

MEDICARE HEALTH ASSISTANT CHATBOT USING ARTIFICIAL INTELLIGENCE (AI)

Submitted in partial fulfillment of the requirements for the award of
Bachelor of Engineering Degree in Computer Science and Engineering

By

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**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
SCHOOL OF COMPUTING**

SATHYABAMA

**INSTITUTE OF SCIENCE AND TECHNOLOGY
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APRIL - 2024



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BONAFIDE CERTIFICATE

This is to certify that this Project Report is the bonafide work of **Gyan Kashyap**(Reg. No - 40110426) and **Mohit Prajapat** (Reg. No - 40110777) who carried out the Project entitled " Medicare Health Assistant Chatbot Using Artificial Intelligence(AI)" under my supervision from November 2023 to April 2024.

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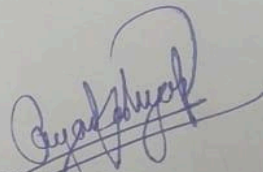
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DECLARATION

I, Gyan Kashyap (Reg. No - 40110426) hereby declare that the Project report entitled **Medicare Health Chatbot using Artificial Intelligence (AI)** done by me under the guidance of **Dr. R.M.GOMATHI, M.TECH., Ph.D.** is submitted in partial fulfilment of the requirement for the award of Bachelor of Engineering Degree in Computer Science and Engineering.

DATE : 15/04/2024

PLACE : Chennai



SIGNATURE OF THE CANDIDATE

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ABSTRACT

Medical care is very important for a healthy life. However, it is very difficult to seek medical attention if you have a health problem. The recommended notion is to develop a medical Chatbot that can adopt ML to analyze the ailment and produce necessary information concerning the condition were discussing with a doctor. Medical chatbots were built to reduce medical costs and improve access to medical knowledge. Some chatbots serve as medical manuals to help patients become aware of their illness and improve their health. Users can assuredly benefit from chatbots if they can diagnose several kinds of illness and render the required data. Text Diagnosis Bot enables sufferers to join in analyses of their medicinal matters and present a personalized analysis report with reference to the symptoms. Therefore, people have opinions about their well-being and individual stability.

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CHAPTER 1

INTRODUCTION

Medical Chabot has a high impact on the health culture of the state. It has improved reliability and is less prone to human errors. Today's people are more likely addicted to internet but they are not concerned about their personal health. They avoid hospital treatment for small issues which may become a major disease in future. This proposed idea solves this problem. This idea focuses on creating a chatbot which is free of cost and available throughout the day. The facts that the chatbot is free and can be accessed wherever the user is, be it their working environment, prompt the user to have it and use it. It saves the overhead involved in consulting specialized doctors. Machine Learning is now at its peak and chatbot is just one example of its use to contribute to progress. It should also be made clear that chatbots are not designed to diagnose patients. The idea presented was to use Machine Learning to create a medical chatbot that could provide some basic details about the disease before consulting a doctor. 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. In turn, chatbots are always available to help people in need of medical assistance. In addition, the virtual assistant may be responsible for reminding users to take medication and monitoring the patient's health status. Generally, chatbots communicate with real people.

1.1 PROBLEM STATEMENT AND OBJECTIVE

The user is able to do the important advantage of a chatbot only it can diagnose all quite disease and supply necessary information. Text-to-text diagnosis bot connects patients about their medical issues and gives a customized diagnosis to support their symptoms. Hence, people will have a thought about their health and have the proper protection.

CHAPTER-2

LITERATURE SURVEY

[1] Vaibhav Tode, Himanshu Gadge, Prateek Kachare and Sudarshan Madane, CureBot -An Artificially Intelligent Interactive Bot for Medical Diagnostics International Research journal of Engineering and Technology (IRJET)., Vol.7, no.12 (Dec 2020).

[2] Satyendra Praneel Reddy Karri and Dr Santosh kumar, Deep Learning Techniques for Implementation of Chatbots, 2020 International Conference on Computer Communication and Informatics (ICCCI), Coimbatore, INDIA, (2020) January 22-24.

[3] Dipesh Kadariya, Revathy Venkataramanan, Hong Yung Yip, Maninder Kalra, Krishna prasad Thirunarayanan and Amit Sheth, kBot: Knowledge-Enabled personalized Chatbot for Asthma Self-Management, 2019 IEEE International Conference on Smart Computing (SMARTCOMP), Washington, DC, USA,(2019) June 12-15.

[4] R. Dharwadkar, N.A. Deshpande, A medical chatbot. Int. J. Comput. Trends Technol. (IJCTT). 60(1) (2018).

[5] S. Divya, V. Indumathi, S. Ishwarya, M. Priyasankari, S.K. Devi, A self-diagnosis medical chatbot using artificial intelligence. J. Web Dev. Web Designing 3(1) (2018).ature survey is the most important step in software development process.

2.2 Contextual Chatbot for Healthcare Purposes (using Deep Learning)

As the demand in Machine Learning & AI keeps growing, new technologies will keep coming in the market which will impact our day-to-day activities, and one such technology is Virtual Assistant Bots or simply Chatbots. Chatbots have evolved from being Menu/Button based, to Keywords based and now Contextual based. The most advanced among all of the above is contextual based because it uses Machine Learning and Artificial Intelligence techniques to store and process the training models which help the chatbot to give better and appropriate response when user asks domain specific questions to the bot. In this paper we will be not only discussing about the working of our model but also the applications and relevant work conducted in this domain, also there will be discussion about the challenges and future scope of this technology. For this work, neural networks have been used to

train data and various packages which help us in giving better results. In this chatbot we will be integrating the concepts of Natural Language Processing with Deep Learning for getting better results. Healthcare plays a wide role in our daily lives, whenever a person feels sick he/she visits their family doctor or any nearby clinic just to get to know what issues they are facing, in the recent years many companies & institutions have collaborated with hospitals to provide support which can help doctors and medical staff to deal with patients in better way and reduce their efforts with the help of technology. Chatbots can play a major role in reshaping the healthcare industry by providing either predictive diagnosis or any other assistantships like booking an appointment.

2.3 Healthcare Chatbot using Natural Language Processing

To start a good life healthcare is very important. But it is very difficult to the consult the doctor if any health issues. The proposed idea is to create a healthcare chatbot using Natural Language Processing technique it is the part of Artificial Intelligence that can diagnose the disease and provide basic. To reduce the healthcare costs and improve accessibility to medical knowledge the Healthcare chatbot is built. Some chatbots acts as a medical reference books, which helps the patient know more about their disease and helps to improve their health. The user can achieve the benefit of a healthcare chatbot only when it can diagnose all kind of disease and provide necessary information. The system provides text or voice assistance, that means user can use his own convenient language, Bot will provides which type of disease based on the user symptoms, and used to give and provides doctor and also provides food suggestion that means which type of food you have to take.

