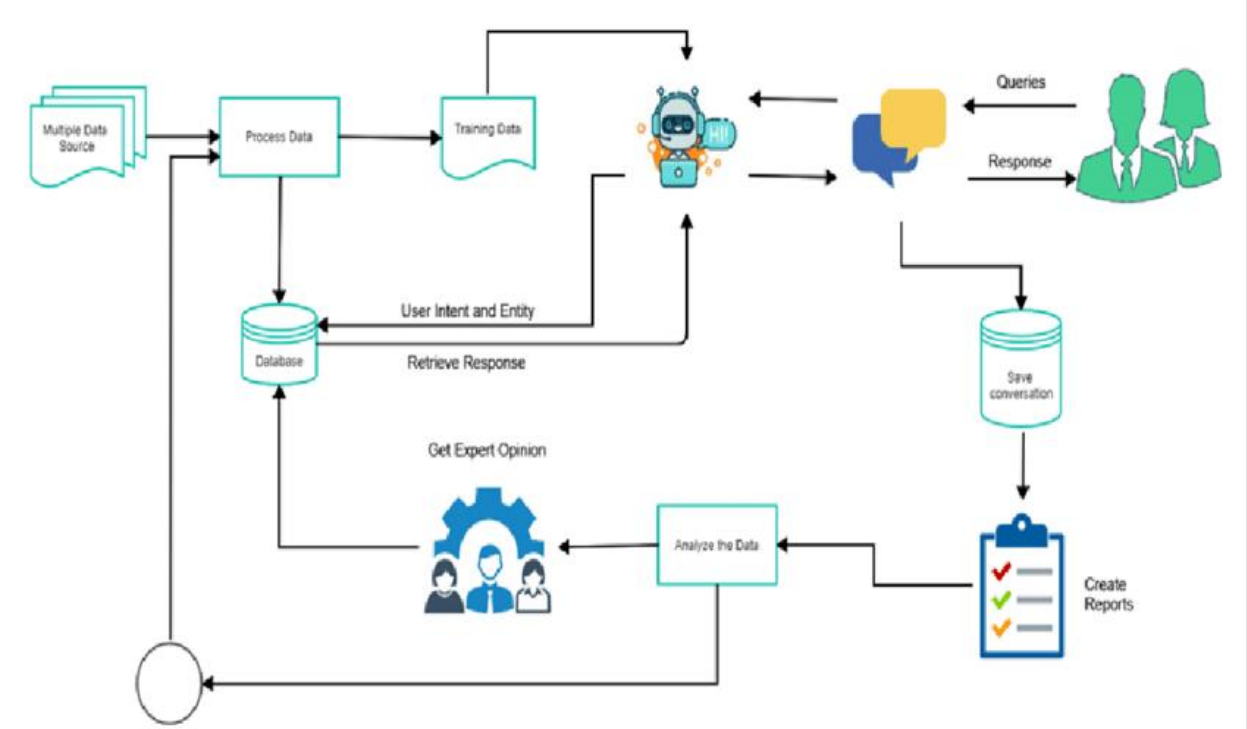
There needs to be actual farming under human supervision not company board members protecting investments. There have been several advancements in technology to aid farming practices mostly in robotics and hardware tools which basically captures man- power and they are left with less work [6].

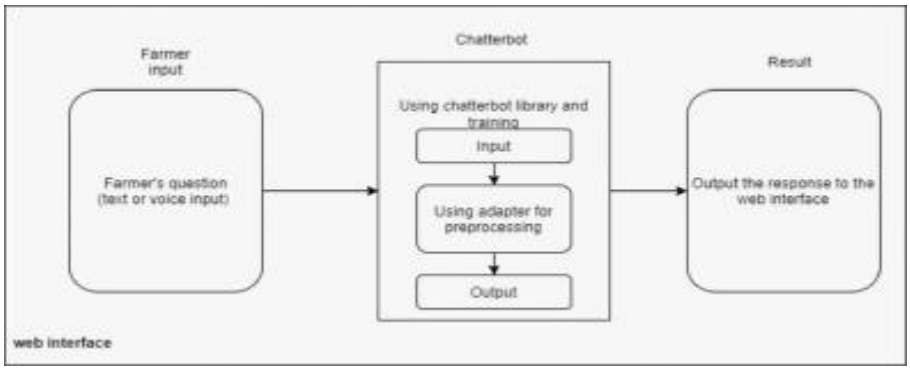
4. PROPOSED SYSTEM

The main fair is the satisfaction of Farmers in the field by giving them the needed information about the crops as there are several outcomes that people are unaware of in the field of Agriculture. Proposed bot structure will provide information regarding as follows:

Crop Nutrient Prediction. Deficiency papers prediction. Crop selection for certain sites. Data Fetching [7].

5. SYSTEM ARCHITECTURE





6.IMPLMENTATION

6.1 User

Register. Login. Dashboard. Chatbot. Account. My Profile. Edit Profile. Change Password. General. Crop Details. Fertilizer Details. Feedback. Logout.

