International Journal of Scientific Research in Engineering and Management (IJSREM)
Volume: 06 Issue: 04 | April - 2022 Impact Factor: 7.185 ISSN: 2582-3930

Chatbot for Healthcare

Dr. MOHD USAMA
Associate Professor
Department of computer Science and engineering
Kalasalingam academy of Research and education,
Krishnankoil, India
mohdusama@klu.ac.in

S.LAKSHMAIAH
Department of computer Science and engineering
Kalasalingam academy of Research and education,
Krishnankoil, India
9918004056@klu.ac.in

G.VISHNU VARDHAN REDDY
Department of computer Science and engineering
Kalasalingam academy of Research and education,
Krishnankoil, India
9918004036@klu.ac.in

B.RAGHUNATH REDDY
Department of computer Science and engineering
Kalasalingam academy of Research and education,
Krishnankoil, India
9918004013@klu.ac.in

***Abstract*- Healthcare is a very important thing for everyone to lead a good life. and it is very difficult to obtain the consultation with the doctor for every health problem.it is difficult to consult a doctor for every small problem The idea is to make chatbot for healthacare using Artificial Intelligence that can diagnose the disease and provide the normal basic details about the disease before consulting a doctor. And This will help to reduce healthcare costs and improve accessibility to medical knowledge through medical chatbot. A chatbot is a Computer Software program that conducts a conversation via auditory or textual methods. A system will contain all the users default quarries and it will be saved in database if any customer asked their querry then it will match with saved data then automatically it will give respond for the customer quarry. This project done by using Artificial Intelligence Natural Language with Python platform Ranking and sentence similarity and this a web application where users have to regiter in the applications before login and after patient has to enter his basic details with there id and there id helps us to rember the details of the patient.**

Keywords:-Chatbot, Healthcare,Chatbot Assistance Artificial Intelligence, Virtual Assistance.

I. INTRODUCTION

Computers give us information; they engage us and help us in a lot of different manners. A chatbot is a program intended to communicate on a text or speech. And, this paper concentrates only on text conversions.

The Daily use of chatbots developed swiftly in various fields in the recent years, including marketing, assisting structures, training, health Care, Cultural historical past, and enjoyment. In this research paper, we first gift a historic review of the evolution of the worldwide community's hobby in chatbots. Later, we speak the motivations that pressure the use of chatbots, and we make clear chatbots' usefulness in an expansion of areas. furthermore, we spotlight the effect of social stereotypes on chatbots layout. After clarifying essential technological concepts, we pass on to a chatbot category primarily based on numerous criteria, inclusive of the location of understanding they talk over with, the want they serve and others.

The chatbot would coordinate the input sentence from theuser question with the knowledge base. Each query is compared with the knowledge database of the chatbot. The important keywords are extracted from the given input sentence and the sentence similarity is found.. The interfaces are standalone built using the PYTHON programming language.

II. LITERATURE REVIEW

Here This chatbot can answer queries in the textual user input. For this purpose, AIML with program-o has been used. The chatbot can answer only those questions which he has the answer in its dataset. So, to increase the knowledge of the chatbot, Weather Forecasting Department, In such cases, the user will be able to talk and interact with the chatbot in any kind of domain. towards building chatbots involves helping people to facilitate their work and interact with computers using natural language or using their set of rules. Future Such chatbots, backed by machine-learning technology, will be able remember past conversations and learn from them to answer new ones collected. [1]

A Chatbot will assist in friendly user experience by getting immediate support from the machine. It will diminish the stress in customer service. Programmed alerts will help in dangerous cases. Reactive time for the question is negligible and precise. In near outlook, AI will present itself on a superior picture and will be included in our daily routine.

There is a requirement to incessantly look for innovative thoughts for improvement and to develop in already set up research. The chatbot architecture amalgamates a language model and computational algorithm to follow information online contact connecting a human and a computer using common language.[2]

This chatbot aims to make a conversation between human and machine. Here the system stores the knowledge database to identify the sentence and making a decision to answer the question. The input sentence will get the similarity score of input sentences using bigram. The chatbot knowledge is stored in RDBMS. [3]

The chatbot implemented using pattern comparison in which the order of the sentence is recognized and saved response pattern. Here the author describes the implementation of the chatbot Operating system, software, programming language, database and how results of input and output are stored. Here the input is taken using text() function and other punctuation is removed using trim() function and random() function is used to choose a response from the database. The chatbot is used for an entertainment purpose. [4]