Chatbot are program that work on Machine Learning (ML) as well as Artificial Intelligence (AI) Natural Language Processing (NLP) techniques such as NLTK for Python can be applied to analyses the speech, and intelligent responses can be found by designing an engine to provide appropriate and kind of human like responses.

CHAPTER 3

EXISTING SYSTEM AND PROPOSED SYSTEM

3.1 EXISTING SYSTEM

A conversational agent that interacts with users using natural language is called a Chatbot. Many chatbots have been developed using text communication starting from ELIZA that simulates a psychotherapist to PARRY which simulates a paranoid patient. ELIZA is well known artificial therapist. The bot attempts to rephrase the questions of the client and responds on certain keywords. If they will not keyword is found then ELIZA will replies with fixed phrases to keep the conversation going.

3.1 OVERVIEW PROPOSED SYSTEM

The proposed idea is to make a medical chatbot using AI which will diagnose the disease and supply basic details about the disease before consulting a doctor. to scale back the healthcare costs and improve accessibility to medical knowledge the medical chatbot is made. Few chatbots acts as reference books, which helps the patient find out about the illness and assists with improving their wellbeing. The user is able to do the important advantage of a chatbot only it can diagnose all quite disease and supply necessary information. text-to- text diagnosis bot connects patients about their medical issues and gives a customized diagnosis to support their symptoms.

3.2 SYSTEM ARCHITECTURE OF THE PROJECT

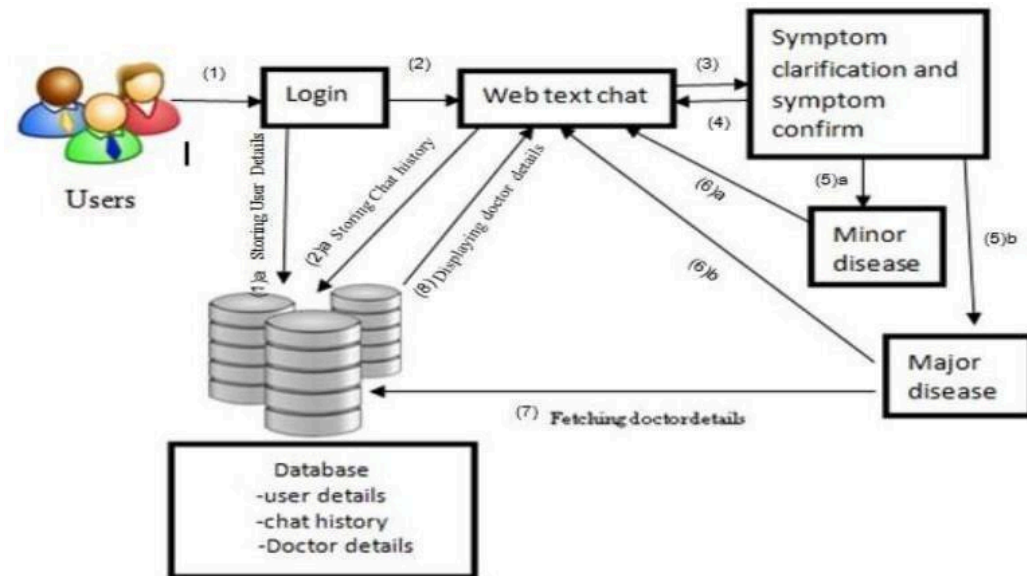


FIG-3.1 SYSTEM ARCHITECTURE OF THE PROJECT

3.3 SYSTEM REQUIREMENTS

3.3.1 HARDWARE REQUIREMENTS

- System : Pentium Dual Core.
- Hard Disk : 120 GB.
- Monitor : 15" LED
- Input Devices : Keyboard, Mouse
- Ram : 4 GB.

3.3.2 SOFTWARE REQUIREMENTS

- Operating system : Windows 7/10.
- Coding Language : Python

CHAPTER 4

DESCRIPTION OF PROPOSED SYSTEM

4.1 SOFTWARE ENVIRONMENT

4.1.1 Python

Python is a high-level, interpreted, interactive and object-oriented scripting language. Python is designed to be highly readable. It uses English keywords frequently where as other languages use punctuation, and it has fewer syntactical constructions than other languages.

- **Python is Interpreted** – Python is processed at runtime by the interpreter. You do not need to compile your program before executing it. This is similar to PERL and PHP.
- **Python is Interactive** – You can actually sit at a Python prompt and interact with the interpreter directly to write your programs
- **Python is Object-Oriented** – Python supports Object-Oriented style or technique of programming that encapsulates code within objects.

4.1.2 History of Python

Python was developed by Guido van Rossum in the late eighties and early nineties at the National Research Institute for Mathematics and Computer Science in the Netherlands.

Python is derived from many other languages, including ABC, Modula-3, C, C++, Algol-68, SmallTalk, and Unix shell and other scripting languages.

Python is copyrighted. Like Perl, Python source code is now available under the GNU General Public License (GPL).

Python is now maintained by a core development team at the institute, although Guido van Rossum still holds a vital role in directing its progress.

4.1.2.1 Python Features

Python's features include –

- **Easy-to-learn** – Python has few keywords, simple structure, and a clearly defined syntax. This allows the student to pick up the language quickly.
- **Easy-to-read** – Python code is more clearly defined and visible to the eyes.
- **Easy-to-maintain** – Python's source code is fairly easy-to-maintain.

- **A broad standard library** – Python's bulk of the library is very portable and cross-platform compatible on UNIX, Windows, and Macintosh.
- **Interactive Mode** – Python has support for an interactive mode which allows interactive testing and debugging of snippets of code.
- **Portable** – Python can run on a wide variety of hardware platforms and has the same interface on all platforms.
- **Extendable** – You can add low-level modules to the Python interpreter. These modules enable programmers to add to or customize their tools to be more efficient.
- **Databases** – Python provides interfaces to all major commercial databases.
- **GUI Programming** – Python supports GUI applications that can be created and ported to many system calls, libraries and windows systems, such as Windows MFC, Macintosh, and the X Window system of Unix.
- **Scalable** – Python provides a better structure and support for large programs than shell scripting.

Apart from the above-mentioned features, Python has a big list of good features, few are listed below

- It supports functional and structured programming methods as well as OOP.
- It can be used as a scripting language or can be compiled to byte-code for building large applications.
- It provides very high-level dynamic data types and supports dynamic type checking.

- It supports automatic garbage collection.
- It can be easily integrated with C, C++, COM, ActiveX, CORBA, and Java.

Python is available on a wide variety of platforms including Linux and Mac OSX. Let's understand how to set up our Python environment.

