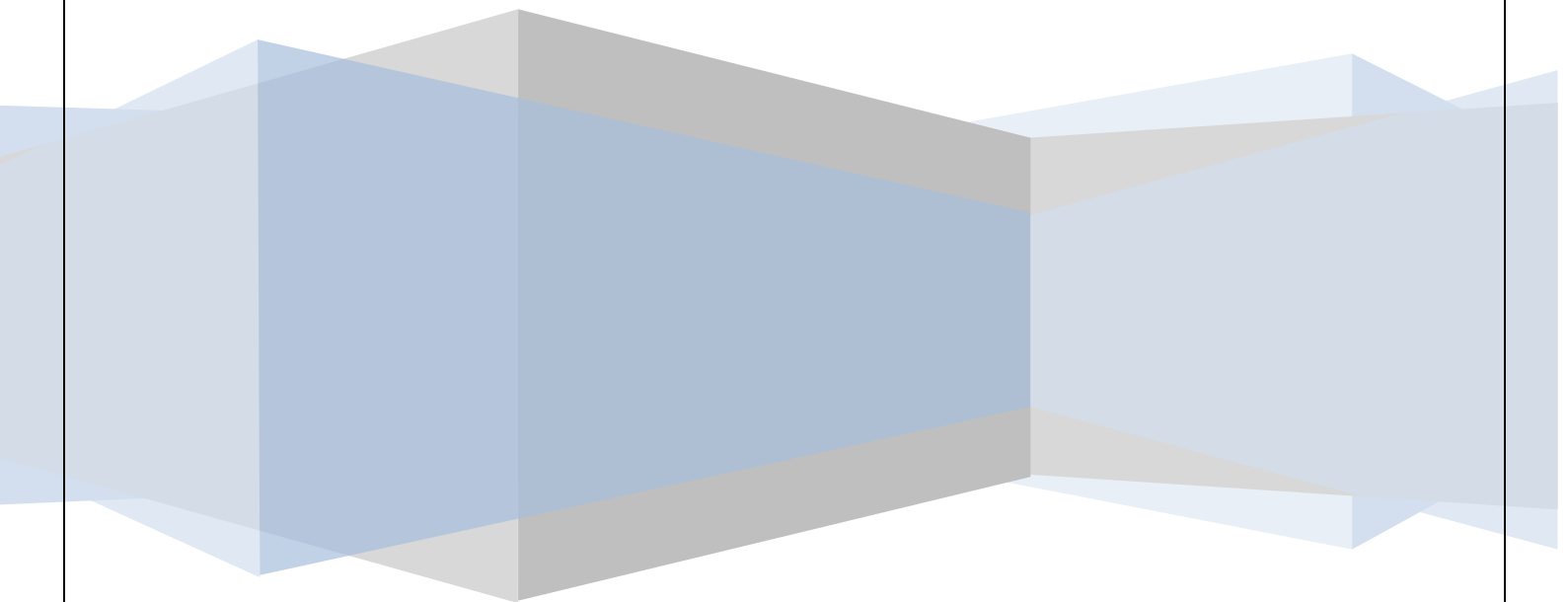# Online medical chatbot

Created by

Srisha Nag C S and Vinutha D S

III

<u>ABSTRACT</u>

ChatBot can be described as software that can chat with people using artificial intelligence. These software are used to perform tasks such as quickly responding to users, informing them, helping to purchase products and providing better service to customers. In this paper, we present the general working principle and the basic concepts of artificial intelligence based chatbots and related concepts as well as their applications in various sectors such as telecommunication, banking, health, customer call centers and e-commerce.

A developing number of hospitals, nursing homes, and even private centres, presently utilize online Chatbots 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. In any case, the utilization of artificial intelligence in an industry where individuals' lives could be in question, still starts misgivings in individuals. It brings up issues about whether the task mentioned above ought to be assigned to human staff.

TABLE OF CONTENTS

Chapter 1

1. Preamble

a. Introduction

Sentiment Analysis is the process of 'computationally' determining whether a piece of writing is positive, negative or neutral. Sentiment analysis and opinion mining have many applications ranging from commerce, marketing, to politics and any other research. It can be used in reputation management to analyze web and social media mentions about a product, a service, a marketing campaign or a brand.

