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A WEB-BASED COLLEGE ENQUIRY CHATBOT USING .NET AND DATASET

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Abstract- *A chatbot (also known as chatterbot or talkbot) is a system which used to make conversation between human and machine in textual method. The user only has to ask any query to chatbot which is present on webpage/ website, the chatbot has its own database (in which all information is stored already) with the help of that it identifies the users query and make decision itself and give answer to given question. Student can ask any questions related to college but only in that language in which our bot will understand it i.e. English in text format. The chatbot is built with some algorithms like sentence similarity bigram etc. from which when student will ask any query chatbot will first match the user query in database using sentence similarity method. In this method we used bigram which divides hole input sentence into set of two words. i.e. then it will easy to find answer from database/ dataset. If question is found invalid or not matched in dataset then an "Invalid question" response will be showed on screen. And if any answer found invalid then it can be deleted or modified by authorized person.*

Keywords- .net, Bigram, Chatbot, Webpage, Database.

I. INTRODUCTION

In day-to-day life we are using chatbots like Natasha from hike, messenger from Facebook, Siri from amazon etc. which is often aimed for requirements or just for entertainment. College enquiry chatbot will give answer to student's query's which is related to college. Chatbot have embedded knowledge which analyzes the student query and understand student message and then give response to that query [3]. This system is a web-application in which students will just have to select category for department query and then ask the question to chatbot. Students doesn't have to visit personally to college for enquiry, student can query related to admission, faculty details, departments, sports etc. through chatbot. If any new candidate enquirers for information about departments and for admission process then this bot will help to get answer of query of candidate. The chatbot will also maintain an eye on history of query's. From which it will show related results if any another new candidate will going to ask any query.

II. LITERATURE SURVEY

The first instance of a conversational agent (BOT) was born in 1966: ELIZA was a computer program that simulated a psychiatrist and rephrased user input using basic (by today's standards) natural language processing techniques [2]. Despite being relatively simple, the program managed to give the illusion of understanding the user's problems and successfully fooled a great many people. Its creator, Joseph Weizenbaum, even mentioned that his secretary would ask him to leave her so she could have a private conversation with ELIZA.

Then during several years, chatbots heavily followed ELIZA's approach with some additions brought into the field like speech synthesis and emotions management, sentence similarity. Then in 2001 came SmarterChild, a conversational agent developed by ActiveBuddy, Inc. (now Colloquies) that operated on AOL Instant Messenger and MSN Messenger. Inspired by the rise of instant messaging platforms such as SMS, SmarterChild was created to provide quick access to news, weather forecasts, sports results, TV news etc... The main innovation was that SmarterChild was connected to a knowledge base (Database) and detained useful information for its users[3]. Unfortunately, the technical limitations of natural language processing caught up with bots on those platforms at the time and they were forgotten by History.

The next advancement for conversational agents was made by a team at IBM through the Watson AI project that has been in development since 2006. The agent was designed with the sole purpose of winning the American TV show Jeopardy! Which it did in 2011 when competing against two of the show's former champions. Jeopardy! Is interesting from an NLP point of view since the questions involve a lot of play on words and require fast information retrieval in vast knowledge bases. Unfortunately, this AI in its past form could only answer to one-liner questions and was unable to carry on a proper conversation with someone else.

Finally in the early 2010's came the rise of virtual assistants such as Apple's Siri, Microsoft's Cortana, Google's Google assistant, Amazon's Alexa and others. Those agents brought in the field the concept of conversation as well as goal-oriented dialog. Another major event in the field of chatbots was the release of the Messenger Platform for Facebook Messenger in 2016 and allowed the creation of conversational agents for non-AI related companies.

As shown in this brief summary of the field of conversational agents (BOTs), a lot of progress has been made since the early days of NLP.

III. PROPOSED METHODOLOGY

This system is mainly designed for students to stay updated with their college activities. The main function of this project is to give response to students whenever they ask any query online on college site. From which stress over office staff will be reduce and also students don't have to go college every time whenever they want to query anything. The chatbot has all information and details stored in a dataset which is stored online on server. Dataset is made on SQL file, which makes it easy to handle[5]. Chatbot will also use bigram and tokenization etc. terms for finding correct answer from dataset[1][4].

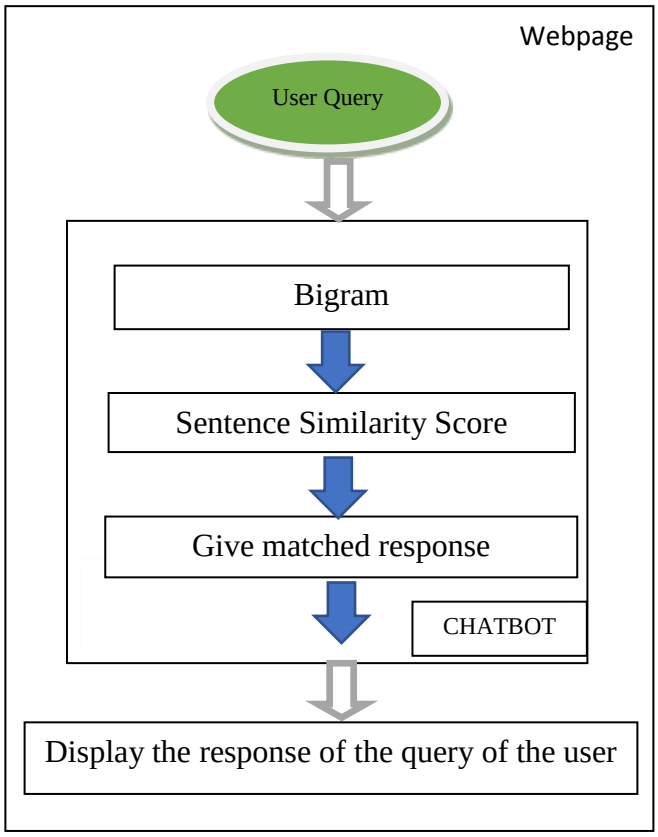
- ALGORITHM –

This system consists of – Client, Server, Content acquisition.

