# College Enquiry Chat Bot

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***Abstract*—** Chat bots typically provide a text-based user interface, allowing the user to type commands and receive text as well as text to speech response. Chat bots are usually stateful services, remembering previous commands 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. The college enquiry chat bot will be built using artificial algorithms that analyzes user's queries and understand user's message. This System will be a web application [3] which provides answer to the query of the student very effectively. Students just have to put their query to the bot which is used for chatting. The system will use the artificial intelligence algorithms to give appropriate answers to the user. If the answer is found invalid, then some system to declare the answer as invalid can be incorporated. These invalid answers can be deleted or modified by the admin of the system. The student will not have to go to the college for enquiring something. Student can use the chat bot to get the answers to their queries. Students can use this web based system for making enquiries at any point of time. This system may help students to stay updated with the college activities.

***Keywords-*** *chatbot, chatterbot, pattern matching, keyword matching.*

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## I. INTRODUCTION

A chat bot (also known as a talk bot, Bot, chatterbox, Artificial Conversational Entity) is a computer program which conducts a conversation via auditory or textual methods [1][2]. Such programs are often designed to convincingly simulate how a human would behave as a conversational partner, thereby passing the Turing test.

Chat bots are typically used in dialog systems [1] for various practical purposes including customer service or information acquisition [2].

Chat bots are often integrated into the dialog systems of, for example, automated online assistants, giving them the ability of, for example, small talking or engaging in casual conversations unrelated to the scopes of their primary expert systems [2][3].

College Enquiry Chat Bot project will be built using artificial intelligence algorithms that will analyze user's queries and understand user's message. This system will be a web application which will provide answers to the queries of the students. Students will just have to select the category for the department queries and then ask the query to the bot that will be used for chatting.

Artificial intelligence will be used to answer the students' queries. The student will get the appropriate answers to their queries. The answers will be give using the built in artificial intelligence algorithms. Students won't have to go to the college to make the enquiry.

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. The system replies to the user with the help of effective graphical user interface. 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.

The proposed system will also have an online notice board. On this notice board, any Text notices or PDF documents can be displayed. This will help the user to be updated with the important notices. Not much time will be wasted by the user to search for the important notices.

The answer to the query will be answered on the basis of the user's queries and the knowledge base. The important keywords will be fetched from the keywords and the answer to those keywords will be searched in the knowledge base. If the match is found, the relevant answer will be provided to the user or the default message will be shown to the user that "Answer to this query is not available at the moment, please revert back after some time". The "Keyword Matching" algorithm will be used to match the keywords from the knowledge base

In some cases, user may find out that the answer given to his/her query is not relevant. In such cases, the user can mark this answer as Invalid, and an instance of this invalid answer will be sent to the Admin panel at the same time. Whenever Admin will log in, he will get to see the answers which are marked invalid and then he can do the necessary changes to the knowledge base so that user will get the proper result when he will ask the same query next time.

The system will have two types of users. First type of the user will be the Admin, who will handle the entire system, and the other type of the user will be Students. There will be two types of students, registered ones and unregistered ones. The registered users will have to log in using the User ID and Password provided to them and after successfully logging in, student can ask his queries. The unregistered users will have to first register themselves in the system by filling up the simple registration form. Then after successful registration, the student can ask his queries.

To access this system, user needs to have a web services enabled device. The system proposed system will be a web based system. So the entire project will be hosted on a cloud platform. The users can access this system from any place and at any time. The response time to the queries of the user will depend upon the internet speed of the user. If user has a decent internet connection, he/she will get the answers to his/her queries in the usual time. The usual reply time will be around 3-5 seconds as the process involves fetching the keywords from the user's query, searching it in the knowledge base and then showing the output. This process will take some time, which is estimated to be 4 seconds approximately. If the user has a bad internet connection, it will take some more time for him to get the output. But even in the worst case, the response time will not exceed 15 seconds..

## II. RELATED WORK

- A.L.I.C.E. (Artificial Linguistic Internet Computer Entity):

A.L.I.C.E (Artificial Linguistic Internet Computer Entity) which is an award winning open source natural language artificial intelligence chat robot which utilizes AIML (Artificial Intelligence Markup Language) to form responses to queries. Alicebot engine and AIML are freely available under the terms of the **GNU General Public License** (used by GNU/Linux and thousands of other software projects). The A.L.I.C.E. project includes hundreds of contributors from around the world.

This is the general Chabot available in the industry which can be used for various purposes. But, there is no Chabot for making college enquiries. Thus, we are designing a Chabot which will help students to do necessary enquiries without even going to the college.

## III. DESIGN

The college enquiry chat bot will take the query from the user and will give the appropriate answer to the user query. The user can even mark the answer given by system as invalid, if he/she finds that the answer is not relevant to the query.

The user will just have to visit the web page of chat bot and interact with the bot to get the answers to their query.

