A Survey on "Medicines at Your Fingertips"

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Abstract. *Medicines at Your Fingertips is a website aimed to provide all the information about any medicine, it's side effects and all the other health related information. All the data of the medicines is stored in our database and it is fetched during the execution of user's request. We have created the frontend using HTML, CSS, JS, JQUERY, JQUERY UI and Bootstrap. The Backend is built using Django Framework of Python. Our website contains 6 main components which are: Chatbot: An intelligent chatbot which will give any information that the user has asked. The AI chatbot is created using the Pytorch library of python. It will also help the user to navigate from the whole website. Drugs a to Z, a drug dictionary to give all the information about the desired medicine. There are 2 ways to search the medicine. Pill Finder: To search the medicine alphabetically or using the search bar Phonetic Search: To search the medicine using voice command. Drugs By Condition: It contains the information about all types of health conditions, their causes and treatment along with some medicines which are used to treat them. Side Effects: It also has alphabetically sorted medicines which gives the information about the side effects of the particular medicine along with a search bar. First Aid: This part consists of 3 components which gives the information about first aid treatments and My Med List to set reminders for the doses of your medicine.*

Keywords: *Natural Language Processing, Neural Networks, Artificial Intelligence, Artificial Intelligence Mark-Up Language, Asynchronous JavaScript and XML, Chatbot.*

1. INTRODUCTION

In many cases the medical data is scattered on the internet and it is not easy to find the data user needs. That's why we have integrated all the medical data in our website so that one can find everything at one place. We are planning to build a user friendly website to provide the information and side effects of every medicine that a user wants to know with the help of our database. The website will contain all the useful information about various types of first aid treatments, skin infections and many more health related issues. With the help of this website user can also set reminders for the dose of medicines to be taken. We are also planning to integrate an AI chatbot which will guide the user through the website and it will also provide any information user needs. And we will also integrate voice search for medicines in case the user cannot spell the drug correctly.

2. LITERATURE SURVEY

Finding the correct info concerning the health connected problems is extremely necessary throughout this era of pandemic. again and again it happens that the user doesn't get correct info or they can't realize something in any respect. Taking medication at right time in correct quantity can lead towards the quicker recovery. actually what happens is that, they get their prescribed medication however fail to follow their health care professional's directions. many of us whereas taking prescribed medication don't follow their doctor's' directions. Some common reasons for this area unit individuals might begin feeling higher and choose to not end all of the medication. In some cases individuals assume this medication isn't operating and that they might not notice associate degree improvement in their symptoms promptly and should stop taking the medication. In another cases individuals try and economize and that they assume that these medications area unit pricy, and other people might skip doses or take less. per World Health Organization, over eightieth of the individuals on top of the age of sixty years area unit prescribed medicines that area unit to be administered a pair of - four times daily. With the rise in vas diseases and polygenic disorder among the generation regular medication administration has become a necessity. however among this another 40-60% has the problems associated with forgetting the taking of medicines at right time. we tend to found a website named as check with frank that worked as a drug lexicon to search out the knowledge concerning some medicine hold on in hardcoded format. User had to grasp the right

writing system of the drugs to induce the knowledge alternatively he has got to scroll down until the tip as a result of the website doesn't give any choice to search. additionally it had solely {the info the knowledge the data} concerning the medicine and there wasn't any extra information concerning the primary aid treatments or the various health conditions. There wasn't any facility to be reminded of the dosages at time. Therefore, we tend to thought it absolutely was necessary to create a integrated and user friendly website that might bring additional convenience and trust to the user concerning the health connected info. And additionally a tool which is able to offer him the reminders concerning the medicines he must war time. From the literature cited, the analysis projected a plan of Medicines At Your Fingertips which will adapt the options of looking through the info quickly. to boot, as compared to the prevailing website, it'll cue the user to require medication as per his necessities. And associate degree AI chatbot which is able to guide the user to navigate through the website and might additionally chat with him and supply him all the knowledge he wants from the sure sources. more additional, the website also will have the choice of phonetic search wherever the user will search through our medication info victimization voice commands if he doesn't recognize the writing system of the drugs.

