

SFITBOT

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Abstract- A chatterbot/chatbot is an artificial intelligence (AI) program that simulates interactive human conversation by using key pre-calculated user expressions along with auditory signals. It plays an important role in basic customer service and marketing systems that patronize social networking hubs and instant messaging (IM) clients, chatting about products or services. The SFITBOT will be a bot system for answering FAQs of the students at the college level. In the proposed system, information will be accepted in the form of natural language. The result of the SFITBOT will be a higher level of interaction with the teachers and college which will help in learning as well as increase the availability of information that the student may find difficult to obtain. The implementation will be done using AIML and concepts of keyword matching with data being stored over the database. It will give the student the impression of interacting with a real teacher or staff.

Index Terms- - AIML, KB, NLG, NLP, PHP

I. INTRODUCTION

In the present-day globalized society, the increasing evolution in the field of Information Technology and the Internet have led to the creation of well-defined methods of communication among users in virtual environments. There are interfaces that provide new forms of action between human and machine. These approaches require an additional effort by the users, since the natural language is the common method of communication between humans. Thus, more appropriate interfaces allow the base of dialogues in natural language and also make the human-machine interaction more captivating and powerful in terms of empathy. This is the reason ChatBOTS were designed and developed.

A Chat BOT is a computer program which conducts a conversation via auditory or textual methods. This is designed to engage in small talk with aim of passing the Turing Test by fooling conversational partner into thinking that the program is a human. A ChatBOT is a conversational software agent, which acts with users using natural language. ChatBOTS are simple to use in which you "chat" textually with the bot over a computer screen. The BOT usually begins by introducing itself. Users can respond with a statement or question. The BOT consults its knowledge base or programming languages and replies. The conversation continues as long it is interesting or useful for humans. BOT will render some sort of aid viz; providing timetables for lectures and exams, assignments, projects, etc. We are designing a CHATBOT exclusively for St. Francis Institute of Technology. It can also be used in other colleges, universities with some modification of databases.

II. RELATED WORK

The idea of Chatbot systems initiated in the Massachusetts Institute of Technology and Weizenbaum implemented the ELIZA Chatbot to simulate a psychotherapist. Then PARRY was implemented to simulate a paranoid patient. "Colby uses PARRY as a useful tool to examine the cause of paranoia, and regarded ELIZA as a potential clinical agent who could, within a time-sharing model, autonomously handle some hundred patients an hour". ALICE was a ChatBOT implemented for the BRAC University.

III. CONTENT DESCRIPTION

ChatBOTS are simple to use in which you "chat" textually with the bot over a computer screen. The BOT is seen to introduce itself. You respond with a statement or question. The BOT consults its knowledge base or programming languages and replies. The conversation continues as long it is interesting or useful for humans. The Chatbot as mentioned before is an interactive way for communication between the college faculties and students. The strength of a Chatterbot can be directly measured by the degree of the output selected by the Bot in response to the user.

The main functionalities of SFITBOT are as follows:

Effective and less tedious process for a student to obtain info.

Students faced with queries have to just login and enter their queries SFITBOT will respond to the user within seconds student will spend less time inquiring about things like events schedules and other doubts

The responses will be generated by pattern matching of the keywords in the query. A keyword is just a sentence (not necessarily a complete one) or can even be a word that the program might identify from the user's input which then makes it possible for the program to react to it

Another important function is the upload query option so that teachers can also upload details of their lectures or other information which may pertain to an individual class or department, it being a dynamic system, after updation will provide better results over the period of time, it also does not need the user to download any additional software to use this service.

A. Proposed System

In this project, we are designing a chat robot that is specifically tailored for providing FAQ BOT system for SFIT students. The main goal of this system is to

conveniently obtain information without having to look or browse through several web pages to get answers to frequently asked questions. The SFIT BOT accepts natural language input from the users, which navigates through the Database and will respond with student information in natural language. The system utilizes AIML (artificial Intelligence Markup Language) for developing a chat bot.

