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TG'JI Chatbot: Automation of Teacher Guardian System using Machine learning.

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Abstract: *In recent times, the design and implementation of chatbots have received great attention from developers and researchers. Chatbots are Artificial Intelligence (AI) based conversational systems which are able to process human language through various techniques including Natural Language Processing (NLP) and Neural Network (NN). The proposed methodology is to develop a state-of-the-art chatbot application that can be used in colleges and institute as medium of communication between Teacher Guardian and parent of students. The proposed chatbot can be implemented using a couple of tools such as Dialog Flow, TensorFlow, Android Studio and Firebase, followed by Machine Learning (ML) techniques to provide information about ward to parents through use of Chatbot. The parents can know about attendance of their ward as well the performance at exams.*

Key Word*: Chatbot, Artificial Intelligence (AI), Machine Learning (ML), Deep Learning (DL)*

I. Introduction

Nowadays, we see the chat bots everywhere Chat bots are the source of answers to the user's questions in any particular domain where it is operating. Chat bots are the source of answers to the user's questions in any particular domain where it is operating. The most popular example today is the Amazon's Alexa. Chat bots are at almost every place, one can see it at every second website they visit. A bot is helpful in answering queries related to information which might be unreachable at that website easily. Most of the websites avail users with chat bots to aid them to go through what the websites facilitate. They are turning out to be our virtual assistants in everyday lives.

- Basics of chatbot: A chatbot is an artificially intelligent creature which can converse with hu-mans. This could be text-based, or a spoken conversation (in case of voice-based queries). Chat bots are basically used for information acquisition. It can run on the local PCs and mobile phones, though most of the time it is accessed through the internet. It can be compelling, captivating and spell-bounding. Itis a conversational agent which interacts with users in a certain domain or on a particular topic with input in natural language sentences. Mainly a chatbot works by a user asking some question or initiating a new topic of discussion. Chat bots can be referred as software agents that pretend as human entity. These are the agents with AI embedded and using NLP they can answer to user questions. Predefined knowledge base helps develop a response to the query.
- Chatbot for College: The need for college inquiry system arises due to various reasons which include: the slow nature of college website, an outsider would not know where to search for a particular piece of information, difficult for the person out-side college's domain to extract information. The smart solution for all the drawbacks lends to the need of the system. The college inquiry system will provide the response by summarizing the query and then output answers, it also provides selective information what the user wants. A college system will dispense all answers relating to domains such as admission, examination cell, notice board, attendance, placement cell and other miscellaneous domains.

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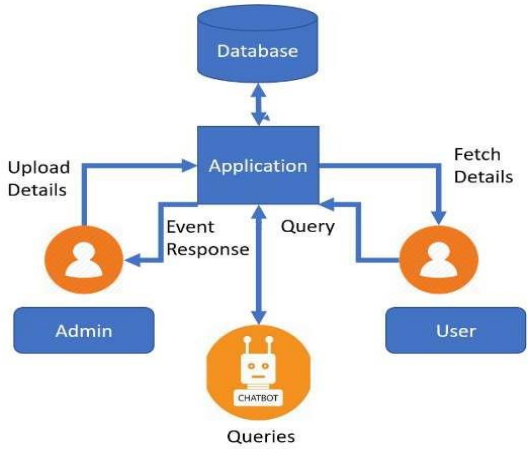
II. Proposed Methodology

The system is developed to design Chatbot Application where parents will be able to ask queries related to his ward about attendance and performance study.

System Architecture:



Algorithm:

SVM :

The support vector machine (SVM) is a predictive analysis data-classification algorithm that assigns new data elements to one of labeled categories. SVM is, in most cases, a binary classifier; it assumes that the data in question contains two possible target values.

Support Vector Machine (SVM) is supervised learning technique used for prediction of student performance basis of student's attendance, each subject marks, grade etc. This application is helpful to assist students by offering them proper advice through which they can improve their performance in upcoming tests.

SVM steps:

- Finding the Closest Pair of Points
- Adding a Point to the Support Vector Set
- Pruning

Pseudo Code:

candidateSV = {closest pair from opposite classes}
while there are violoting points do
Find a violator
CandidateSV = CandidateSV U violator
If any $\alpha p < 0$ due to addition of c to S then
CandidateSV = CandidateSV \ p
Repeat till all such points are pruned
End if

Technology:

AIML:

If the user is trying to make a normal conversation with the bot, the input is mapped to an appropriate pattern in Artificial Intelligence Modeling Language (AIML) files. If the response is available, it is sent to the user. Other data provided to the chatbot such as username, gender, etc. are also saved. If the pattern is not available in AIML files, a random response is sent suggesting “Invalid Input”

Database:

FIREBASE:

Firebase is a platform developed by Google for creating mobile and web applications. It was originally an independent company founded in 2011. In 2014, Google acquired the platform, and it is now their flagship offering for app

development. The Firebase Realtime Database is a cloud-hosted NoSQL database that lets you store and sync data between your users in real-time.