G Krishna Vamsi, Akhtar Rasool, Gaurav Hajela, "A Deep Neural Network Based Human to Machine Conversation Model", 2020

The study found that various algorithms and neural networks could improve a chatbot's performance.It is essential to acknowledge the chatbot's limitations, which include the model's accuracy, lack of empathy, and privacy regarding user data. Additionally, the chatbot could be enhanced by making a voice version available, which would be of assistance to people who are blind or illiterate. Although chatbots perform many tasks, they will never be able to replace humans until they comprehend human perception and emotions. In the healthcare industry, this is even more true.[1]

Siddhant Singh and Hardeo K. Thakur, "Survey of Various AIChatbots Based on Technology Used", 2020

According to the aforementioned survey, Generative Models based on Deep Learning can be very useful for creating Chatbots. These kinds of chatbots also can't pass the Turing test, but a good training with a lot of high-quality data and a retrieval-based approach can get better results. Generative Chatbots can benefit from the enormous database of the IBM WATSON computer system. [2]

Jingjing Li and Chunlin Peng, "jQuery-based Ajax General Interactive Architecture", 2012

This paper innovatively proposed a jQuery-based Ajax general interactive architecture (JAGA) based on research and a summary of numerous Ajax application examples. Utilizing flexible JAGA can significantly lessen the workload of Ajax applications.Further, the architecture's utility causes initially complex work to become structured and hierarchical. [3]

Mr. M. Ganesan, Deepika.C, Harievashini.B, Krithikha.A.S, Lokhratchana.B, "A Survey on Chatbots Using Artificial Intelligence", 2021

Even though there are a variety of application-based chatbots, users can integrate them with a wide range of services. As a result, we can easily draw the conclusion from the aforementioned survey that, in recent years, the chatbot has played a significant role in almost all fields, including education, transportation, medicine, and others. Additionally, it uses various algorithms at the backend or is dependent on the various design platforms that are provided for it, and it is developed using various design techniques based on the services that it will provide to users. [4]

Xiaofeng Wang, "XML Data Island and AJAX.NET Application in the Network Test System",Dec 2011