4.1.3 Getting Python

The most up-to-date and current source code, binaries, documentation, news, etc., is available on the official website of Python <https://www.python.org>.

Windows Installation

Here are the steps to install Python on Windows machine.

- Open a Web browser and go to <https://www.python.org/downloads/>.
- Follow the link for the Windows installer python-XYZ.msifile where XYZ is the version you need to install.
- To use this installer python-XYZ.msi, the Windows system must support Microsoft Installer 2.0. Save the installer file to your local machine and then run it to find out if your machine supports MSI.
- Run the downloaded file. This brings up the Python install wizard, which is really easy to use. Just accept the default settings, wait until the install is finished, and you are done.

The Python language has many similarities to Perl, C, and Java. However, there are some definite differences between the languages.

4.1.4 First Python Program

Let us execute programs in different modes of programming

4.1.4.1 Interactive Mode Programming

Invoking the interpreter without passing a script file as a parameter brings up the following prompt

4.1.4.2 Script Mode Programming

Invoking the interpreter with a script parameter begins execution of the script and continues until the script is finished. When the script is finished, the interpreter is no longer active.

4.1.5 Flask Framework

Flask is a web application framework written in Python. Armin Ronacher, who leads an international group of Python enthusiasts named Pocco, develops it. Flask is based on Werkzeug WSGI toolkit and Jinja2 template engine. Both are Pocco projects.

Http protocol is the foundation of data communication in world wide web. Different methods of data retrieval from specified URL are defined in this protocol.

4.2 ARCHITECTURAL MODULE OF PROPOSED SYSTEM

User Validation And Extraction Of Symptoms

Extracted Symptoms with Trained Datasets

Specifying The Disease and Referring A Doctor

4.2.1 MODULE DESCRIPTION

4.2.1.1 User Validation and Extraction of Symptoms

The validation of the user login details occurs here. Then Symptoms are extracted using String Searching Algorithm where substring representing the symptoms is identified in the naturallanguage text input. When users give directly the symptom name such as the system will identify it. But however, the system should

also be able to handle input like, “When I read, I’m okay at first, but over time, my eyes seem to get tired, and I start to see double.” In this case, the system should extract words like “eyes tired” and “see double” (and not substrings like “read” or “okay”).

4.2.1.2 Extracted Symptoms with Trained Datasets

Given some substring from the user’s input, we generate a list of suggested closest symptoms. We then ask the user to confirm if they have any of the symptoms from the suggested ones. Based on their reply few diseases are being shortlisted. Then further symptom clarification and symptom suggestions are being done by asking the users a series of questions and the mapping of the symptoms to the exact disease is done.

4.2.1.3 Specifying the Disease and Referring a doctor

This process carries the list of diseases in the database and each symptom being entered is compared to the symptoms of the common diseases. The next symptom is checked until a matching symptom is found. They are shortlisted based on the end user’s input on the question evaluation. The accurate disease is identified and specified to the end user by the chatbot. The chatbot checks whether the identified disease is a major issue or minor issue based on the conditions built in the chatbot. If it is a major issue the chatbot refers a specialist to the end user by sending the doctor details. And if it is a minor issue the chatbot specifies the disease and alerts the end user with first aid or remedy and asks to visit a doctor shortly.

What is Python?

Python is a popular programming language. It was created in 1991 by Guido van Rossum.

It is used for:

1. web development (server-side),
2. software development,
3. mathematics,
4. system scripting.

What can Python do?

1. Python can be used on a server to create web applications.
2. Python can be used alongside software to create workflows.
3. Python can connect to database systems. It can also read and modify files.

Python can be used for rapid prototyping, or for production-ready software development.

Why Python?

- ❖ Python works on different platforms (Windows, Mac, Linux, Raspberry Pi, etc).
- ❖ Python has a simple syntax similar to the English language.
- ❖ Python has syntax that allows developers to write programs with fewer lines than some other programming languages.
- ❖ Python runs on an interpreter system, meaning that code can be executed as soon as it is written. This means that prototyping can be very quick.
- ❖ Python can be treated in a procedural way, an object-orientated way or a functional way.
- ❖ Good to know
- ❖ The most recent major version of Python is Python 3, which we shall be using in this tutorial. However, Python 2, although not being updated with anything other than security updates, is still quite popular.
- ❖ In this tutorial Python will be written in a text editor. It is possible to write Python in an Integrated Development Environment, such as Thonny, Pycharm, Netbeans or Eclipse which are particularly useful when managing larger collections of Python files.
- ❖ Python Syntax compared to other programming languages
- ❖ Python was designed to for readability, and has some similarities to the

English language with influence from mathematics.

- ❖ Python uses new lines to complete a command, as opposed to other programming languages which often use semicolons or parentheses.
- ❖ Python relies on indentation, using whitespace, to define scope; such as the scope of loops, functions and classes. Other programming languages often use curly-brackets for this purpose.

4.2.1.4 Python Install

- ❖ Many PCs and Macs will have python already installed.
- ❖ To check if you have python installed on a Windows PC, search in the start bar for Python or run the following on the Command Line (cmd.exe):
- ❖ `C:\Users\Your Name>python --version`
- ❖ To check if you have python installed on a Linux or Mac, then on linux open the command line or on Mac open the Terminal and type:
- ❖ `python --version`
- ❖ If you find that you do not have python installed on your computer, then you can download it for free from the following website: <https://www.python.org/>

4.2.1.5 Python Quick Start

- ❖ Python is an interpreted programming language, this means that as a developer you write Python (.py) files in a text editor and then put those files into the python interpreter to be executed.

The way to run a python file is like this on the command line: `C:\Users\Your Name>pythonhelloworld.py`

Where "helloworld.py" is the name of your python file.

Let's write our first Python file, called helloworld.py, which can be done in any text editor.

```
helloworld.py
```

```
print("Hello, World!")
```

Simple as that. Save your file. Open your command line, navigate to the directory where you saved your file, and run:

```
C:\Users\Your Name>python helloworld.py
```

The output should read:

```
Hello, World!
```

Congratulations, you have written and executed your first Python program.

4.2.1.6 The Python Command Line

To test a short amount of code in python sometimes it is quickest and easiest not to write the code in a file. This is made possible because Python can be run as a command line itself.

Type the following on the Windows, Mac or Linux command line:

```
C:\Users\Your Name>python
```

From there you can write any python, including our hello world example from earlier in the tutorial:

```
C:\Users\Your Name>python
```

```
Python 3.6.4 (v3.6.4: d48eceb, Dec 19 2017, 06:04:45) [MSC v.1900  
(Intel)] on win32
```

32 bit

Type "help", "copyright", "credits" or "license" for more information.

```
>>> print("Hello, World!")
```

Which will write "Hello, World!" in the command line:

```
C:\Users\Your Name>python
```

```
Python 3.6.4 (v3.6.4:d48eceb, Dec 19 2017, 06:04:45) [MSC v.1900  
(Intel)] on win32
```

32 bit

Type "help", "copyright", "credits" or "license" for more information.

```
>>> print("Hello, World!")
```

Hello, World!