Here they use n-gram technique for extracting the words from the sentences. Here n-gram is used for comparison and deduction of the input with case data using Moro phonemes and phonemes as the deciding parameter. Probability analysis for the closest match is performed. The final expression is redirected through an expert system. [5]

The chatbot developed here for healthcare purposes for the android application. The user sends the text message or voice message using Google API. Here the user gets only related answer from the chatbot. SVM algorithm is used to classify the dataset. Here the Porter algorithm is used to discard unwanted words like suffixes or prefixes. [6]

The different documents served in web, the content is checked by tagging the dataset using n-gram based low dimensional demonstration, TF-IDF matrix that generates S, U, and V and finally multiplying the 3 matrices cosine similarity is calculated. [7]

Here the chatbot is created for the customer service that functions as public health service. The application uses N-gram, TF-IDF and cosine similarity. The knowledge base is created for storing the question and answer. The application clearly shows extracted the keyword from the question and by using unigram, bigram, and trigram which helps in fast answering. [8]

Authors have suggested a framework which is using R language to communicate with Chatbot by using AIML. In this, authors have proposed a model which is more suitable for the educational purpose, idea behind this study is to provide more interactive way to student to get connect university system. [9]

III. PROPOSED SYSTEM

The The proposed approach introduces the design and indicative usage of a chatbot system which employs a messenger service platform environment in natural language so as to provide an efficient, secure and user-friendly framework of interaction with the IoT devices deployed for agricultural purposes. Here the bot-user is expected to type in the query in a predefined pattern. Once the query pattern is matched, the template of the category that contains the response is sent back to the bot-user.

IV. SYSTEM ARCHITECTURE

Fig 1 is the system Architecture outline of chatbot healthcare application. The client inputs the question in the UI as the text. The UI gets the user query and after that sends it to the chatbot application. In the chatbot application, the literary experiences pre-processing steps incorporate tokenization where the words are tokenized, at that point the stop words are removed and feature extraction depends on n-gram, TF-IDF, and cosine likeness. The question answers are stored in the knowledge database to recover the retrieve the answer.

Tokenization: The words or sentences separated word by word for increased processing. It separates text into words at whatever point it experiences one of the rundowns of indicated character. All the words are separated from sentences and the punctuation are disposed of.

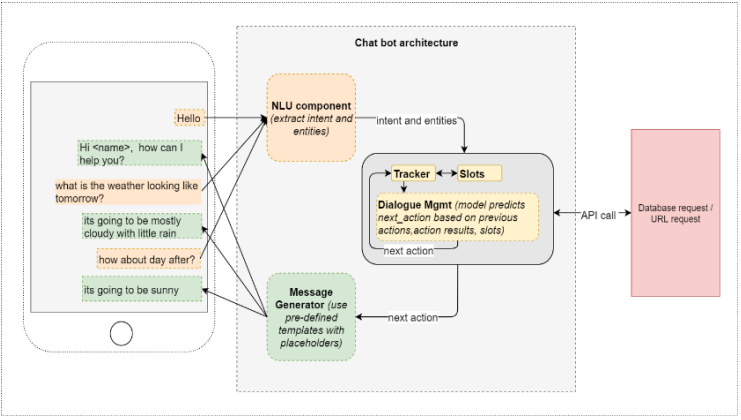


Fig. 1. System architecture

Stop words removal: The stop words are removed from the sentences to extract important keyword. It is mainly employed to remove unnecessary things such as words occurring too frequently in sentences. It is also used to delete words that are not important or the words with no specific meanings such as an, a, or the. This step is applied to reduce processing time or computational complexity.

Feature extraction based on N-gram TFIDF: Feature extraction is a characteristic decrease process in the document; it ranks the attributes as per the document. By doing this step it upgrades the speed and adequacy of the document. It is used to extract the set of keywords and frequency of the keywords in the document.

TF-IDF: Term frequency and Inverse document frequency is used to calculate the weight of each term in the sentence.

The term frequency is used to check how many times the term as been occurred in a particular sentence using the formula below.

$$\mathbf{tf} = tf_i$$

IDF used to compute the weight of uncommon words over all reports in the document. The words that appear in a while in the document have a high IDF score. It is given by the condition underneath

.

The tf and idf are combined to produce the weight of the term or word in the document. The tf and idf values are multiplied to obtain the weight of each term in the document.