The proposed system will have the following modules:

- Online Notice Board
  - Text Notices
  - PDF / HTML Notices can be displayed in the systems
- Online Chat Bot
  - The query will be answered basis the question and knowledge base automatically.
  - Hence no need to have a person to answer the queries and ease for the users to interact with college queries
- Users
  - There will be two types of users: Admin and Normal
  - Admin user will be able to see the invalid answers marked by the users and update the system with the right answers and keywords

In the future scope of the project, we can also include the voice based queries in to the system which can be achieved by using relevant APIs.

*Use Case Diagram*:

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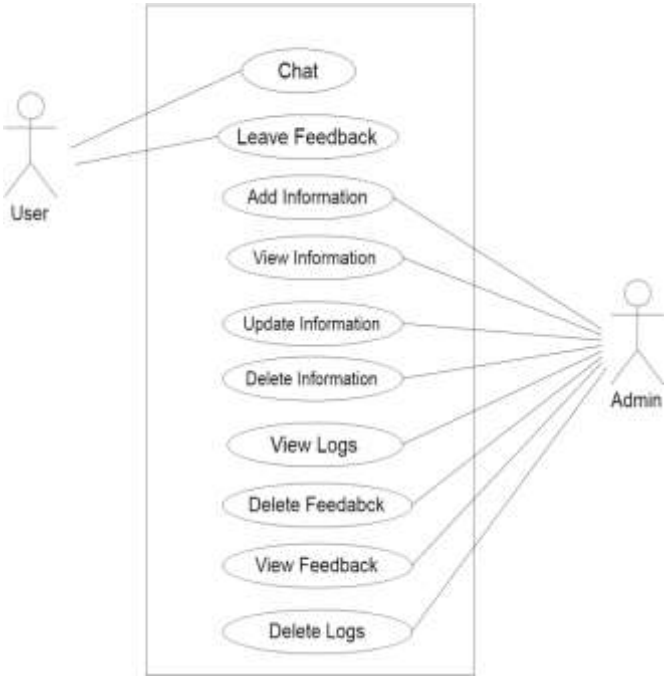
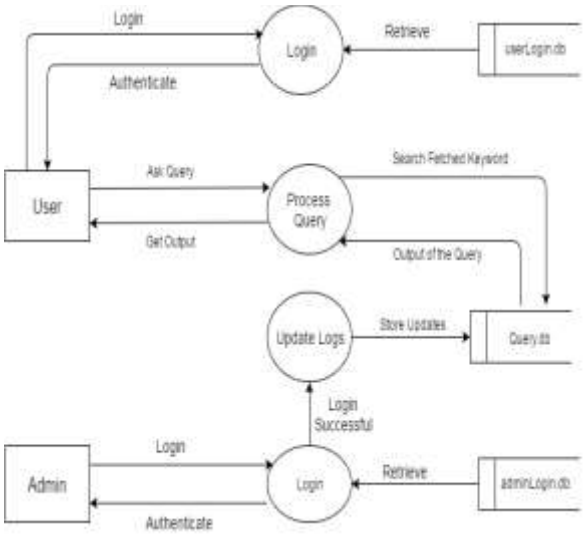



*Data Flow Diagram:*

Level 0:


Level 1:

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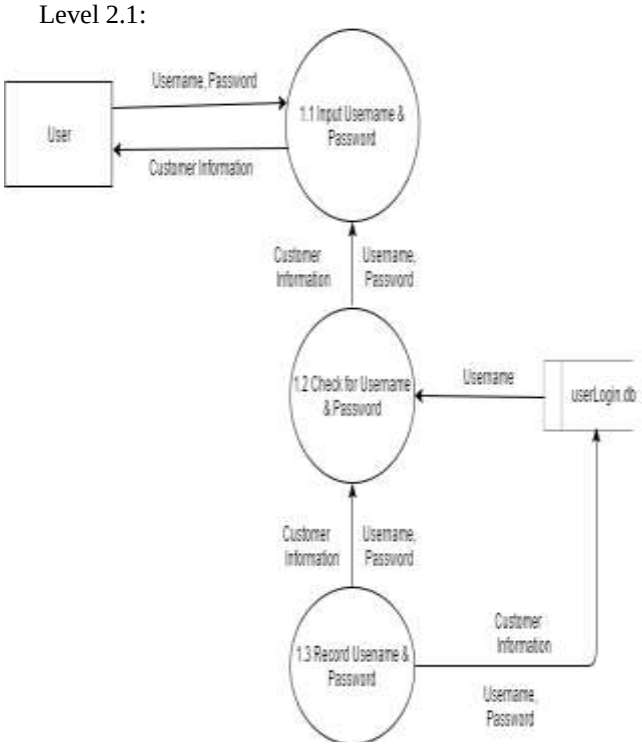