Whenever you are done in the python command line, you can simply type the following to quit the python command line interface:

exit()Execute Python Syntax

As we learned in the previous page, Python syntax can be executed by writing directly in the Command Line:

```
>>> print("Hello, World!") Hello, World!
```

Or by creating a python file on the server, using the .py file extension, and running it in the Command Line:

```
C:\Users\Your Name>python myfile.py
```

4.2.1.7 Python Indentations

Where in other programming languages the indentation in code is for readability only, in Python the indentation is very important.

Python uses indentation to indicate a block of code.

```
Example if 5 > 2:print("Five is greater than two!")
```

Python will give you an error if you skip the indentation:
Example if 5 > 2:print("Five is greater than two!")

4.2.1.8 Comments

Python has commenting capability for the purpose of in-code documentation.

Comments start with a #, and Python will render the rest of the line as a comment:

4.3 SYSTEM STUDY

4.3.1 FEASIBILITY STUDY

The feasibility of the project is analyzed in this phase and business proposal is put forth with a very general plan for the project and some cost estimates. During system analysis the feasibility study of the proposed system is to be carried out. This is to ensure that the proposed system is not a burden to the company. For feasibility analysis, some understanding of the major requirements for the system is essential.

Three key considerations involved in the feasibility analysis are

- A. ECONOMICAL FEASIBILITY
- B. TECHNICAL FEASIBILITY
- C. SOCIAL FEASIBILITY

4.3.1.1 ECONOMICAL FEASIBILITY

This study is carried out to check the economic impact that the system will have on the organization. The amount of fund that the company can pour into the research and development of the system is limited. The expenditures must be justified. Thus the developed system as well within the budget and this was achieved because most of the technologies used are freely available. Only the customized products had to be purchased.

4.3.1.2 TECHNICAL FEASIBILITY

This study is carried out to check the technical feasibility, that is, the technical requirements of the system. Any system developed must not have a high demand on the available technical resources. This will lead to high demands on the available technical resources. This will lead to high demands being placed on the client. The developed system must have a modest requirement, as only minimal or null changes are required for implementing this system

4.3.1.3 SOCIAL FEASIBILITY

The aspect of study is to check the level of acceptance of the system by the user. This includes the process of training the user to use the system efficiently. The user must not feel threatened by the system, instead must accept it as a necessity. The level of acceptance by the users solely depends on the methods that are employed to educate the user about the system and to make him familiar with it. His level of confidence must be raised so that he is also able to make some constructive criticism, which is welcomed, as he is the final user of the system.

4.4 SYSTEM TESTING

The purpose of testing is to discover errors. Testing is the process of trying to discover every conceivable fault or weakness in a work product. It provides a way to check the functionality of components, sub-assemblies, assemblies and/or a finished product. It is the process of exercising software with the intent of ensuring that the Software system meets its requirements and user expectations and does not fail in an unacceptable manner.

4.4.1 TYPES OF TESTS

4.4.1.1 UNIT TESTING

Unit testing involves the design of test cases that validate that the internal program logic is functioning properly, and that program inputs produce valid outputs. All decision branches and internal code flow should be validated. It is the testing of individual software units of the application. It is done after the completion of an individual unit before integration. This is a structural testing, that relies on knowledge of its construction and is invasive. Unit tests perform basic tests at component level and test a specific business process, application, and/or system configuration. Unit tests ensure that each unique path of a business process performs accurately to the documented specifications and contains clearly defined inputs and expected results.

4.4.1.2 Integration testing

Integration tests are designed to test integrated software components to determine if they actually run as one program. Testing is event driven and is more concerned with the basic outcome of screens or fields. Integration tests demonstrate that although the components were individually satisfaction, as shown by successfully unit testing, the combination of components is correct and consistent.

4.4.1.3 Functional test

Functional tests provide systematic demonstrations that functions tested are available as specified by the business and technical requirements, system documentation, and user manuals.

Functional testing is centered on the following items:

Valid Input : identified classes of valid input must be accepted.

Invalid Input : identified classes of invalid input must be rejected.

Functions : identified functions must be exercised.

Output : identified classes of application outputs must be exercised.

Systems/Procedures: interfacing systems or procedures must be invoked.

Organization and preparation of functional tests is focused on requirements, key functions, or special test cases. In addition, systematic coverage pertaining to identify Business process flows; data fields, predefined processes, and successive processes must be considered for testing. Before functional testing is complete, additional tests are identified and the effective value of current tests is determined.

4.4.1.4 System Test

System testing ensures that the entire integrated software system meets requirements. It tests a configuration to ensure known and predictable results. A example of system testing is the configuration oriented system integration test. System testing is based on process descriptions and flows, emphasizing pre-driven process links and integration points.

White Box Testing

White Box Testing is a testing in which in which the software tester has knowledge of the inner workings, structure and language of the software, or at least its purpose. It is purpose. It is used to test areas that cannot be reached from a black box level.

Black Box Testing

Black Box Testing is testing the software without any knowledge of the inner workings, structure or language of the module being tested. Black box tests, as most other kinds of tests, must be written from a definitive source document, such as specification or requirements document, such as specification or requirements document. It is a testing in which the software under test is treated, as a black box .you cannot “see” into it. The test provides inputs and responds to outputs without considering how the software works.

Unit Testing

Unit testing is usually conducted as part of a combined code and unit test phase of the software lifecycle, although it is not uncommon for coding and unit testing can going as far as our project to be conducted as two distinct phases.

4.4.2 Test strategy and approach

Field testing will be performed manually and functional tests will be written in detail.

4.4.2.1 Test objectives

- a) All field entries must work properly.
- b) Pages must be activated from the identified link.
- c) The entry screen, messages and responses must not be delayed.

4.4.2.2 Features to be tested

- a) Verify that the entries are of the correct format
- b) No duplicate entries should be allowed
- c) All links should take the user to the correct page.

Integration Testing

Software integration testing is the incremental integration testing of two or more integrated software components on a single platform to produce failures caused by interface defects.

The task of the integration test is to check that components or software applications, e.g. components in a software system or – one step up – software applications.

Test Results

All the test cases mentioned above passed successfully. No defects encountered.

4.4.3 Acceptance Testing

User Acceptance Testing is a critical phase of any project and requires significant participation by the end user. It also ensures that the system meets the functional requirements.

