College Chatbot With Integrated A.I

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ABSTRACT

For a student interface web applications can come in a different of formats, ranging from command-line, graphical, web application, and even voice. While the most popular user interface 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 provide a text-based user interface, allowing the user to type commands and receive text as well as text to speech response. Web application using Chat bots are usually a form full services, remembering previous 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.

Keywords: Chatbot, Artificial Intelligence

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. Such programs are every time designed to determine how a human would behave as a conversational partner, thereby passing the Turing test. It is used in dialog format for various practical purposes including customer service or information acquisition. Chat bots are usually converted into the dialog systems of, for example, automated online assistants, giving them the ability of, for example, small talking or engaging in normal conversations unrelated to the important of their primary expert systems. College Enquiry Chat Bot project will be built using artificial intelligence algorithms that will analyze users queries and understand users 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. The answer to the query will be answered on the basis of the user 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 accurate result when he will ask the same question next time. The system will have two types of users. First of all the user will be the Admin, who will handle the whole system, and the other type of the user will be Students. Without the registration no user can access system and after the registration user will have ID and password for login purpose after that student can ask questions to system. Then after successful registration, the student can ask his queries. To access this system, student should have web service net connected device. The student can access this system from any place and at any time. The response time to the questions 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 users query, searching it in the knowledge base and then showing the output. If the user has a bad internet connection, it will take some more time for him to get the output.

MODULES

My project "CHATBOT" is broken into small modules so that I will complete my

project easily and make it effective. I broke/split/divide my project in different

modules as follows:

1. Messaging: This module allow user to send message and receive messages

2. Natural Language Processing(NLP) : This module includes process user input / output from speech to text and text to speech

3. Implement AI : In this module we will implement an Intelligent . It contain various steps include:

▢ EDA (Exploratory Data Analysis) & Data Cleaning

▢ NLP on training Data

▢ Build Model (Neural Networks)

▢ Evaluation

▢ Deployment

BENEFITS
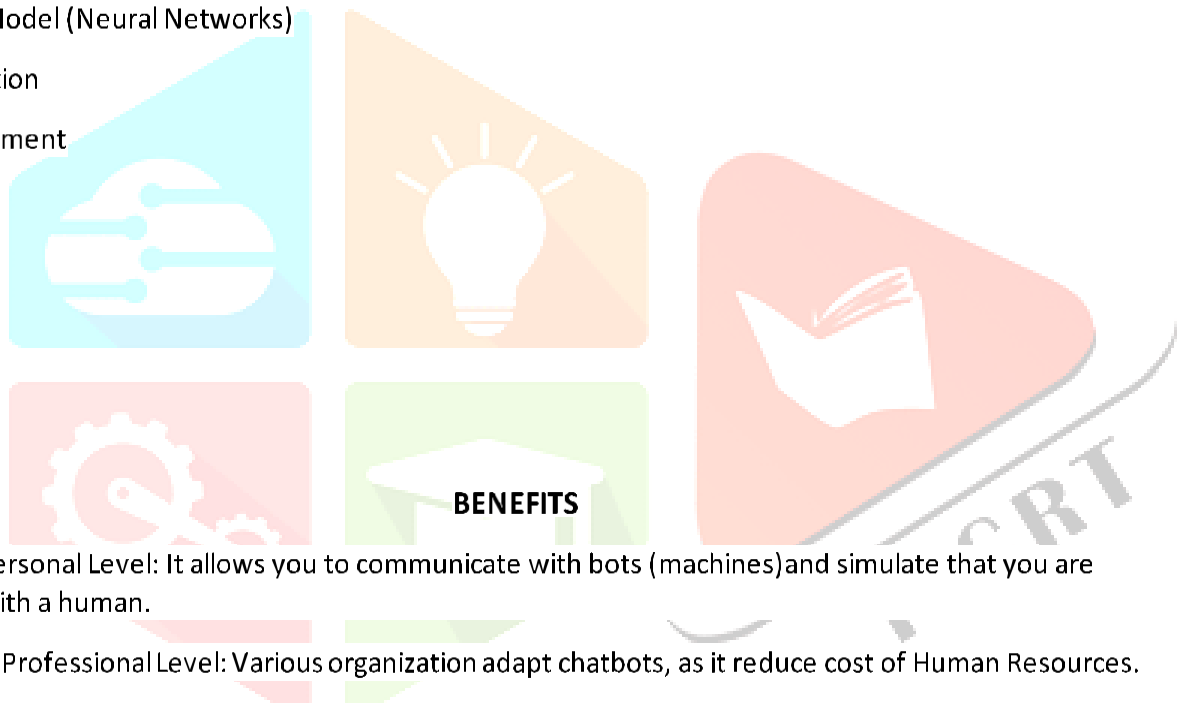
▢ On a Personal Level: It allows you to communicate with bots (machines)and simulate that you are talking with a human.