6.2 Admin

Login. Dashboard. Pending Users. All Users. User Profile. Feedback. Feedback Graph. Logout

7. OUTPUT RESULT


Home
Home
Dialogflow
127.0.0.1:8000
FARMER BOT
HOME USERLOGIN REGISTER ADMINLOGIN ABOUTUS CONTACT
HELLO & WELCOME
FARMER CHATBOT
LEARN MORE
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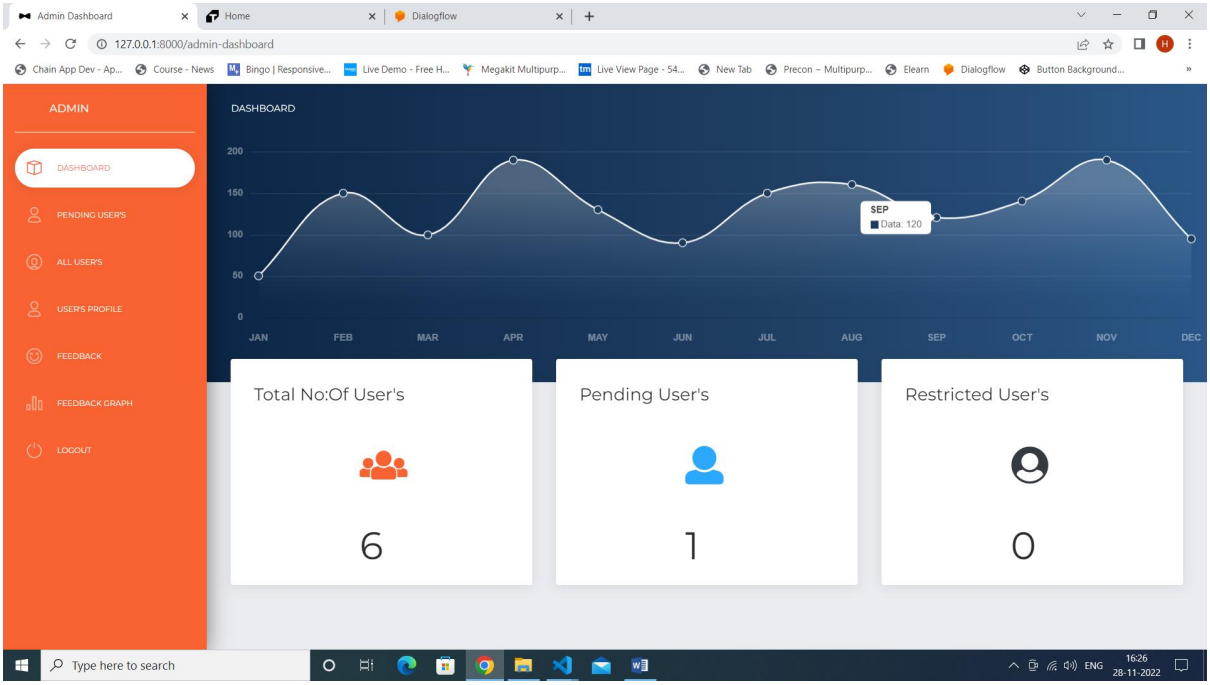

8. CONCLUSION

A Chatbot for Agricultural assistance purpose can play an important role in solving various problems in these sectors and could save a lot of resources, reduce unproductive activities and unwanted expenses. This Chatbot helps farmers to find right answers for their queries to make the right decisions before long. Future improvements can be made by provide feedback in their language. This system will enable the farmer to ask any number of inquiries, which will help to spread the latest farming technology faster and to a higher number of farmers. In Future several new ideas may emerge, and any user could add some extraordinary features to the chatbot system in Agriculture assistance like image recognition, voice activation, multilingual both text and voice programmable and operations using location finder over a wide region more than just 1 city.

9. FUTURE SCOPE

In the realm of agricultural assistance, the future scope for the chatbot project is expansive and promising. By integrating advanced technologies and expanding its functionalities, the chatbot can evolve into a multifaceted tool that addresses a wide array of agricultural challenges. One

avenue for development is the incorporation of image recognition technology, enabling farmers to upload images of crops, soil, or pests for analysis and diagnosis. This feature would enhance the chatbot's ability to provide tailored recommendations and solutions. Additionally, the integration of voice activation and multilingual support would improve accessibility, catering to farmers with limited literacy skills and diverse linguistic backgrounds. Leveraging geospatial data and real-time weather updates would further enhance the chatbot's recommendations, considering factors such as soil type, climate conditions, and local agricultural practices specific to each farmer's region. Collaborating with agricultural experts and institutions could enrich the chatbot's knowledge base, ensuring the provision of accurate and up-to-date information on best practices and technological advancements. Furthermore, implementing blockchain technology for supply chain transparency and integrating IoT devices for real-time monitoring of farm operations would optimize resource utilization and enhance productivity. Through these advancements, the agricultural chatbot project holds the potential to revolutionize farming practices, promote sustainability, and contribute to food security and rural development on a larger scale.

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