Modules:

[1] Personal Query Response System (Module-1):

Upon receiving personal queries like Marks, attendance, etc., the authenticity of the user is checked through user-id and password. If the user detail is in-valid, an appropriate response is sent. If the user authenticates successfully, the input text is processed to extract keywords. Based on the keywords, in-formation required by the user is understood and the information is provided from the database.

[2] AIML Response System (Module-2):

If the user is trying to make a normal conversation with the bot, the input is mapped to an appropriate pattern in Artificial Intelligence Modeling Language(AIML) files. If the response is available, it is sent to the user. Other data provided to the chatbot such as username, gender, etc. are also saved. If the pattern is not available in AIML files, a random response is sent suggesting "Invalid Input".

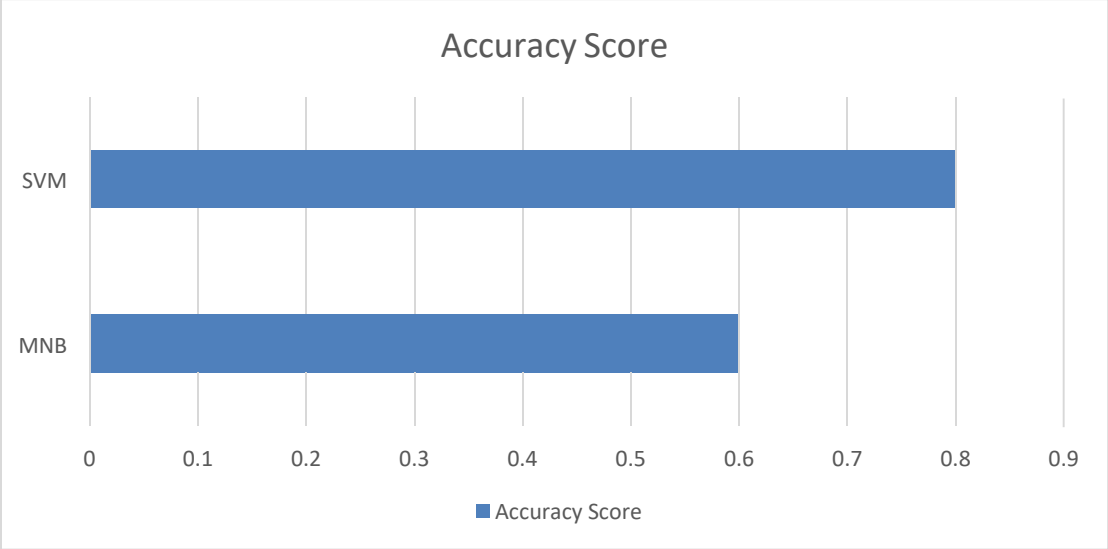
[3] Query Analysis and Response System (Module-3):

When a user wants some information pertaining to college, the response will be provided through this module. If the input matches a pattern in the AIML files, the appropriate response will be sent to the user. If the AIML files have no entry for that particular query pattern, keywords are fetched from the input. An algorithm to check sentence similarity is applied to the modified input to check its similarity with the questions of a predefined question-set, whose answers are available.

III. Result

[1] Analysis:

For predictive algorithm to be used for application. We had taken SVM and Naïve Bayes for consideration. Accuracy for same has been calculated.



[2] Experimental Results

The Chatbot developed as a communicator between Teacher guardian and parent. Initial steps of parent login and verification is done.

Figure shows the query asked by parent about attendance of ward whose Roll Number is 3.The next figure shows the attendance of ward for same month.

