A
SYNOPSIS
ON

Automated Hybrid Chatbot for better Student Academic Support.

Submitted in partial fulfillment of the requirement for the award of degree of

BACHELOR OF ENGINEERING
IN
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1. Introduction:

User interfaces for software applications can come in a variety of formats, ranging from command-line, graphical, web application, and even voice. While the most popular user interfaces include graphical and web-based applications, occasionally the need arises for an alternative interface. Whether due to multi-threaded complexity, concurrent connectivity, or details surrounding execution of the service, a chat bot based interface may suit the need.

Chat bots typically provide a text-based user interface, allowing the user to type commands and receive text as response. Chat bots are usually a stateful services, remembering previous commands (and perhaps even conversation) in order to provide functionality. When chat bot technology is integrated with popular web services it can be utilized securely by an even larger audience. A conversation is an assimilation of information where one creates differences and similarities during the duration of a conversation. Depending on the level of intelligence the experience would be enjoyable and a true emulation of a virtual entity

The process of an online chat system would follow a client server approach which acquires the signal and streams it to a server. Server response generation can be broken down into two categories: data retrieval and information output. The core focus of this project is to improve the information output by generating a response that is relevant to the request, factual and personal.

2. Problem statement:

In this digital world, there is a need for developing technologies which facilate communication easily and interactively. Everyone in the society should be able to utilize techonology to study, learn or create something creative.. some may be limited by their knowledge about computer system. Thus an interactive communication needs to be enabled. Using voice based chatbots and natural language the users can learn new things without learnig computers from sctrach.

To design and develop online chatting system using knowledgeable database and interpreter which will be employed as a function of pattern matching.

In today's world as there are everything is digital in education system work is very lengthy and time consuming and also required extra manpower. If any student have even a small single query they have to personally go to the college office.

It consumes college time of the student and also require extra manpower. Most of the time student have to wait due to absence of particular staff or when the staff is busy. Student have to present in the college if he/she wants to see document related to college like notice .Due to all this work of the staff is also increased

3. Objective :

The user can query about the college related activities through online with the help of this web application. The user can query college related activities such as date and timing of annual day, sports day, and other cultural activities. This system helps the student to be updated about the college activities.

o A Student Information Chat Bot project is built using artificial algorithms that analyzes user's queries and understand user's message.
o This System is a web application which provides answer to the query of the student very effectively.
o This system helps the student to be updated about the college activities.
o The user can query about the college related activities through online with the help of this web application.
o Students can chat using any format, as there is no specific format that the user has to follow.
o The answers are appropriate what the user queries. If the answer found to be invalid, user just need to select the invalid answer button which will notify the admin about the incorrect answer.
o Admin can view invalid answer through portal via login
o System allows admin to delete the invalid answer or to add a specific answer of that equivalent question.
o The user does not have to personally go to the college for enquiry.
o The system analyzes the question and then answers to the user.
o The system replies using an effective Graphical user interface which implies that as if a real person is talking to the user.

4. Literature survey:

1. Al`es, Z., Duplessis, G.D., Sֵerban, O., Pauchet, A.: A methodology to design humanlike embodied conversational agents. In: International Workshop on Human-Agent Interaction Design and Models (HAIDM'12). Valencia, Spain (2012), https://hal.archives-ouvertes.fr/hal-00927488

2. Anderson, J.R., Boyle, C.F., Reiser, B.J.: Intelligent tutoring systems. Science 228(4698), 456–462 (1985). https://doi.org/10.1126/science.228.4698.456, http://science.sciencemag.org/content/228/4698/456

3. Angeli, A.D., Johnson, G.I., Coventry, L.: The unfriendly user: Exploring social reactions to chatterbots. In: Proceedings of International Conference on Affective Human Factor Design. pp. 467–474. Asean Academic Press (2001)

4. Dutta, D.: Developing an intelligent chat-bot tool to assist high school students for learning general knowledge subjects. Tech. rep., Georgia Institute of Technology (2017)

5. Goel, A.K., Polepeddi, L.: Jill Watson: A Virtual Teaching Assistant for Online Education. Tech. rep., Georgia Institute of Technology (2016) 12 X. S´anchez-D´ıaz et al.

6. Huang, J., Zhou, M., Yang, D.: Extracting chatbot knowledge from online discussion forums. In: Proceedings of the 20th International Joint Conference on Artifical Intelligence. pp. 423–428. IJCAI'07, Morgan Kaufmann Publishers Inc., San Francisco, CA, USA (2007)

7. Jia, J.: CSIEC (computer simulator in educational communication): An intelligent web-based teaching system for foreign language learning. CoRR (2003), http://arxiv.org/abs/cs.CY/0312030

8. Makinson, D.: Sets, Logic and Maths for Computing. Springer-Verlag (2012)

9. Reyes-Gonz´alez, Y., Mart´ınez-S´anchez, N., D´ıaz-Sardi˜nas, A., Patterson-Pe˜na, M.: Conceptual clustering: a new approach to student modeling in intelligent tutoring systems. Revista Facultad de Ingenier´ıa 0(87), 70–76 (2018). https://doi.org/10.17533/udea.redin.n87a09, https://aprendeenlinea.udea.edu.co/revistas/index.php/ingenieria/article/view/327565

10. Russell, S., Norvig, P.: Artificial Intelligence: A Modern Approach. Prentice Hall, Upper Saddle River, NJ, USA, 3 edn. (2010)

5. Methodology:

Our proposal considers two main phases:

1. Knowledge modeling:

     This phase determines how knowledge is represented and stored in the knowledge base.
2. Conversation flow:

     This section presents the formal definitions and foundations of the proposed methodology first. Later, each phase is described and contrasted with real-life queries. Finally, since implementation details vary across different conversation frameworks, they are not covered per se in the methodology. Nevertheless, conflict resolution and good implementation practices are broadly presented along a case study.

The system comprises of 3 modules as follows:

1. Admin Login:
   - User has to login to the system to access various helping pages through which user can ask queries to the system with the help of bot.

2. Bot Chat:
   - User can chat with the bot it implies as if enquiring to the college person about college related activities.

3. Text to Speech:
   - The bot also speaks out the answer.

6. Hardware and Software Requirement

- Hardware specification:

Processor:	Intel core Duo 1.2 GHz or higher
	AMD Ryzen 2 1.0 GHz or higher
Ram:	2 GB DDR4 2400 MHz or higher
Host OS:	Windows 7 SP1, Ubuntu Linux 16.07

- Software specification:

Front-End:	HTML 5, JavaScript (ECMA script 6)
Development Environment:	Microsoft Visual Studio 2019,
	PyCharm Community Edition 2020.1.2
Back-End:	Python (Tensorflow-keras-Django-Flask)
UI Interfacing:	CSS 3
VCS (Version Control System):	Local – Git 2.27
	Cloud- Microsoft Github