Now a days ,health care is very important in our life. Todays people are busy with their works at home, office works and more addicted to Internet. They are not concerned about their health .So they avoid to go in hospitals for small problems.it may become a major problem.

So we can provide an idea is to create a health care chatbot system using AI that can diagnosis the disease and provide basic information about the disease before consulting a doctor.Which helps the patients know more about their disease and improves their health.User can achieve the all kind of disease information.The system application uses question and answer protocol in the form of chatbot to answer user queries.The response to the question will be replied based on the user query.The significant keywords are fetched from the sentence and answer to those sentences.If match is discovered or significant answer will be given or similar answers will be displayed.Bot will diagnosis which type of disease you have based on user symptoms and also gives doctor details of particular disease.It may reduce

their health issues by using this application system.The system is developed to reduce the healthcare cost and time of the users as it is not possible for the users to visit the doctors or experts when immediately needed.

"MITRA" is a healthcare chatbot which provides you the best features that can be provided with voice reply.

b. Problem Statement

Several limitations exist to consider within the chatbot design patterns. Not every application is suited for conversational interfaces. There are tasks that are inherently better tackled by apps, with access to local computational resources and data storage. Other tasks simply work better with a rich visual interaction that goes beyond conversational interfaces. Bots require an active internet connection to work (contrary to some modern mobile that provide offline experiences). Bots could also be a onetime use case, for example, a dermatology bot can diagnose user skin ailments and prescribe medicine or inform users about their condition.

Some technical are the limitations of using finite state, frame-based and plan-based dialogue management techniques is that the dialog manager must manually develop the state machines with their preconditions, generic state updates and post-conditions. Dialog structures are fixed, meaning that current dialogs do not optimize future dialogs. The findings revealed no standardized way to represent all dialogs or a large range of conversational systems. Finally, few studies mentioned the role of human agent to verify the dialogue by adding contributions to the dialogue tree. This mitigates the repetitiveness in the system dialogue context which is responsible for user's engagement with the system