▢ On the Professional Level: Various organization adapt chatbots, as it reduce cost of Human Resources.

▢ At the Company Level: It allows have a conversation with your audience gain customer feedback, and elevate your brand.

FEATURES

⬜ Save time and money

⬜ Generate new leads

⬜ Guide users

⬜ It provides support 24 x 7

⬜ Secure and reliable

PROJECT LIFE CYCLE

The waterfall Model is a linear sequential flow. In which progress is seen as flowing steadily downwards (like a waterfall) through the phases of software implementation. This means that any phase in the development process begins only if the previous phase is complete. The waterfall approach does not define the process to go back to the previous phase to handle changes in requirement.
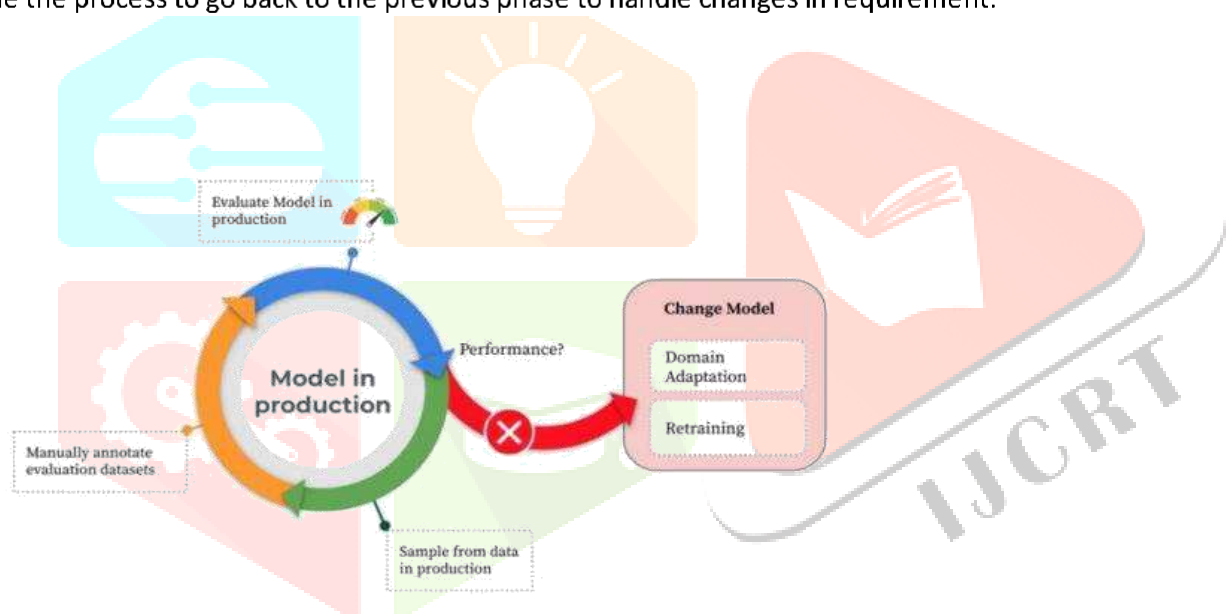
TECHNOLOGY USED

Python is a general purpose programming language. Hence, you can use the programming language for developing both desktop and web applications. Also, you can use Python for developing complex scientific and numeric applications. Python is designed with features to facilitate data analysis and visualization.

In, February 1991, van Rossum published the code (labeled version 0.9.0) TotalSource's. Already present at this stage in development were classes with inheritance, exception handling, functions, and the core data-types of list, duct, strand so on. Also in this initial release was a module system borrowed from Modula3; Van Rossum describes the module as "one of Python's major programming units". Python's exception model also resembles Modula-3's, with the addition of an else clause. In 1994 comp.lang.python, the primary discussion forum for Python, was formed, marking a milestone in the growth of Python's userbase.