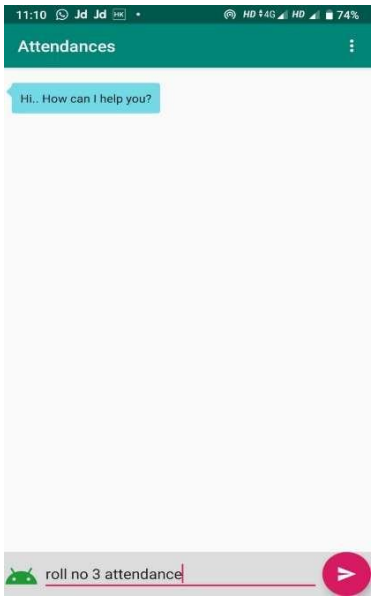


Fig.3: ChatBot Input Screen

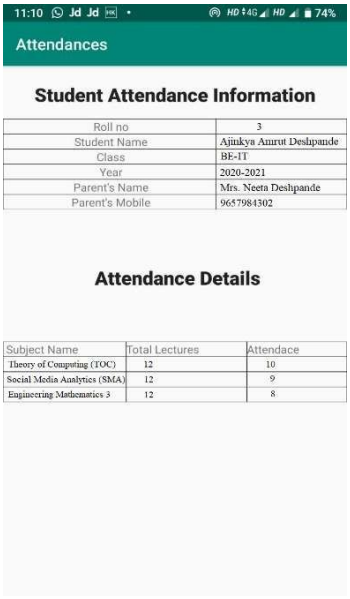
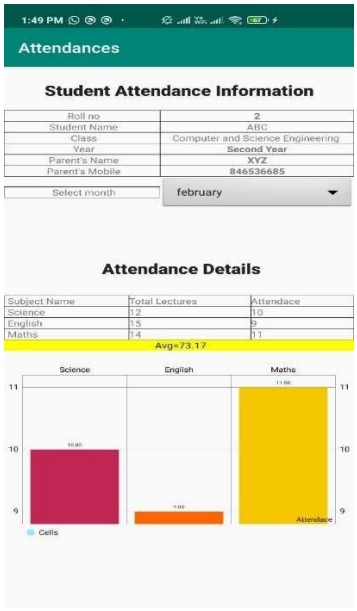


Fig.4: ChatBot Output Screen



IV. Conclusion

It is often impossible to get all the data on a single interface without the complications of going through multiple forms and windows. The college chatbot aims to remove this difficulty by providing a common and user-friendly interface to solve queries of college students and teachers. The purpose of a chatbot system is to simulate a human conversation. Its architecture integrates a language model and computational algorithm to emulate information online communication between a human and a computer using natural language. The college student and employee scan freely upload their queries. The chatbot provides fast and efficient search for answers to the queries and gets the relevant links to their question. A background research took place, which included an overview of the conversation procedure and tries to find out the relevant keywords related to that query to provide the proper link. The database storage includes information about questions, answers, keywords, and logs. We have also developed an interface. The interface developed will have two parts, one for users and the other for the administrator.

References

[1]. Priadko, Andrii O., Kateryna P. Osadcha, Vladyslav S. Kruhlyk, and VolodymyrA. Rakovych. " Development of a chatbot for informing students of the sched-ule." (2020).
[2]. Heryandi, A. "Developing Chatbot For Academic Record Monitoring in HigherEducation Institution." In IOP Conference Series: Materials Science and En-gineering, vol. 879, no. 1, p. 012049. IOP Publishing, 2020.
[3]. Gajra, Vrushil, Khwajaavais Lakdawala, Rahul Bhanushali, and Sunita Patil."Automating Student Management System Using ChatBot and RPA Technol-ogy." Available at SSRN 3565321 (2020).
[4]. Carayannopoulos, Sofy. "Using chatbots to aid transition." The InternationalJournal of Information and Learning Technology (2018) [5]. Cameron, Gillian, David Cameron, Gavin Megaw, Raymond Bond, MauriceMulvenna, Siobhan O'Neill, Cherie Armour, and Michael McTear. "Towardsa chatbot for digital counselling." In Proceedings of the 31st International BCSHuman Computer Interaction Conference (HCI 2017) 31, pp. 1-7. 2017.
[6]. Amey Tiwari, Rahul Talekar, Prof. S. M. Patil, "College Information ChatbotSystem", International Journal of Engineering Research andGeneral Science,Volume 2, Issue 2, April 2017.
[7]. Rachit Kulkarni, Ankit Methwani, Nakul Pawar, Charmi Valecha, Pooja Shetty,"College Chat-bot", International Journal of Advanced Research in ComputerEngineering Technology, Volume 6, Issue 4, April 2017.
[8]. Chaitrali S. Kulkarni, Amruta U. Bhavsar, Savita R. Pingale, Prof. Satish S.Kumbhar, "BANK CHATBOT - An Intelligent Assistant System Using NLPand Machine Learning", International Research Journal of Engineering andTechnology, Volume 4, Issue 5, May 2017.
[9]. Yash Mehta, Shreya Sawkar, "The college chatbot", International Journal of Computer Applications, Volume 173 - No. 7, September 2017. [10]. Prof. K. Bala, Mukesh Kumar, Sayali Hulawale, Sahil Pandita, "Chat-Bot ForCollege Management System Using A.I", International Research Journal of Engineering and Technology, Volume 4, Issue 11, Nov 2017