CHAPTER 2

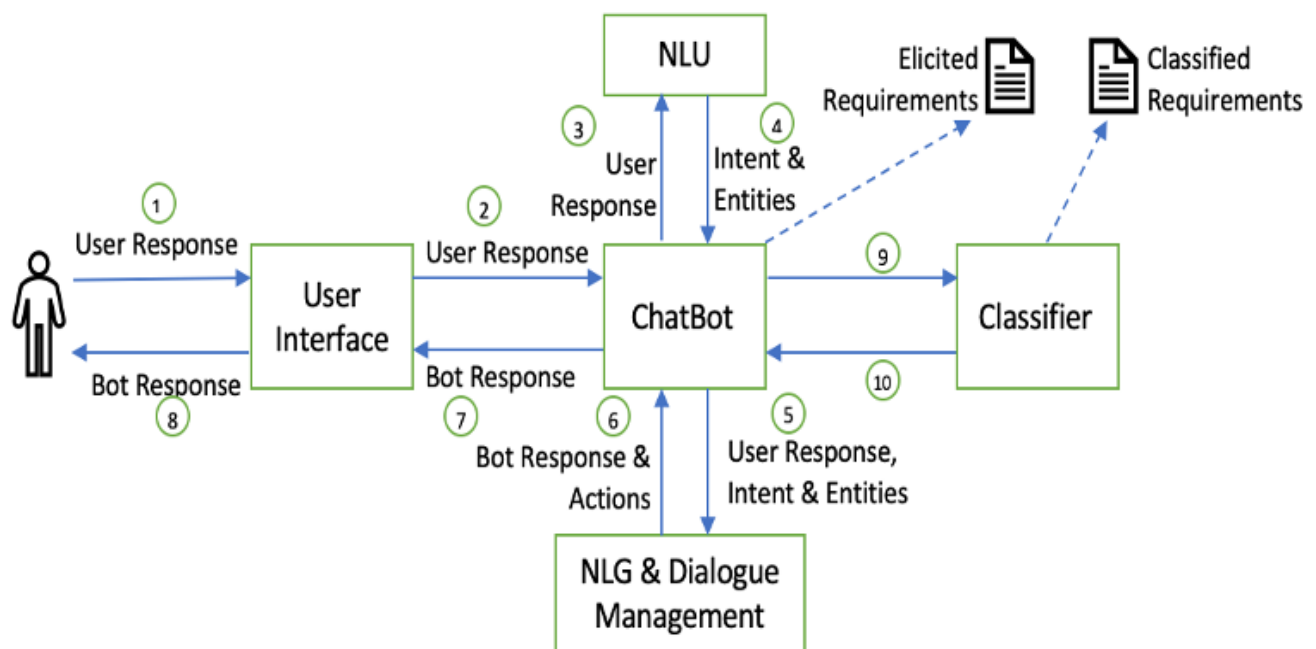## SYSTEM DESIGN AND METHODOLOGY

2.1 System Architecture

figure 2.1: System Architecture of healthcare chatbot

The above figure 2.1 describes the system architecture of healthcare chatbot.   The architecture consists of a centralized database, which can be accessed by normal users or customers. Administrative access is required for the staff, which is implemented through login module by which the admin can login with the registered userId and password.

Once login is successful, the admin can manipulate the updating or deleting customers users and their services, adding, updating and deleting categories .

A customer first needs to register in the website by filling up valid user Id,name, email, address and password.

Username should be unique and if it is already been taken then a popup message is displayed that the username is already taken.

On successful registration, customer can login through valid userId and password. On successful login, customer is directed to services where customers can interact about there symptoms and then get the appropriate diseases, precautions, descriptions.

CHAPTER 3

SRS 3.1   Functional Requirements:

Software Requirements

- Windows Vista onwards, Linux, Mac OS

- In the case of building the Project from the source

- Python Compiler

- csv

- SciKit Learn,pandas,tkinter

- Numpy

- mysql

Hardware Requirements:

Processor : Intel Core (TM) i5-8250U CPU@1.60GHz 1-80GHz

RAM   : GB

Speed   :1.2GHz

Key Board : Standard

KeyboardMouse:Wiress

Monitor   :LED

3.2   Non Functional Requirements:

- Performance Requirements:
- The formats of the scanned copies should be in the standard format
- Should have a training error of as low as possible
- Robustness
- Reliability
- Better learning methods

CHAPTER 4

Implementation / Methodology:

1.Proposed System:

In our proposed system the user can chat with the bot regarding the query through voice or text.The system uses an expert system to answer the queries. User can also view the available doctors for that particular disease.This system can be used by the multiple users to get the counselling sessions online.The data of the chatbot stored in the database in the form of pattern-template. Bot will provide analgesics and food suggestions that means which food you have to take based on the disease.

2.Experiment setup:

This will help to reduce healthcare costs and improve accessibility to medical knowledge through medical chatbots. 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 make a query decision and answer the question. Ranking and sentence similarity calculations are performed using n-gram, TFIDF and cosine similarity. The csv file is read and represented in a tabular format where ID key to the text, the conversion of text ,upvotes and downvotes are segregated . The score will be obtained for each sentence from the given input sentence and more similar sentences will be obtained for the query given.

CHAPTER 5

Software Testing :