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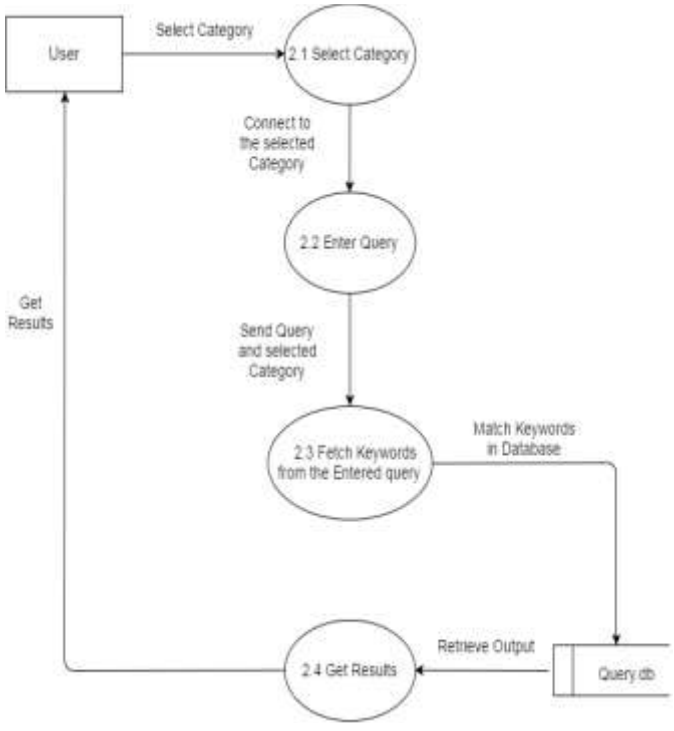
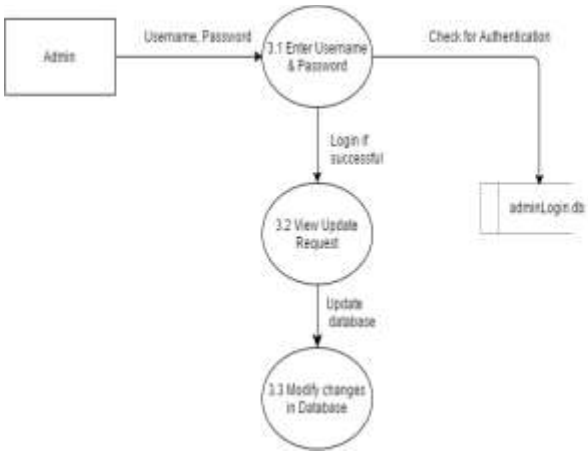


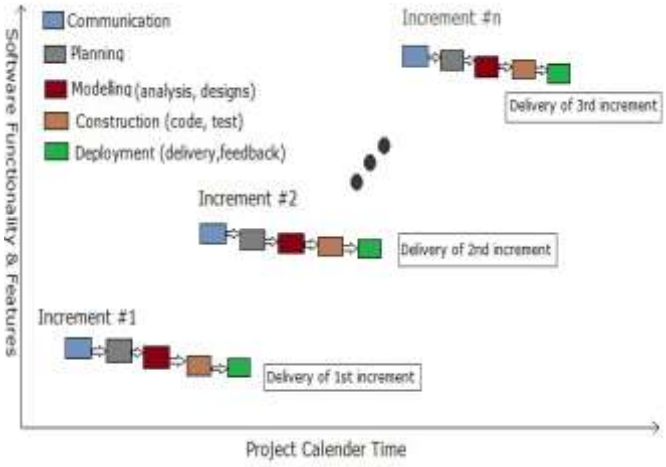
Level 2.3:




## IV. METHODOLOGY

The incremental build model is a method of software development where the product is designed, implemented and tested incrementally (a little more is added each time) until the product is finished.

This model combines the elements of the waterfall model with the iterative philosophy of prototyping.




The basic algorithm that will be implemented for working of this proposed system is as follows:

**Step 1**: Start.

**Step 2**: Get the user query. (INPUT)

**Step 3**: Pre-processing of the query E.g. suppose there is this query "what are the subjects for CSE first year" So, we are going to remove these stop words like 'is', 'the' using pre-processing technique.

**Step 4**: Fetch the remaining only keywords from the query.

**Step 5**: Match the fetched keywords with the keywords in Knowledge base, and provide an appropriate response. The keywords will be matched with the help of keyword matching algorithm.

**Step 6**: Return the query response as an output to the user.

**Step 7**: Exit.

**Future Scope**

In the future scope of this project, we can include voice based queries. The users will have to give voice input and the system will give the text output and while giving it, it will give a voice output as well.

## V. CONCLUSION

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 interface. The 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. A database will be developed, which will store information about questions, answers, keywords, logs and feedback messages. A usable system will be designed, developed and deployed to the web server.

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