Asynchronous access to the server, which makes use of AJAX.NET, can significantly improve resource utilization on the server. The user can carry out other actions on the same page without affecting the data while accessing it.You can put data on the client using the XML data island. You can then use JavaScript or the XML-DSO method to perform the necessary operations on the xml data island data. This reduces the number of client visits to the server and can greatly improve web application performance. When used together, it significantly enhances the performance of the web application. [5]
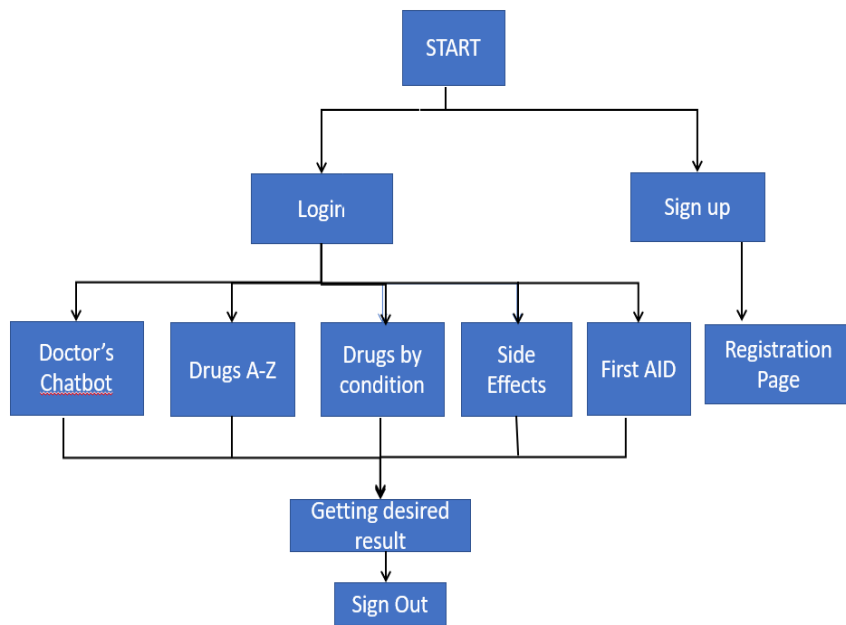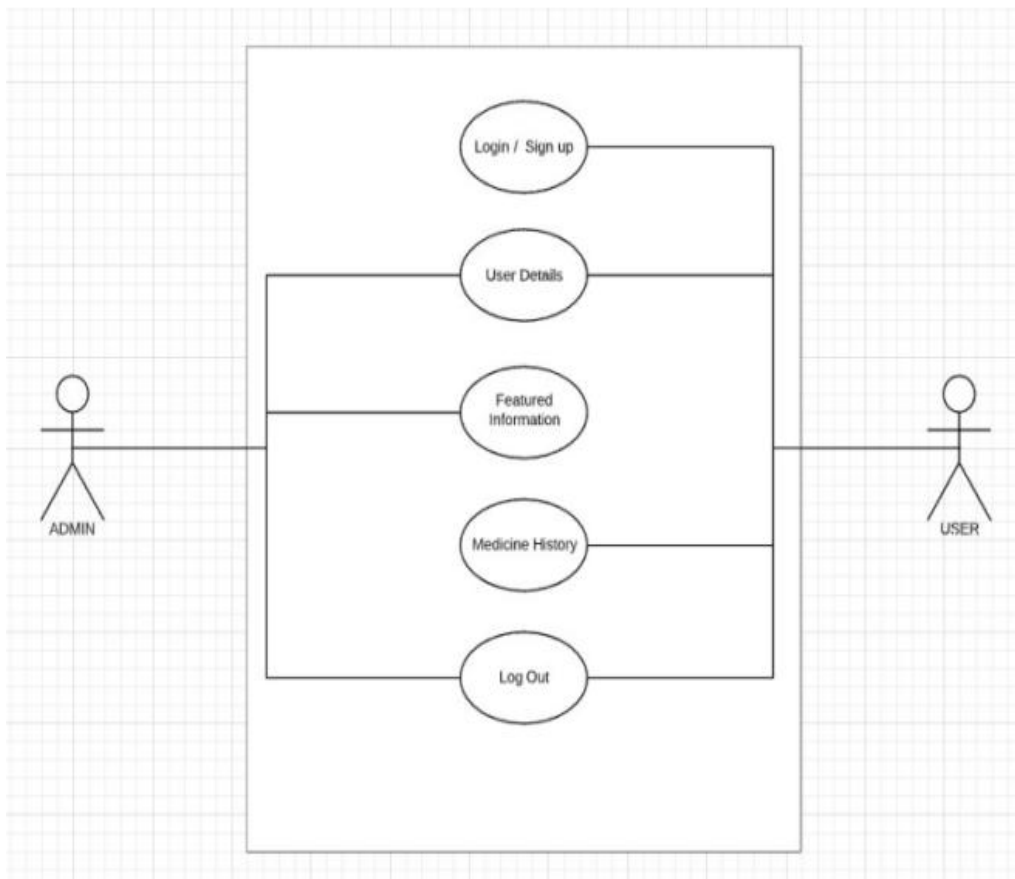
3. SYSTEM DESIGN
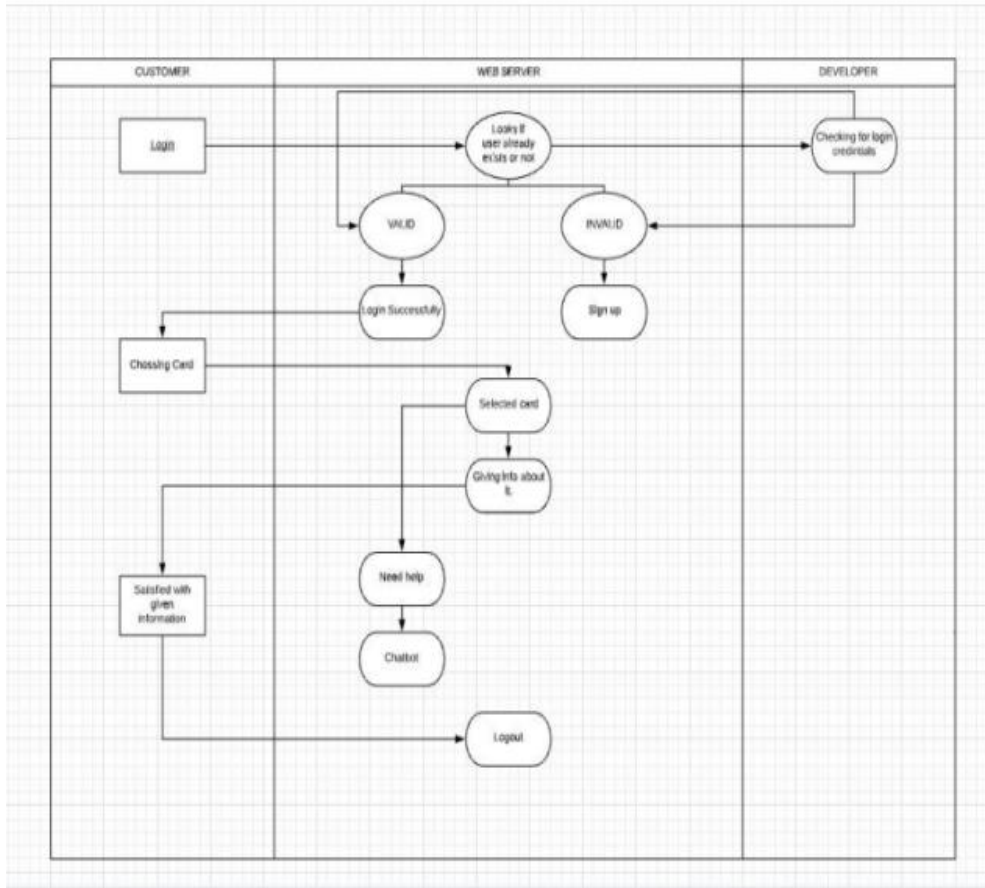

