

## Health Adviser Chatbot Using Artificial Intelligence.

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### ABSTRACT

Most important thing in our day-to-day life is feeling good about yourself and taking care of your health. Chatbots are software developed with machine learning algorithms like Naive Bayes and KNN. Patients love speaking to real-life doctors, and artificial intelligence is what makes chatbots conversion like human conversion because of data analysis and data recognition. The idea is to create a medical chatbot using Artificial Intelligence that can diagnose the disease and provide basic details about the disease before consulting a doctor. The chatbot stores the data in the database to identify the sentence keywords and to make a query decision and answer the question. The third party, the expert program, handles the data which is not present in the database.

### Keywords

*Chatbot, Artificial Intelligence, Machine Learning, Naive Bayes, KNN, Data Analysis, Data Recognition.*

### 1. INTRODUCTION

Conversational chatbots are very useful for the problem-solving using communication. Text-to-text medical chatbots enable patients to talk about their medical problems and provide personalized diagnosis based on symptoms. The patient can then be transferred to a specialist. This sequence of things fundamentally saves the doctor's time. Healthcare is very important to lead a good life. The chatbots are computer programs that use natural language to interact with users. The chatbot stores the data in the database to identify the sentence keywords and to make a query decision and answer the question. Through chat bots one can communicate with text or voice interface and get reply through artificial intelligence. Typically, a chat bot will communicate with a real person. Chat bots are used in applications such as ecommerce customer service, call centers and Internet gaming. Chat bots are programs built to automatically engage with received messages. Chat bots can be programmed to respond the same way each time, to respond differently to messages containing certain keywords and even to use machine learning to adapt their responses to fit the situation. A developing number of hospitals, nursing homes, and even private centers, presently utilize online Chat bots for human services on their sites. These bots connect with potential patients visiting the site,

helping them discover specialists, booking their appointments, and getting them access to the correct treatment. Artificial intelligence in healthcare is an overarching term used to describe the use of machine-learning algorithms and software, or artificial intelligence (AI), to mimic human cognition in the analysis, presentation, and comprehension of complex medical and health care data.

### 1.1 Objective

The identified challenges motivate to bring up a solution to all the problems stated in the above problem statement section. Following are the objectives of the chatbot: Producing a chatbot that is platform independent. A chatbot that can answer Health related questions and act like a personal assistant in that field. To help regards the disease without physical Contact. To provide a best interaction with User to help him with his disease.

## 2. ANALYSIS OF THE SYSTEM

### 2.1 Existing System

Previous chatbot don't have any type of features which help to bot can response automatically using machine learning. It can made to handle first level questions only. They may not be able to solve complex queries. The Chatbot have only that knowledge which provided by developer. So, handling the limitations of Conversation between user and chatbot the AI and Machine Learning methods can be use and solve the problem.

### 2.2 Proposed System

A chatbot is a piece of software that conducts a conversation with users via textual methods. Chatbots are powered by artificial intelligence using machine learning techniques to understand natural language. Initially when the user's visits the website first registers themselves and later can ask the bot their queries. The system uses an expert system to answer the queries if the answer is not present in the database. The data of the chatbot stored in the database in the form of pattern-template. This process requires data recognition and data analysis for successful implementation. Here SQL is used for handling the database.

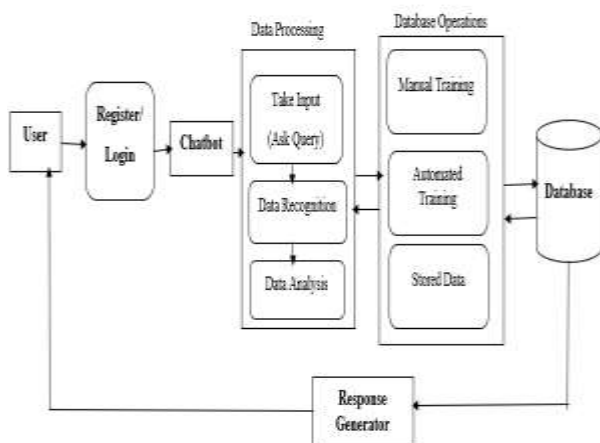
### 3. LITERATURE REVIEW

A text recognition chatbot is developed in this paper. The questions asked to the bot are not understood are further processed using the expert-system of third parties. The webbots are created as web-friends based on text, a user entertainer. If the program is text-based. Here, a two-part process of recognizing and analysing an input data is required for text recognition. Recognition of data from the server response and processing of information. Using an expert system makes it possible to improve unlimited and autonomous intelligence. This chatbot aims to make a conversation between human and machine. Here the system stores the knowledge database to identify the sentence and making a decision to answer the question. The input sentence will get the similarity score of input sentences using bigram. The chatbot knowledge is stored in RDBMS. Here the chatbot is created for helping to the user as well as customer service that functions as public health service. The knowledge base is created for storing the question and answer. The application clearly shows extracted the keyword from the question using data recognition which helps in fast answering.