The server is a simple internet-based application service provider. In which we make a webpage on which we are going to install our chatbot. We programmed our chatbot on .net on Microsoft Visual Studios and also designed and programmed on Microsoft Visual Studios in which we can easily link our chatbot to webpage. SQL is used for making Dataset. All information is stored in an SQL file which is also available on Visual Studios. We can also implement an application on visual studios on which we can implement our chatbot on that from which we can ask any questions or we can use our chatbot on our Android phones.

1) Design a webpage.
2) Do required programming for webpage.
3) Program your chatbot on .net.
4) Make new project on Microsoft Visual Studios.
5) Make a dataset on SQL.
6) Link your dataset with your chatbot.
7) Now link your chatbot with your webpage.
8) Now start your chatbot by first login from your admin page.

- FLOWGRAPH –



IV. EXPERIMENTAL RESULTS

The output of chatbot is shown below –

Fig. 4.1 College profile photo

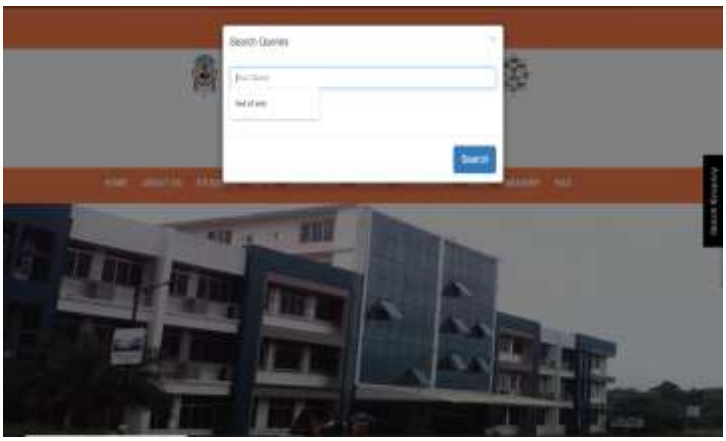


Fig. 4.2 User input enquiry

As shown in fig. 5.2 the student have to ask any question related to college departments. And then just click on search button to find answer.

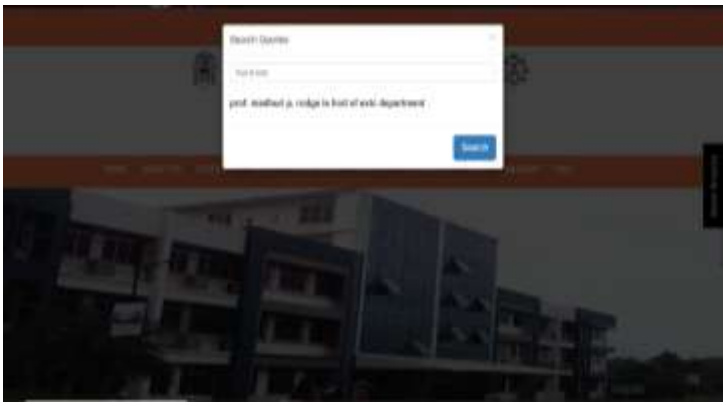


Fig. 4.3 Output to the user query

As shown in above figure, after clicking on search button chatbot will show the related result below the question asked.

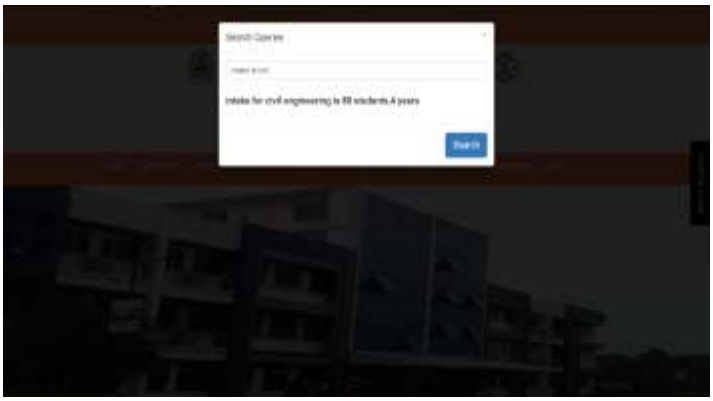


Fig. 5.4 Admin login page

As shown in above fig. 5.4 only Admin or authorized person can login into this page with help of username and password. As you can see admin can change the question and answers as per requirement from college.

V. CONCLUSION

The development of this chatbot is done using .net language on Microsoft visual studios on aspx.cs file. And the dataset is created on SQL server from which it was easy to link both chatbot and dataset together for getting appropriate answer. The user can ask any query related to their college and get appropriate answer on basis of pattern matching algorithm.

VI. FUTURE SCOPE

In this project we can also include some AI functionality from which or chatbot can also find answers from internet or from any other sources. We can also include voice based chatting. User only have to ask query in voice format and then chatbot will also give response in voice format with simultaneously showing response in text format on screen. For that we only have to include text-to-speech and speech-to-text function in our project.

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