Test Results: All the test cases mentioned above passed successfully. No defects encountered

4.5 DIAGRAMS AND GOALS OF PROJECTS

4.5.1 DATA FLOW DIAGRAM

- a) The DFD is also called as bubble chart. It is a simple graphical formalism that can be used to represent a system in terms of input data to the system, various processing carried out on this data, and the output data is generated by this system.
- b) The data flow diagram (DFD) is one of the most important modeling tools. It is used to model the system components. These components are the system process, the data used by the process, an external entity that interacts with the system and the information flows in the system.
- c) DFD shows how the information moves through the system and how it is modified by a series of transformations. It is a graphical technique that depicts information flow and the transformations that are applied as data moves from input to output.
- d) DFD is also known as bubble chart. A DFD may be used to represent a system at any level of abstraction. DFD may be partitioned into levels that

represent increasing information flow and functional detail.

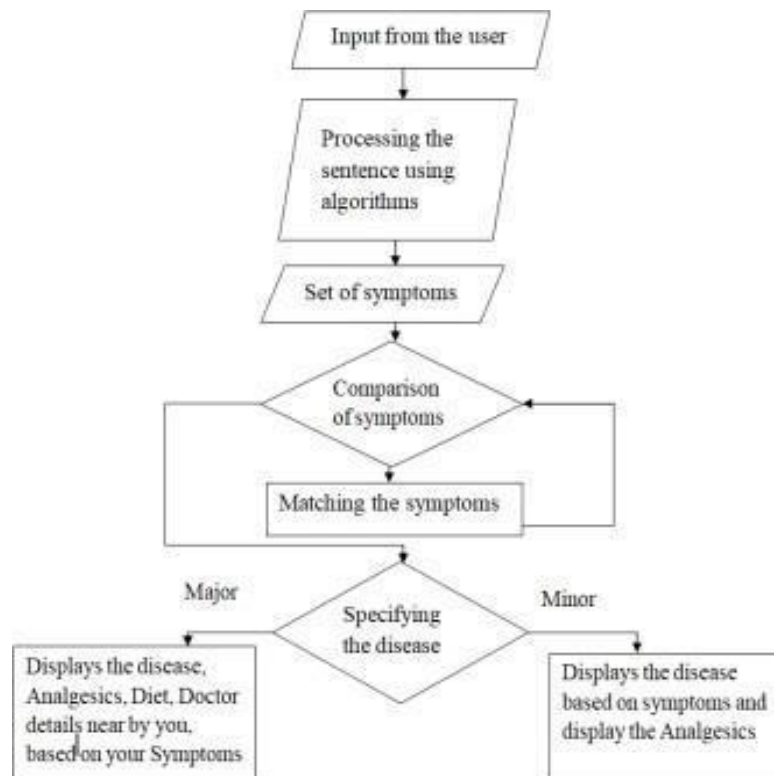


FIG-4.1 Data Flow diagram of Medical health assistant Chatbot using AI

4.5.2 UML DIAGRAMS

UML stands for Unified Modeling Language. UML is a standardized general-purpose modeling language in the field of object-oriented software engineering. The standard is managed, and was created by, the Object Management Group. The goal is for UML to become a common language for creating models of object oriented computer software. In its current form UML is comprised of two major components: a Meta-model and a notation. In the future, some form of method or process may also be added to; or associated with, UML. The Unified Modeling Language is a standard language for specifying, Visualization, Constructing and documenting the artifacts of software system, as well as for business modeling and other non-software systems. The UML represents a collection of best engineering practices that have proven successful in the modeling of large and complex systems. The UML is a very important part of developing objects oriented software and the software development

process.

4.5.3 GOALS OF PROJECTS

The Primary goals in the design of the UML are as follows:

- a) Provide users a ready-to-use, expressive visual modeling Language so that they can develop and exchange meaningful models.
- b) Provide extendibility and specialization mechanisms to extend the core concepts.
- c) Be independent of particular programming languages and development process.
- d) Provide a formal basis for understanding the modeling language.
- e) Encourage the growth of OO tools market.
- f) Support higher level development concepts such as collaborations, frameworks, patterns and components.
- g) Integrate best practices.

4.5.4 USE CASE DIAGRAM:

A use case diagram in the Unified Modeling Language (UML) is a type of behavioral diagram defined by and created from a Use-case analysis. Its purpose is to present a graphical overview of the functionality provided by a system in terms of actors, their goals (represented as use cases), and any dependencies between those use cases. The main purpose of a use case diagram is to show what system functions are performed for which actor. Roles of the actors in the system can be depicted.

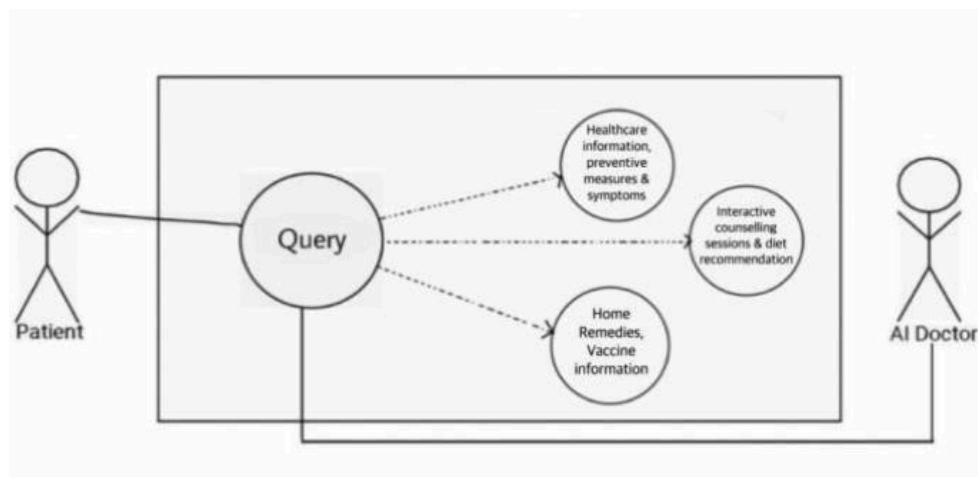


FIG-4.2 USE CASE DIAGRAM OF HEALTHCARE CHATBOT

4.5.5 SEQUENCE DIAGRAM

A sequence diagram in Unified Modeling Language (UML) is a kind of interaction diagram that shows how processes operate with one another and in what order. It is a construct of a Message Sequence Chart. Sequence diagrams are sometimes called event diagrams, event scenarios, and timing diagrams.