Python reached version 1.0 in January 1994. The major new features included in this release were the functional programming tools lambda, map, filter and reduce. Van Rossum stated that "Python acquired lambda, reduce(), filter() and map(),courtesy of a Lisp hacker who missed them and submitted working patches".
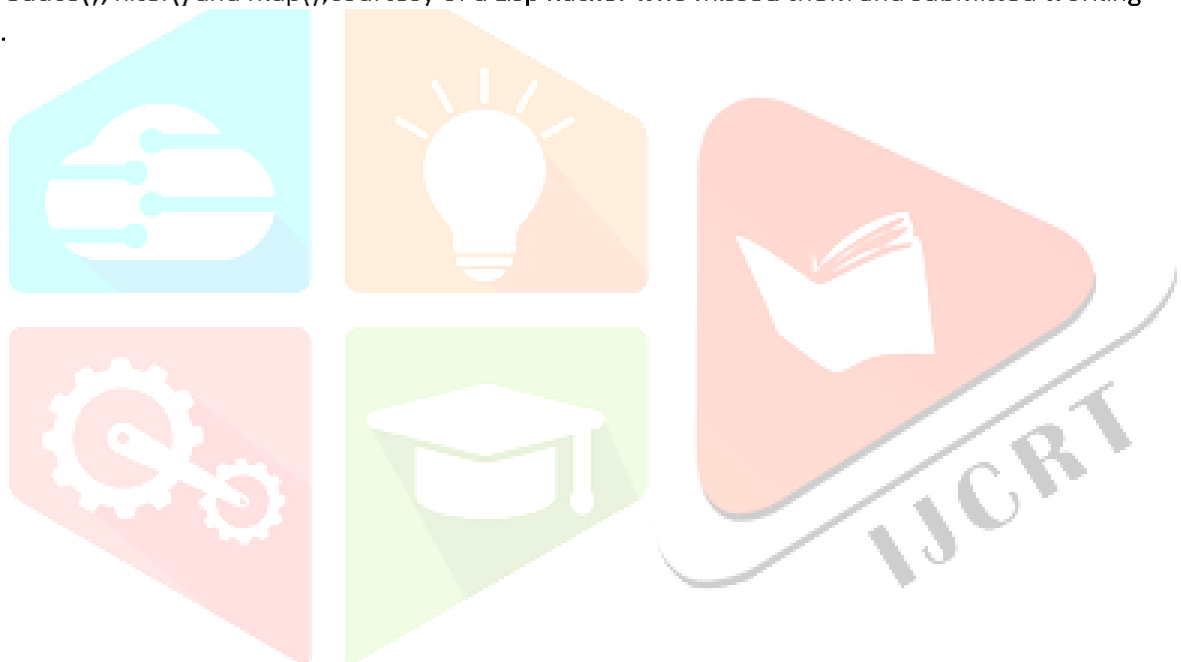
INTRODUCTION TO AI

Artificial intelligence (AI) is defined as intelligence exhibited by an artificial entity. Such a system is generally assumed to be a computer.

Although AI has a strong science fiction connotation, it forms a vital branch of computer science, dealing with intelligent behavior, learning and adaptation in machines. Research in AI is concerned with producing machines to automate tasks requiring intelligent behavior. Examples include control, planning and scheduling, the ability to answer diagnostic and consumer questions, handwriting, speech, and facial recognition.

APPLICATIONS OF AI

Game Playing :

You can buy machines that can play master level chess for a few hundred dollars. There is some AI in them, but they play well against people mainly through brute force computation --looking at hundreds of thousands of positions.

Speech Recognition :

In the 1990s, computer speech recognition reached a practical level for limited purposes. Thus United Airlines has replaced its keyboard tree for flight information by a system using speech recognition off light numbers and city names. It is quite convenient. On the other hand, while it is possible to instruct some computers using speech, most users have gone back to the keyboard and the mouse as still more convenient.

Understanding Natural Language :

Just getting a sequence of words into a computer is not enough. Parsing sentences is not enough either. The computer has to be provided with an understanding of the domain the text is about, and this is presently possible only for very limited domains.