The system replies using an effective Graphical user interface which implies that as if a real person is talking to the user. The user just has to register himself to the system and has to login to the system. After login user can access to the various helping pages. Various helping pages has the bot through which the user can chat by asking queries related to college activities

Sentence similarity: Cosine similarity is being used to check the similarity between two sentences. The similarity between the query and document is directly proportional to the number of query weights. The similarity calculation result of the two documents ranges from 0 to 1 since the term frequency cannot be negative. The formula for calculating cosine similarity is given below:

Retrieve the matched sentence: The answers for the query which are obtained from the above process are retrieved and displayed in the user interface.

Results and Analysis: The application uses a question and The main objective of the project is to develop an algorithm that will be used to identify answers related to user submitted questions. The need is to develop a database where all the related data will be stored and to develop a web interfaceThe web interface developed will have two parts, one for simple users and one for the administrator. A background research took place, which included an overview of the conversation procedure and any relevant chat bots available.

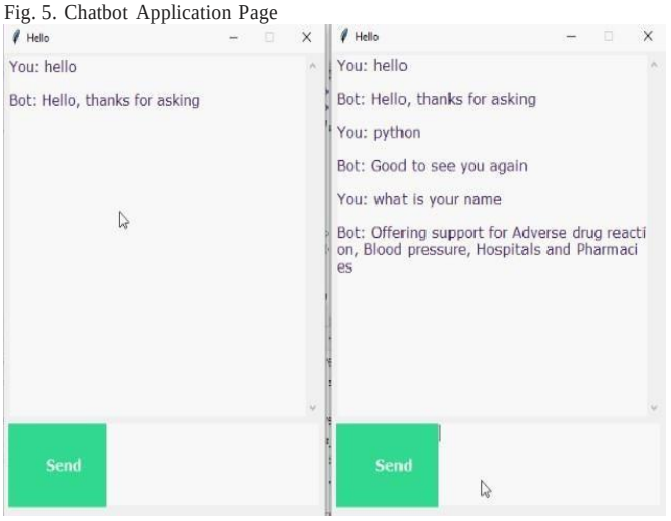
Fig. 1. Login page

Fig. 2. Registration page

Fig. 3. Graphical Analysis page

Fig. 4. Dataset page

Fig. 5. Chatbot Application Page



V. CONCLUSION

The system replies using an effective Graphical user interface which implies that as if a real person is talking to the user. The user just has to register himself to the system and has to login to the system. After login user can access to the various helping pages. Various helping pages has the bot through which the user can chat by asking queries related to college activities.

REFERENCES

[1] K. Oh, D. Lee, B. Ko and H. Choi, "A Chatbot for Psychiatric Counseling in Mental Healthcare Service Based on Emotional Dialogue Analysis and Sentence Generation," 2017 18th IEEE International Conference on Mobile Data Management (MDM), Daejeon, 2017, pp. 371-375. doi: 10.1109/MDM.2017.64

[2] Du Preez, S.J. & Lall, Manoj & Sinha, S. (2009). An intelligent web-based voice chat bot. 386 -391.10.1109/EURCON.2009.5167660

[3] Bayu Setiaji, Ferry Wahyu Wibowo, "Chatbot Using a Knowledge in Database: Human-to- Machine Conversation Modeling", Intelligent Systems Modelling and Simulation (ISMS) 2016 7th International Conference on, pp. 72-77, 2016.

[4] Dahiya, Menal. (2017). A Tool of Conversation: Chatbot. INTERNATIONAL JOURNAL OF COMPUTER SCIENCES AND ENGINEERING. 5. 158-161.2017.

[5] C.P. Shabariram, V. Srinath, C.S. Indhuja, Vidhya (2017). Ratatta: Chatbot Application Using Expert System, International Journal of Advanced Research in Computer Science and Software Engineering,2017

[6] Mrs Rashmi Dharwadkar1, Dr.Mrs. Neeta A. Deshpande, A Medical ChatBot, International Journal of Computer Trends and Technology (IJCTT) – Volume 60 Issue 1- June 2018

[7] Farheen Naaz, Farheen Siddiqui, modified n-gram based model for identifying and filtering near-duplicate documents detection, International Journal of Advanced Computational Engineering and Networking, ISSN: 2320- 2106, Volume-5, Issue-10, Oct.-2017

[8] N-gram Accuracy Analysis in the Method of Chatbot Response, International Journal of Engineering & Technology. (2018)

[9] Shukla, V.K, Verma, A, "Enhancing LMS Experience through AIML Base and Retrieval Base Chatbot using R Language", 2019 International Conference on Automation, Computational and Technology Management (ICACTM)