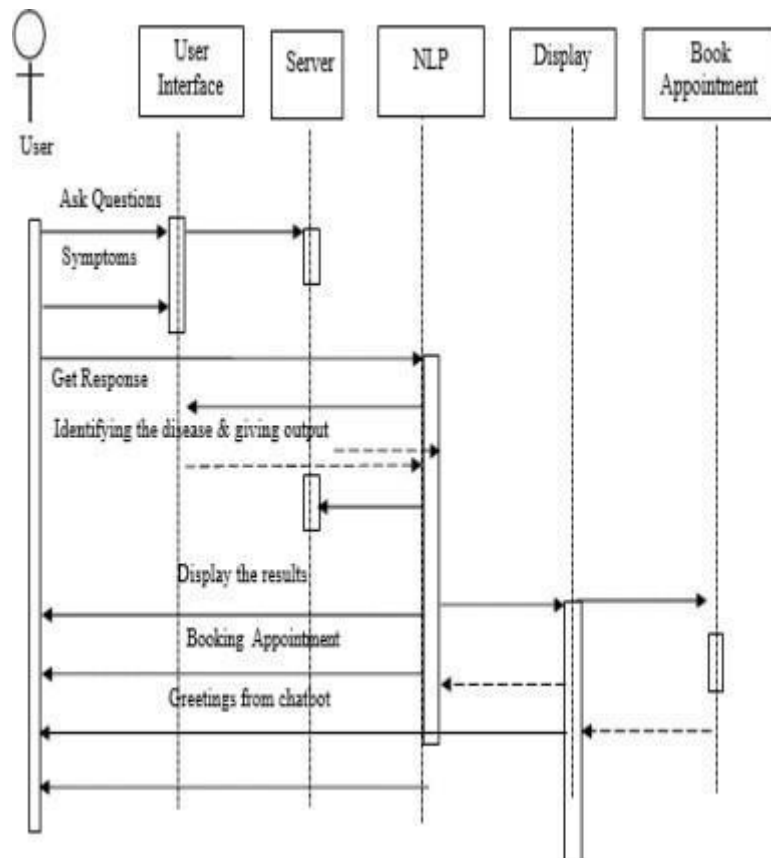


FIG-4.3 Sequence Diagram

CHAPTER 5

RESULTS AND CONCLUSION

5.1 RESULTS



FIG-5.1 HOME PAGE OF AI CHATBOT

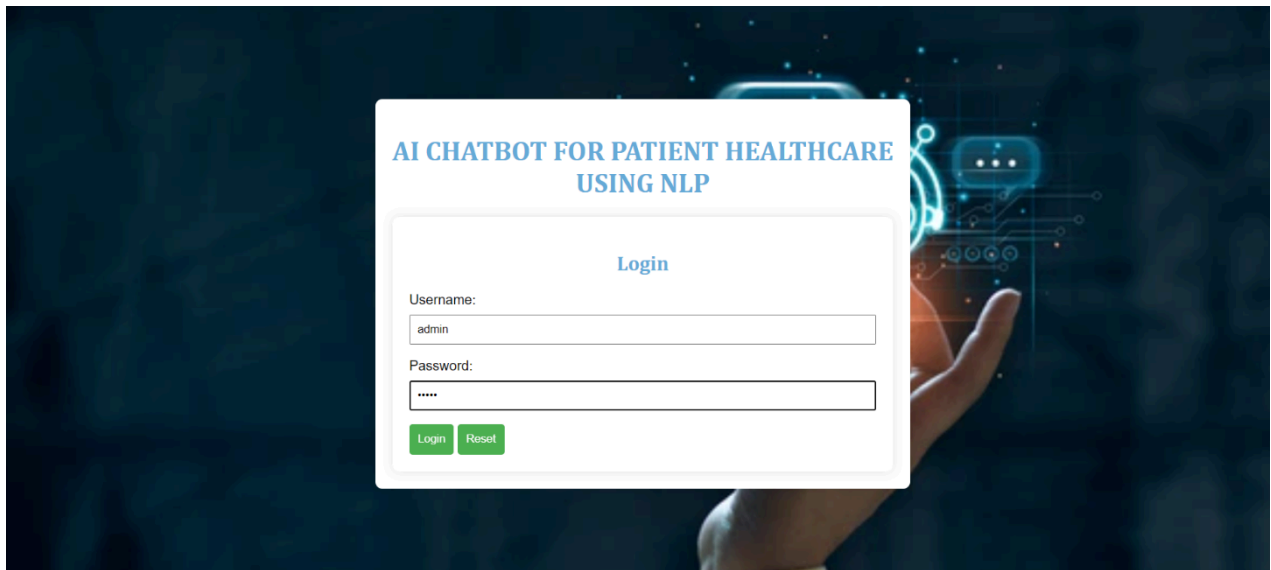


FIG-5.2 USER LOGIN PAGE

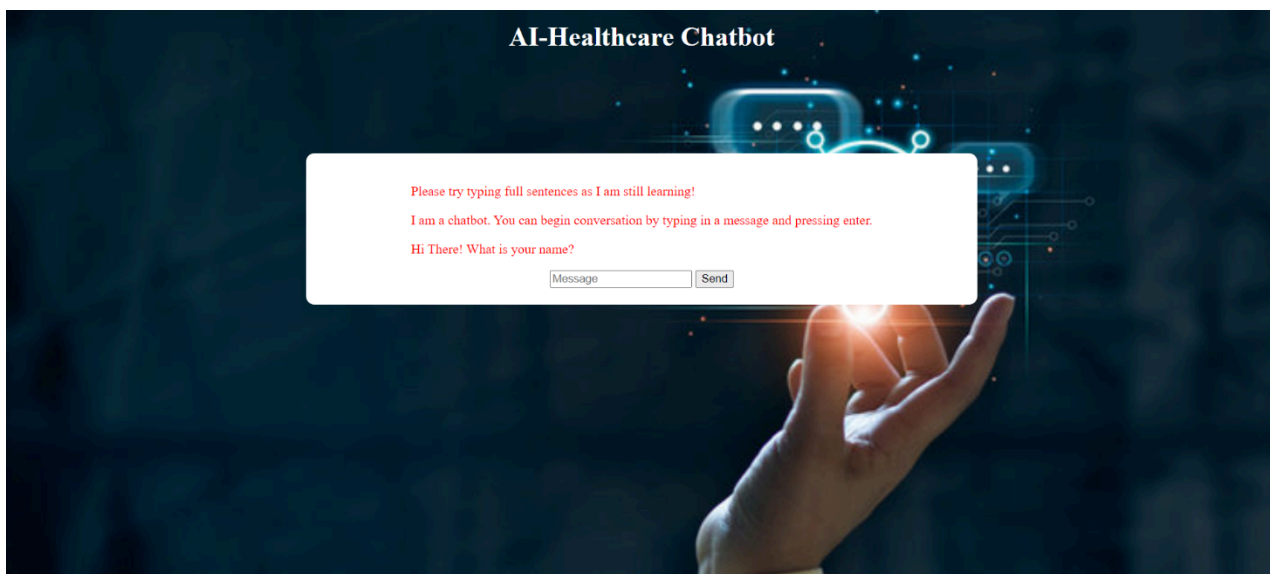
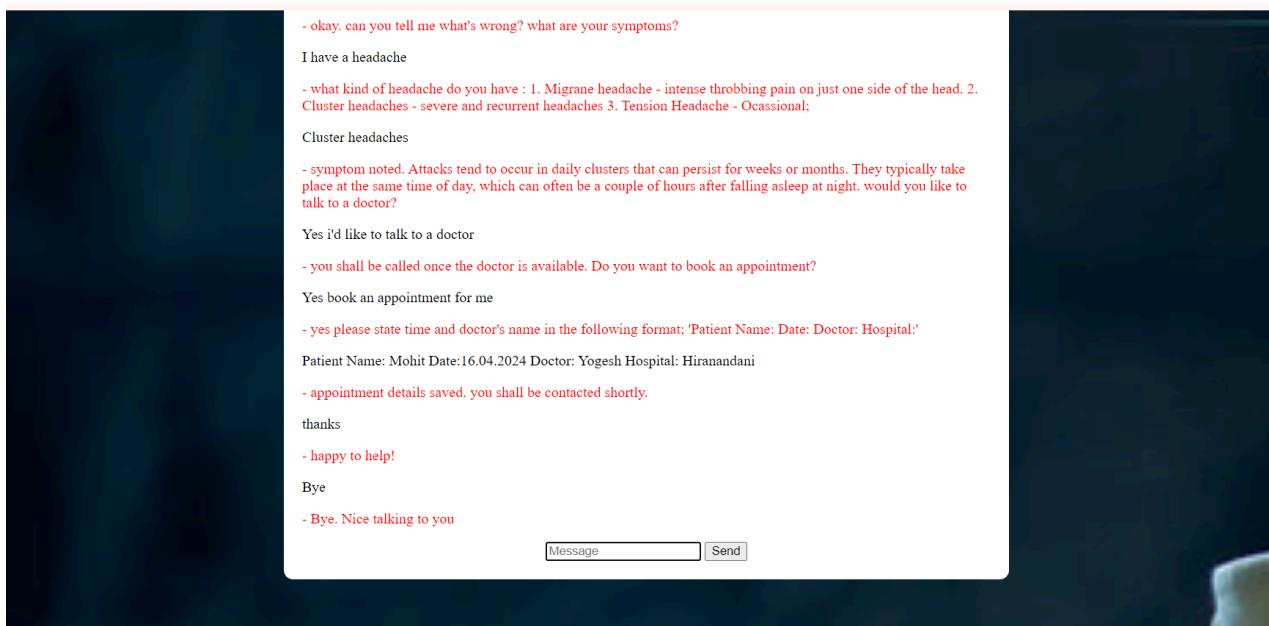


FIG-5.3 Basic Information Detail Page



FIG-5.4 MEDICAL CHATBOT PAGE



5.2 CONCLUSION

In conclusion, the development of an AI-based chatbot for healthcare holds great promise in improving patient engagement and accessibility to medical information. This technology offers round-the-clock support, efficiently addressing user queries and providing personalized health advice. Leveraging natural language processing, the chatbot ensures a user-friendly interaction experience, catering to individuals with varying levels of health literacy and empowering them to manage their well-being effectively. However, while the chatbot demonstrates significant potential, certain limitations and ethical considerations must be addressed. Its effectiveness hinges on the accuracy of underlying algorithms, and challenges remain in handling complex medical inquiries or emergencies. Additionally, ensuring user privacy and maintaining the confidentiality of health data are paramount in the deployment of such systems. Despite these challenges, the continuous advancement of technology holds the promise of further enhancing the capabilities of AI-based chatbots, ultimately revolutionizing healthcare interactions and improving overall patient care.

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SOURCE CODE

HTML CODE

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Machine </title>
  <link rel="stylesheet" href="{{ url_for('static', filename='css/style.css') }}">
  <style>
    body {

background:url('https://png.pngtree.com/thumb_back/fh260/background/20230706/p
ngtree-3d-render-of-a-chatbot-amidst-binary-code-image_3805053.jpg');