FIGURE 1. Block Diagram

FIGURE 2. Use Case Diagram
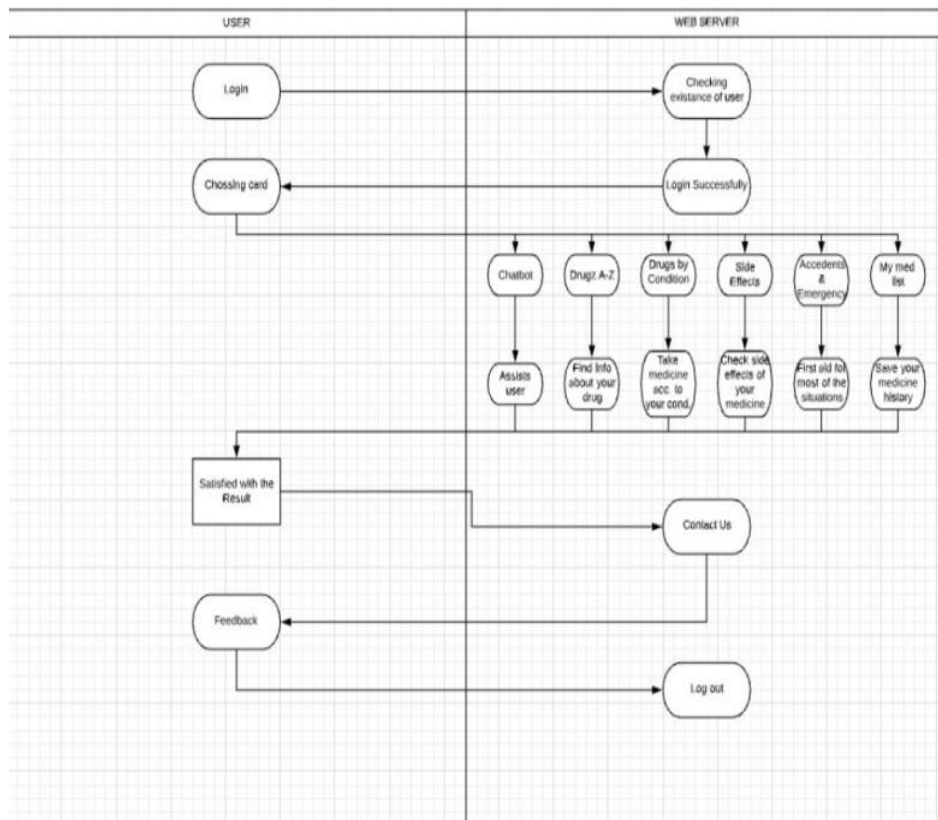
FIGURE 3. Sequence Diagram

FIGURE 4. Activity Diagram

4. ALGORITHM USED

1] Algorithm for AI Chatbot:

STEP 0: START

STEP 1: Get the input of the query from user in the form of sentence.

STEP 2: Tokenization: it is a way of separating a piece of text into smaller units called tokens [individual words].

STEP 3: Stemming process: it is the process of retrieving the derived words to their root or base words.

STEP 4: Bag of Words: return bag of words array:1 for each known word that exists in the sentence, 0 otherwise.

STEP 5: Take this bag of words array and process it in the neural network model where it will compare the array with the tags in the intents.json file.

STEP 6: If any tag matches the input then return the response associated with the intent.

STEP 7: If none of tags matches the input then search the given query on the Wikipedia using the Wikipedia library from python. And show the first 2 lines from the article to the user using GUI.

STEP 8: END

2] Algorithm for Phonetic Search:

STEP 0: START

STEP 1: Check for request made by a user is GET or POST

STEP 2: If a request is POST then turn on the microphone of the system and listen to the user command using an inbuilt method of speech_recognition i.e. listen(source)

STEP 3: Try for recognizing speech correctly using the method recognize_google(audio) or raise an exception if a user was not audible clearly.

STEP 4: Manipulate words according to the word reserved in the database.

STEP 5: After the conversion of speech in proper format then search for a similar word with approximation as the user wants that specific medicine by using get_close_matches() method of diff_lib library.

STEP 6: If a user gave approx same speech or word which is nearly matching words present in the database of medicines then it will return that specific medicine.

STEP 7: It will return nothing found in the database.

STEP 8: END

5. CONCLUSION

Medicines At Your Fingertips website provides a wide scope for a user to get treated for multiple types of diseases or minor problems at home only by just taking a needy help from this website which provides a user with all required information for his specified need. This website is a user-friendly platform that can be handling by a 7-year-old child too. Ital most covers many aspects which can help the user in many crises and can get specific solution for its need. User can also contact with admin by mentioning its problem faced by him/her. Medicines and side effects are the two main beam of this website and in future, there are chances to also evolve this website for many other beams too which will increase its importance and will reduce the load of a user in health-related information. Security concerns are taken into consideration where user information is all secured and can also create its account with full priva cyconcern. User cannot access to any of the functionality until and unless he/she has not created an account in this website as it is prerequisite before using this website.

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