Computer Vision :

The world is composed of three-dimensional objects, but the inputs to the human eye and computer's TV cameras are two dimensional. Some useful programs can work solely in two dimensions, but full computer vision requires partial three-dimensional information that is not just a set of two-dimensional views. At present there are only limited ways of representing three-dimensional information directly, and they are not as good as what humans evidently use.

PROBLEM DEFINITION AND MOTIVATION

A chatbot is a computer program that is designed to simulate conversation with the users, often over Internet. Furthermore the analogy that chatbot often treats a conversation like a game of tennis can be used to describe the conversation flow of the chatbot, i.e. get message, reply, get message, reply, and so on (The Oxford Dictionary, 2018). Deryuigna (2010) provides almost the same definition, but adds the word 'intelligent' before communication, specifying the need for intelligent replies rather than just random ones. The chatbot technology has been referred to by many names, the more established ones include: Chatbot (can be spelled chat bot, chat-bot as well), Chatterbot, Conversational Agent, Conversational System and Pedagogical Agent (or Intelligent Pedagogical Agent, IPA). The last is exclusively used in educational settings or educational papers. (Deryugina, 2010; Doering, Veletsianos, and Yerasimou, 2008; Heller and Procter, 2009). Chatbots are build in many ways, but a popular and quite simple way is through the use of AIML, which is presented in the next section.

Chatbots are trending and they can now be found in almost every industry from e-commerce to travel. The increased use of late may be due to improved language processing or the more accessible development tools for non-developers. It may also be that many chatbots are made available through mainstream messaging applications, thus not forcing the user to download yet another application and allowing them to keep using an application they are already comfortable with.
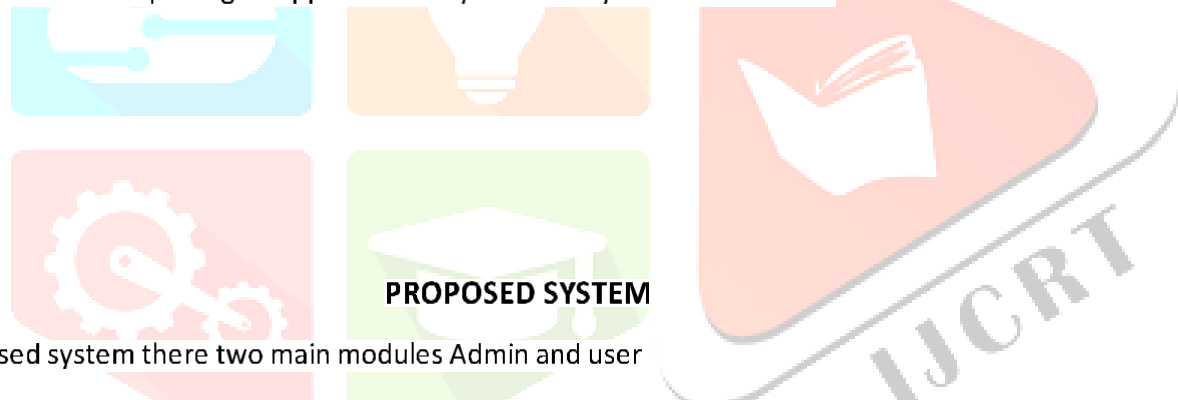
PROPOSED SYSTEM

In Proposed system there two main modules Admin and user

1. Admin:- Admin is responsible for a management of user authentication . without the verification and authentication of the admin, user can not access the application .Admin is also responsible for adding user and restricting user to access application and delete user. If he/she post unwanted stuff.

2. Student / User:- Student /user have to registered with system using unique id and password. After that admin authenticate user. After authentication of admin user can access the system and ask the question /queries to the system. And get answer. The questions and queries ask by the student get stored in the database with the whole details of student including time and date.