    background-size:cover;
    }
    nav{
      font-size:20px;
      margin-right: 20%;
    }
    .home{
      display: right;
    }
    nav a{
      text-decoration: none;
      margin:2%;
      color:white;
    }
    h1{
      align-items: center;
      justify-content: center;
      margin:20%;
      color: white;
      font-size:50px;
      font-wight:bolder;
      text-transform: uppercase;
    }

  </style>
</head>
<body>
```

```

<nav>
  <div class="home">
    <a href="#">Home</a>
    <a href="/login">Login</a>
    <a href="/index">Chatbot</a>
  </div>
</nav>
<div class="">

  <h1><center>AI Chatbot For Patient Healthcare Using NLP</center></h1>

</div>

</body>
</html>

```

CSS CODE

```

<style type="text/css">
  .fixed-panel {
    min-height: 400px;
    max-height: 400px;
    background-color: #19313c;
    color: white;
    overflow: auto;
  }
  .media-list {
    overflow: auto;
    clear: both;
    display: table;
    overflow-wrap: break-word;
    word-wrap: break-word;
    word-break: normal;
    line-break: strict;
  }
  .panel {
    margin-bottom: 20px;
    background-color: #fff;
    border: 6px solid transparent;
    border-radius: 25px;
    -webkit-box-shadow: 0 1px 1px rgba(0,0,0,.05);
    box-shadow: 0 1px 1px rgba(0,0,0,.05);
  }
  .panel-info {
    border-color: #0c2735;
  }

```

```

.panel-info>.panel-heading {
    color: white;
    background-color: #0c2735;
    border-color: #0c2735;
}
.panel-footer {
    padding: 10px 15px;
    background-color: #0c2735;
    border-top: 1px solid #0c2735;
    border-bottom-right-radius: 3px;
    border-bottom-left-radius: 3px
}
body {
    background: rgb(252, 177, 37); /* Old browsers */
    background: -moz-linear-gradient(-45deg, rgba(96,143,149,1) 0%,
    rgba(0,133,136,1) 9%, rgba(12,36,73,1) 52%, rgba(26,30,59,1) 100%); /* FF3.6-15 */
    margin-top: 16%;
    margin-left: 25em;
}
</style>

```

APP.PY