### 4. PROBLEM DEFINITION

Each and every person have health related issues but every time consultation with the doctor is very difficult because of fees as well as Current pandemic situation (Covid-19). All healthcare providers are always willing to help their patients, but the overwhelming workload doesn't always let them provide the best service. Healthcare costs is a major problem of every person who have less knowledge about medical field. For solving this problem, we will create a medical chatbot using Artificial Intelligence that can provide 24/7 availability, diagnose the disease and provide basic details about the disease before consulting a doctor.

### 5. SYSTEM ARCHITECTURE



**Fig No 1. System Architecture**

Chatbot is an interface between user and database. Using chatbot user can access data related to their query. Initially when the user's visits the website first registers themselves. If

user already registered then user can directly login to this application using their password and user ID. Later user can ask the bot their queries. Data can recognize using data matching and data analysis. The system uses an expert system to answer the queries if the answer is not present in the database. The data of the chatbot stored in the database in the form of pattern-template. In application SQL is used for handling the database. Finally, User can logout from application.

#### 5.1. Implementation Details (Modules)

##### 5.1.1 Administrator Login:

Admin login to the framework utilizing his administrator ID and mystery key.

- View Users: Admin can see the User login information.
- Delete User: If admin wants to remove any user, he can remove it.

##### 2. User Login:

User will login to the framework making use of his patron ID and mystery phrase.

- Interact with Chatbot: User can Interact with chatbot after login.
- Update Info: User can update his information.

##### 5.1.3. Chatbot Interface

Chatbot module is nothing but interface between client and database using data recognition and data analysis. Queries and Response Module.

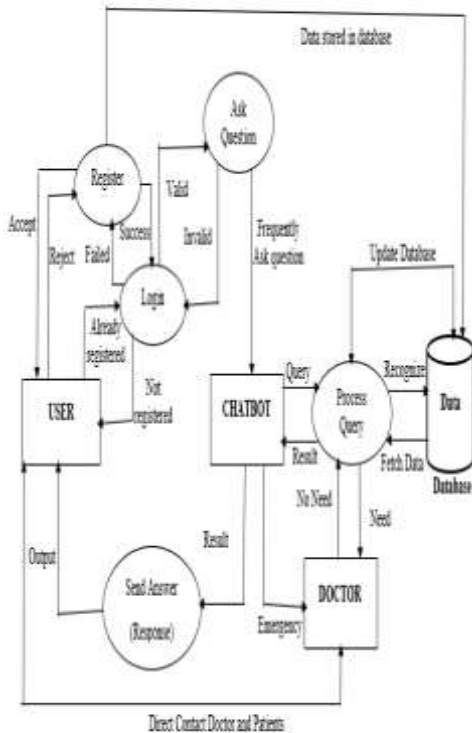
•Ask Query: User can ask query.

•Data Matching: Data Analysis and data recognition process done.

•Response Generator: After data matching give response to user.

### 6. Methodology

All healthcare providers are willing to provide best service to user but they could not provide service because of workload. The purpose of our chatbot is to give advice to the user who have health related issues. To give best suggestions for reduced their pain. To give them 24x7 availability, we use our chatbot application for handling their problems. Our application has database related to health so their disease diagnosis is very easy. If user need a doctor, then user directly contact with doctor. In this application data recognition and data analysis methods are follow for response generation. Chatbot application database has data related health but user asked any question if database don't have that data this data can stored in database automatically using data processing. Security also maintains in this application using password and Id. Only authenticated user can communicate with our system experts. Admin handles users only because of security purpose. This technique is appeared in Fig. 2:



**Fig No 2. Work Flow of Chatbot**

Work flow of Chatbot application are as follows:

- Initially when the user's visits the website first registers themselves.
- Later can ask the bot their queries.
- The system uses an expert system to answer the queries if the answer is not present in the database. The data of the chatbot stored in the database in the form of pattern-template.
- In application SQL is used for handling the database.
- Finally, User can logout from application.

## 7. Algorithm

Step 1: Initiate  
 Step 2: Registration/Login  
     if  
       first time User visits application at that time  
     Registration required  
     else  
       direct Login process  
 Step 3: User can ask Queries  
 Step 4: Analyse the input data  
 Step 5: Compare input data with previous data for response purpose  
 Step 6:  
     if

there is need of doctor then suggest to user to contact with doctor  
 else  
 data stored in database (if this data not present in database)

Step 7: Give response to User  
 Step 8: For another question follow step 4 to step 7  
 Step 9: User can Logout  
 Step 10: Exit

## 8. ADVANTAGES

- Less time spent commuting to the doctor's office
- Less money spent on unnecessary treatments and tests
- Easy access to the doctor at the push of a button
- It provides service 24x7
- Save resources

### 8.1. Applications

- Keeping Up with the Trends.
- Provide medical information.
- Improved Customer Service.
- Increased Customer Engagement.
- Collect Patient data.

## CONCLUSION

Chatbot is useful application for communication and problem handling without any issue. User will be able to enter their current symptoms through a portal, with the help of an intelligent agent, and get an accurate diagnosis or prescription without involving a human doctor. Technology has gotten smart enough that it can help resolve key problems in healthcare, such as a shortage of doctors. It is very helpful for human life. Chatbot is Very good interface for conversion and problem solving. So, every field or every industry requires chatbot for handling workload and communicating to each other. Chatbot is best solution for current pandemic situation (Covid-19).

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