The research in this thesis focuses on predicting the general sentiment polarity of the reactions to the news on Twitter/Reddit before a news article is published. To answer our research questions regarding the influence of category of product acceptance.
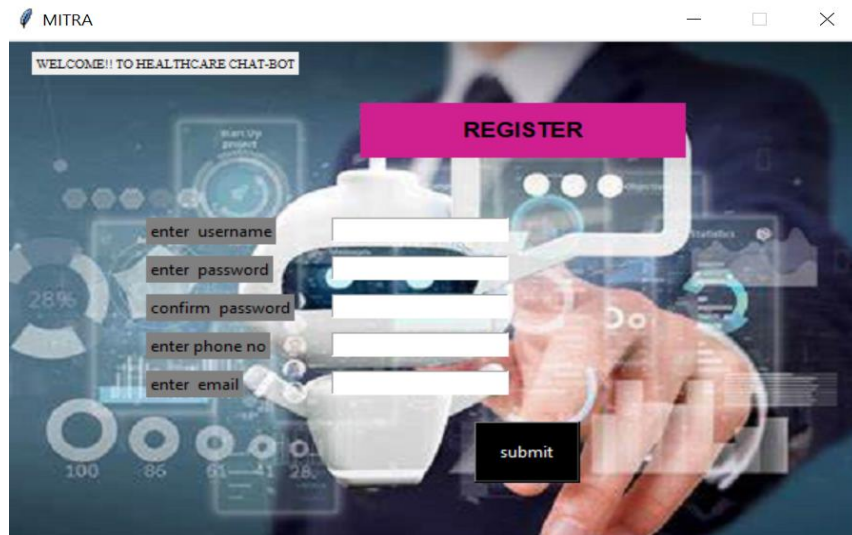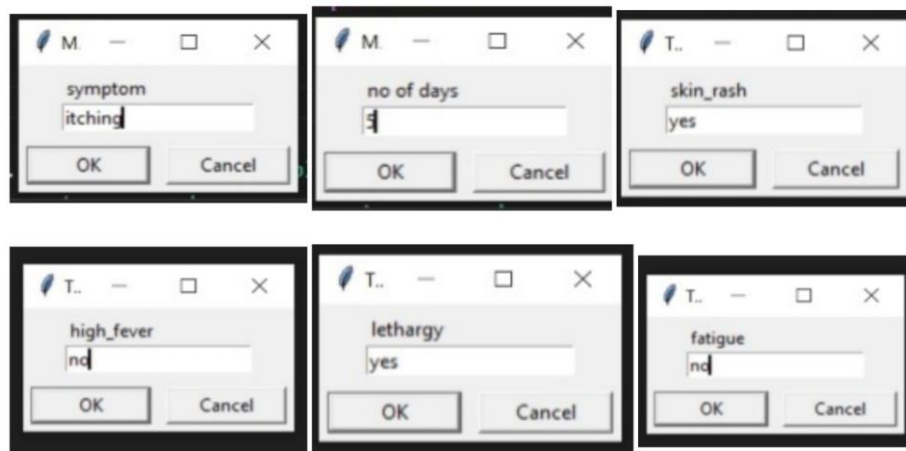
CHAPTER 6

Code:

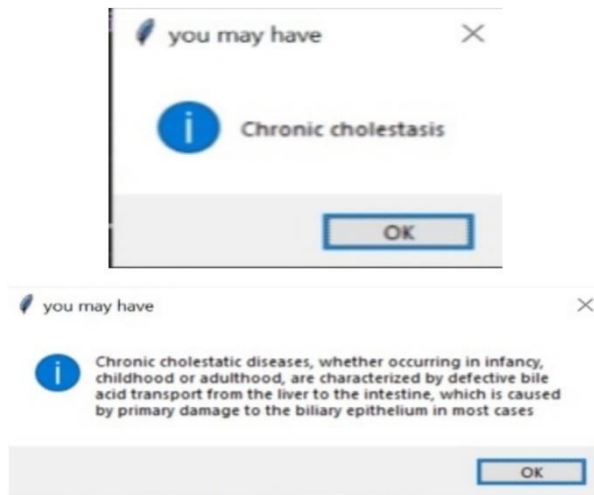**https://github.com/Vinuthads/HEALTHCARE-CHATBOT.git**

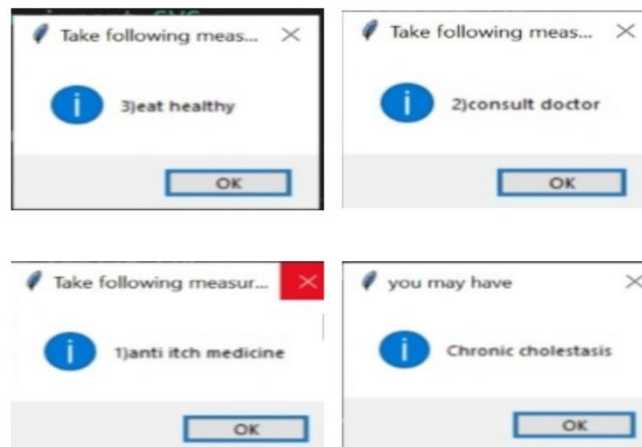**ScreenShots:**

Screenshot 4.1: Login GUI of chatbot

Screenshot 4.2: Register GUI of chatbot

Screenshot 4.3: Conversation of chatbot

Screenshot 4.4: identification and Definition of disease

Screenshot 4.4: measures for disease

CHAPTER 7
Conclusion:

Chatbot is great tool for conversation between human and machine. The application is   developed for getting a quick response from the bot which means without any delay it gives the accurate result to the user. It is concluded that, the usage of chatbot is user friendly and can be used by any person who knows how to type in their own language. Chatbot provides personalized diagnosis based on symptoms.

CHAPTER 8

References
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