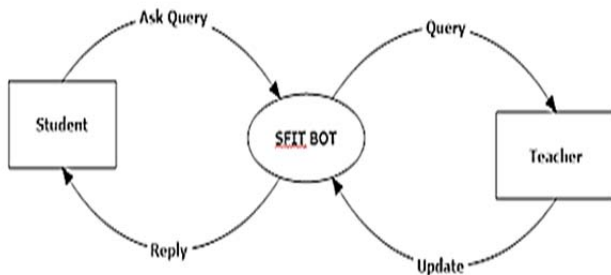


Fig1. DFD Diagram Level 0

The service provided is accessible through a web application which allows multiple users to communicate at any given time and place. By introducing an artificial brain, the web based bot generate customized user responses. Questions asked to the bot, which is not present in the database currently is further processed by sending it to related faculty, which in turn, will provide a response. This response is archived, improving the system’s database for future generation of responses.

B. Interaction with the User

From the user’s view, the website has a chat cover using which the user can chat with the BOT. Any information the student requires, he can directly enter it into the message window. The chatbot takes this input and matches it with the program responses. It then provides information in its responses and in the form of links.

IV. CONTENT DESCRIPTION

The two main components are the website and the chatbot. They are integrated coherently to provide a good user experience.

A. Website

The website is coded using HTML/CSS with PHP used for database and scripting. The website has a MySQL database that stores the college and student details.

B. Chatbot

From the chatterbot utilizes AIML, to fetch responses based on user input. AIML is a simple scripting language for providing intelligence to chatbots and other conversational entities. It’s a simple scripting language with the goal of being simple to study, quick to type, and easy to read and maintain. The core feat of the SFITBOT has the following major features:

1. **Dynamic:** The chatbot is a dynamic tool which answers all the questions of the users in a language which is understandable by the users.
2. **User-friendly:** The chatbot is a user-friendly application which provides the user an interface to ask any queries he/she has in a very easy manner. Users can also view images and PDF as answers.
3. **Emails:** If a particular question is not present in the database, the chatbot offers the user to mail the respective teacher about his/her doubt.
4. **Upload Query:** The chatbot provides the teachers to upload an answer to the questions asked by the user. These answers can be in the form of word documents, images and also PDF files.

The basic syntax of AIML follows the convention where <pattern> denotes a question whereas <template> denotes a response to the question. This is illustrated below:

```

<category>
    <pattern>hie</pattern>
    <template>heyya</template>
</category>
    
```

In the above example:

If user inputs: hie
 BOT output: heyya/hie.

V. WORKING

The above SFIT BOT is designed for our college to enable students obtain information in a more effective manner. The working of the entire system can be explained as follows:

- A Student of SFIT types a Query in the SFIT BOT system in a Natural Human English Language
- This Query being matched with the data in the database and generating Response which is sent back to the Student.

The basic language of code for this project is AIML

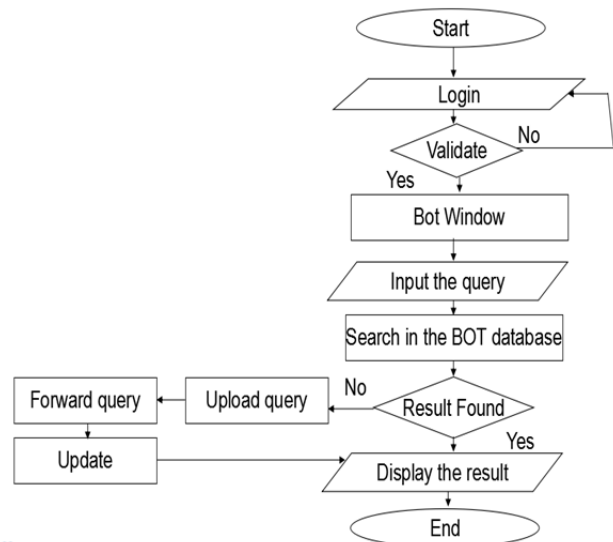


Fig 2. Flowchart

The working of the BOT in detail will go as follows:

- It starts with a student or teacher logging into the system, the username and password of which will be already into the College database.
- Now there are two user-instances i.e. Student and Teacher
- When the student logs in, a chat window appears. The student is to type in the query here.
- The query is fed into the BOT and the system will send the result to the database.
- The query can be asking marks, college activities and other college related information by just typing the keywords in the chat box.
- A pattern matching feature is used which will send the most likely response back to the user. The database contains all the most likely queries with the respective responses.
- In case the query's answer is not available you can add a query to the database using the 'upload query' button .
- An added functionality is the email-service wherein if the student has a doubt he can enter his query which will be mailed by the system to the respective teacher.
- When the teacher logs in, another chat window appears. Here the teacher is provided with a 'upload file' option to upload assignments and other documents for the students.



Fig 5. Email window for the student

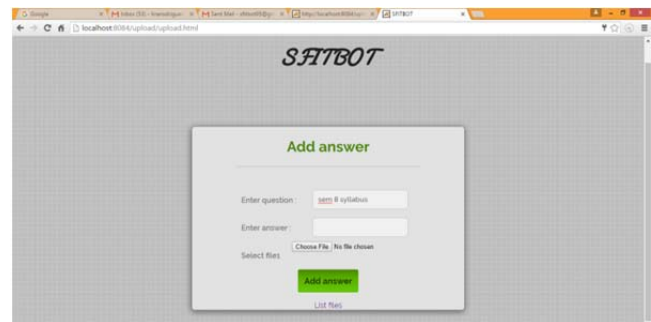


Fig 6. Query window for Teacher

VI. CONCLUSION

SFIT BOT is a computer program which conducts a conversation via textual methods based on Artificial Intelligence. This is designed to engage in small talk with conversational partner thinking that the program is a human. Even though large amount of information is available on the web, students often like to have personal interaction with the teacher. In such an environment, a chat bot could be designed for providing academic advice. The main goal of such a system is to effectively retrieve information without having to look or browse through several web pages to fetch answers of frequently asked questions. This System also helps the teacher to interact with the students in an effective and faster manner.

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REFERENCES

- [1] Toward an Ontology-Based Chatbot Endowed with Natural Language Processing and Generation Dec 2014
- [2] ARTIFICIAL INTELLIGENCE MARKUP LANGUAGE: A BRIEF TUTORIAL Maria das Graças Bruno Marietto¹, Rafael Varago de Aguiar¹, Gislene de Oliveira Barbosa¹, Wagner Tanaka Botelho¹, Edson Pimentel¹ Jul 2013
- [3] Chatbots are natural web interface to information portals Bayan Abu Shawar Information Technology and Computing Department Arab Open University, Jordan b_shawar@aou.edu.jo March 2008
- [4] Implementation of ALICE chatbot as domain specific knowledge bot for BRAC U (FAQ bot) By Johan Rahman (11141002) 2012
- [5] Building an AIML Chatter Bot Knowledge-Base Starting from a FAQ and a Glossary Giovanni De Gasperis 2010



Fig 3. Basic chat window of SFITBOT

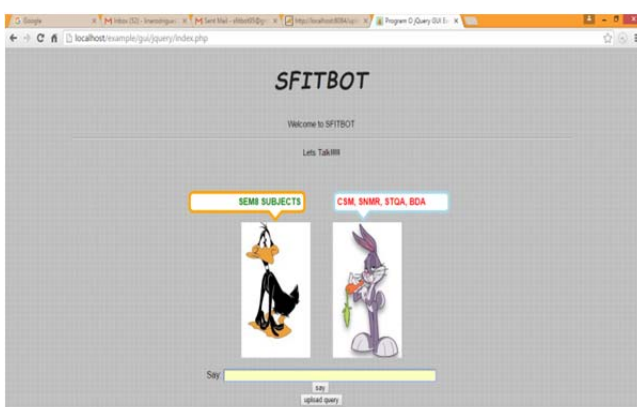


Fig 4. Chat window with student asking Sem 8 subjects