SYSTEM ARCHITECTURE

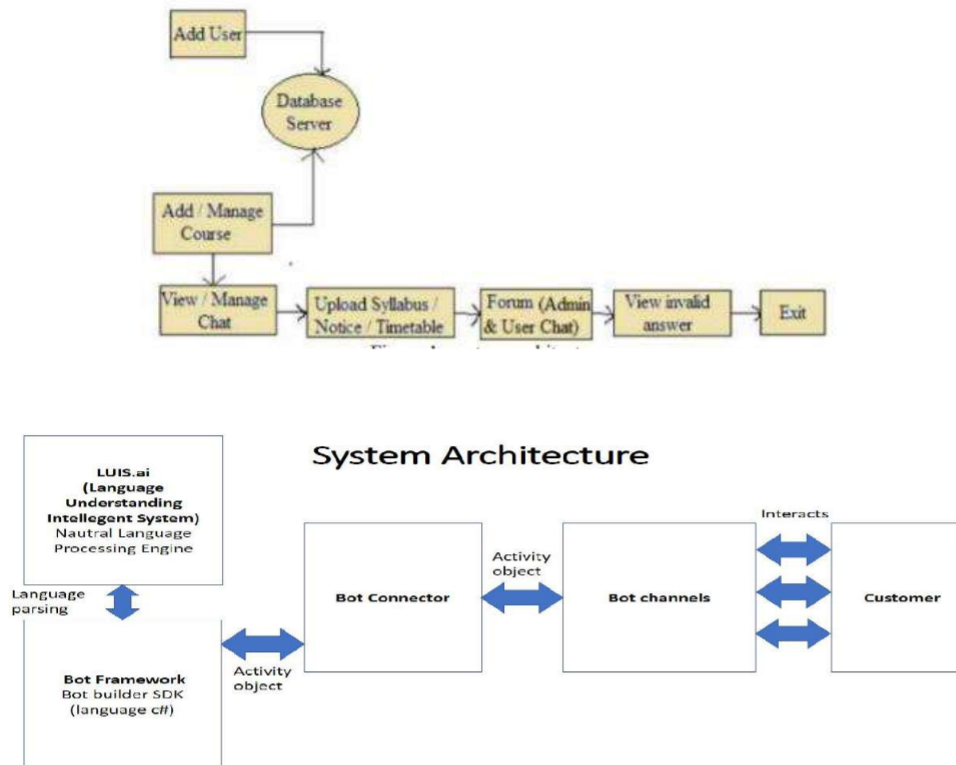Following diagram is our system's architecture diagram:

Figure 1: system architecture

In System architecture According to the architectural diagram of College Information Chat Bot System, there are 3 modules which are explained as follows accordingly.

User :- This module is adding user/student to the web system. User/student is assigned a unique id and password for authentication .after that get access into the system for its utilization.

Database Server :- It keeps record of all the student credentials, college data and their queries etc

Manage :- In this module the admin performs the different tasks to access into the database various college information requirements like placement sheet, dept info, timetable, general notices, etc . All this information are then retrieved as a response to the user question accordingly.

View/Edit Chat :- In this , user types the query and the bot replies to the user query accordingly, changes occur in this phase only

Upload :- In this section we can upload general notices like time schedule, exam dates, fee structure ,events etc.

Exit :- In this phase we can sign out from the system after finishing our work

METHODOLOGIES

A Student chat bot is using a algorithms that analyses student 's queries and understand student's message. This System is a web application which provides answer to the question of the student. Students have to question through the chat bot which is used for chatting. Students can chat using any format there is no specific format the student has to follow. The System uses built in artificial intelligence to answer the question. The answers are appropriate what the student question. If the answer get to invalid then student just need to select and click the invalid answer button which will notify the admin about the incorrect answer. Admin can see the invalid answer via portal login System allows admin to delete the invalid answer or to add a specific answer of that equivalent question. The System analyses the question and then answers to the student. The system answers to the question as if it is answered by the person. With the help of algorithm , the system answers the query asked by the students.

ALGORITHM

User upload the file in the system which get trained by system and get stored in the database that use in the application. once the file is uploaded user get eligible to ask the question to the system.

1.Input question:-User input/ask the question based on uploaded file to the system.

2. Streaming question:-The question related to the uploaded file and user input get display in queue.

3. Selecting Object:-The system select the object From user question and match with streaming question.

4. Read file content and splitting line by line:-The system ead file content and split the user ask question line by line to match with streaming question.

5. Check Object line by line:-A system check input question /object and generate the answer base on ask question, uploaded file using streaming question and other data.

6. Append Answer:-Generated answer get append with question and get display to the user.

7. Return answer :- user get display ask question along with append answer through chatbot system

ADVANTAGES

1. Improved accuracy.

2. Gaining insights.

3. Better understanding.

4. Response based

5. Keeps posterior information.

CONCLUSION

The system which is build will produce output as per the need of student . The main objectives of the project is to develop an algorithm that will be used to identify answers related to user questions. To develop a database were all the related data will be stored and to develop a web interface. The web interface developed has two parts, one for simple users and one for the administrator Reduces human effort. As it generate model machine learning plays a keen role for enhancing the system
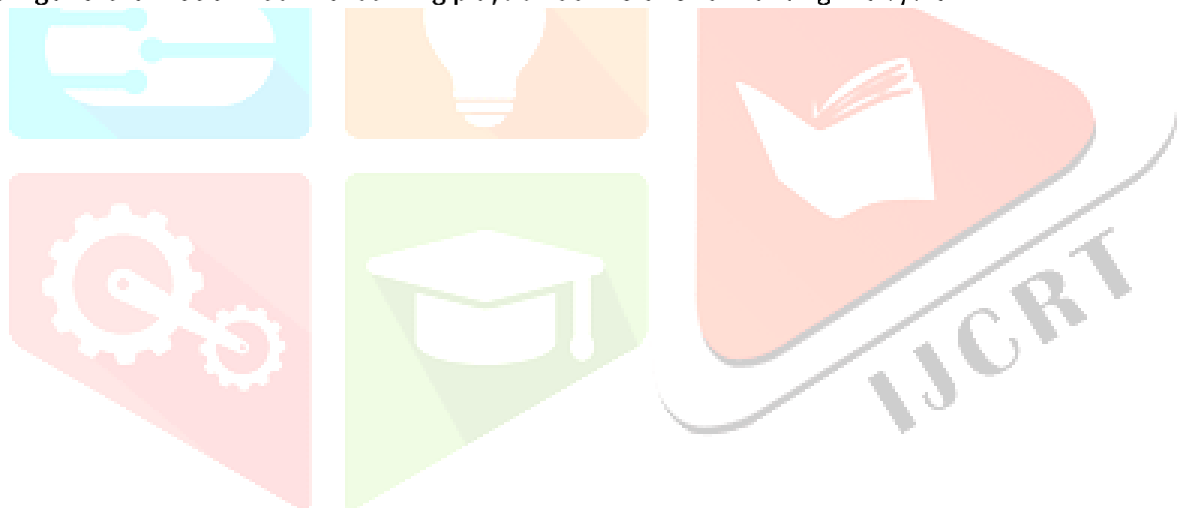
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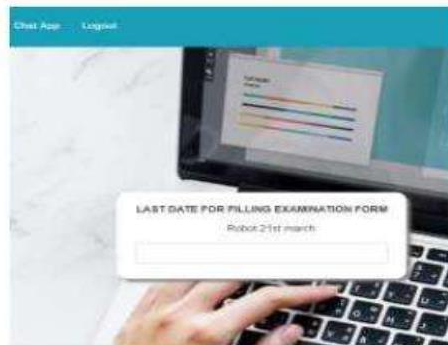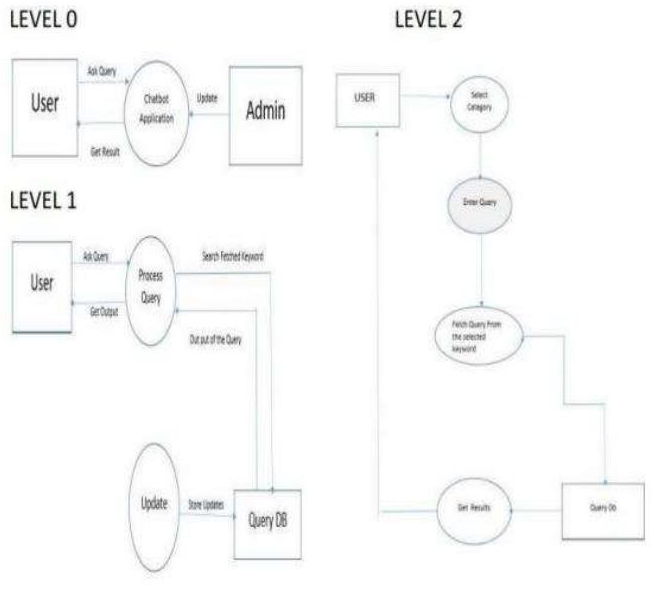
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