```

from flask import Flask, render_template, request
from flask import Flask, render_template, request, redirect, url_for
from chatterbot import ChatBot
from chatterbot.trainers import ChatterBotCorpusTrainer
import os

from chatterbot import ChatBot
from chatterbot.trainers import ListTrainer

filenumber=int(os.listdir('saved_conversations')[-1])
filenumber=filenumber+1
file= open('saved_conversations/'+str(filenumber),"w+")
file.write('bot : Hi There! I am a medical chatbot. You can begin conversation by
typing in a message and pressing enter.\n')
file.close()

app = Flask(__name__)

english_bot = ChatBot('Bot',
    storage_adapter='chatterbot.storage.SQLStorageAdapter',
    logic_adapters=[
{

```

```

        'import_path': 'chatterbot.logic.BestMatch'
    },

],
trainer='chatterbot.trainers.ListTrainer')
english_bot.set_trainer(ListTrainer)

# Define the expected username and password
expected_username = 'admin'
expected_password = 'admin'

@app.route('/login')
def login_page():
    return render_template('Loginpage.html')

@app.route('/login', methods=['POST'])
def login():
    username = request.form['username']
    password = request.form['password']

    if username == expected_username and password == expected_password:
        # Successful login, redirect to index page
        return redirect(url_for('index_page'))
    else:
        # Invalid username or password, show an error message
        return render_template('Loginpage.html', error_message='Enter a Valid
Username and Password')

@app.route("/")
def home_page():
    return render_template("home.html")

@app.route("/index")
def index_page():
    return render_template("index.html")

@app.route("/get")
def get_bot_response():
    userText = request.args.get('msg')
    response = str(english_bot.get_response(userText))

    appendfile=os.listdir('saved_conversations')[-1]
    appendfile= open('saved_conversations/'+str(filenumbe)r,"a")
    appendfile.write('user : '+userText+'\n')
    appendfile.write('bot : '+response+'\n')
    appendfile.close()

    return response

```

```

if __name__ == "__main__":
    app.debug = True
    app.run()

```

TRAIN.PY

```

from chatterbot import ChatBot, utils
from chatterbot.trainers import ListTrainer
import os

try:
    os.remove("db.sqlite3")
    print("Old database removed. Training new database")
except FileNotFoundError:
    print("No database found. Creating new database.")

english_bot = ChatBot('Bot')
english_bot.set_trainer(ListTrainer)

for file in os.listdir('data'):
    print('Training using ' + file)
    convData = open('data/' + file, 'r').readlines()
    english_bot.train(convData)
    print("Training completed for " + file)

```

LOGINPAGE.HTML

```

<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Machine Prediction</title>
    <link rel="stylesheet" href="{{ url_for('static', filename='css/style.css') }}">
    <style>
        body {
            font-family: Arial, sans-serif;
            background:
url('https://www.shutterstock.com/image-photo/hand-touching-digital-chatbot-provide-
600nw-1639774756.jpg');
            margin: 0;
            display: flex;
            align-items: center;

```

```

    justify-content: center;
    height: 100vh;

    background-size: cover;
}

.login-container {
    background-color: #fff;
    padding: 20px;
    border-radius: 8px;
    box-shadow: 0 0 10px rgba(0, 0, 0, 0.1);
}

label {
    display: block;
    margin-bottom: 8px;
}

input {
    width: 100%;
    padding: 8px;
    margin-bottom: 16px;
    box-sizing: border-box;
}

button {
    background-color: #4caf50;
    color: white;
    padding: 10px;
    border: none;
    border-radius: 4px;
    cursor: pointer;
}

button:hover {
    background-color: #45a049;
}

/* Add style for the register button */
.register-btn {
    background-color: #3498db;
    color: white;
    padding: 10px;
    border: none;
    border-radius: 4px;
    cursor: pointer;
    margin-top: 10px;
}

.register-btn:hover {

```

```

        background-color: #2980b9;
    }
    .additional-line {
        color: #3498db;
        text-align: center;
        font-family: Cambria, Cochin, Georgia, Times, 'Times New Roman', serif;
    }
    .h2 {
        text-align: center;
        color: #66acdb;
        font-family: Cambria, Cochin, Georgia, Times, 'Times New Roman', serif;
    }
}

</style>
</head>
<body>

    <div class="login-container">

        <h1 class="additional-line" style="color: #66acdb;">AI CHATBOT FOR
PATIENT HEALTHCARE <br> USING NLP</h1>

        <div class="login-container">
            <h2 class="h2">Login</h2>
            <form action="{{ url_for('login') }}" method="post">

                <label for="username">Username:</label>
                <input type="text" id="username" placeholder="Enter the username"
name="username" required>

                <label for="password">Password:</label>
                <input type="password" id="password" placeholder="Enter the password"
name="password" required>

                <button type="submit">Login</button>
                <button type="reset">Reset</button>

            </form>
        </div>

    </div>

</body>
</html>

```

Chatbot development driven by Artificial Intelligence for uncomplaining Medical Treatment

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ABSTRACT

Medical care is vital to a healthful lifestyle But it's far more difficult to get scientific help if you have clinical issues. The proposed believed is to grow a sensible Chatbot which could use ML to investigate the ailment and generate the essential facts to talk about the condition with the medical doctor. Medical discourses had been created to lessen scientific charges and improve get right of entry to clinical know-how. Some Chatbot act as clinical publications, assisting sufferers study their disorder and enhance their health. Users can actually advantage from Chatbot's if they are able to become aware of types of diseases and offer the vital facts. Automated textual content-primarily based diagnostics allow sufferers to engage inside the analysis of their medical issues and offer personalized evaluation with signs. Therefore, humans reflect on consideration on their very own proper and personal balance Man-made speculation has center branches like, recreated insight which learns, look through plan, works on itself utilizing the information and displays the result. To lead major areas of strength for a clinical thought is particularly basic. In few unsocial zed regions outstandingly elusive the social event of master effectively concerning clinical issues. The primary goal of this project is to develop a medical services talk bot using natural language processing (NLP) based on human intelligence that can analyze a condition and provide necessary information about it prior to counseling or a visit to a specialist. This will lower the cost of medical care and increase acceptance of this clinical talk bot. Certain visit bots function as clinical reference books, assisting the patient in understanding their infection and improving their health. A visit bot's actual worth must be acknowledged by the client when it can analyze any sickness and give the essential data. A

text-to-message chatbot converses with patients online about their clinical issues and gives them a customized set of judgments in view of their side effects. When potential patients visit the website, these bots help them locate a specialist, set up appointments, and access the appropriate treatment. The information are handled and investigated by this chatbot utilizing the normal language handling procedure, and the proper result is given. It raises the question of whether the task mentioned above should be assigned to human employees. This clinical benefits chatbot system will give patients clinical consideration support online 24x7. It helps generate leads and, as a result, communicates information about potential deals. By asking the questions in a series, the patient is able to focus on the questions that are most important to him or her.

Keywords: AI, AI Chatbot, AI Chatbot structure, AI health Chatbot's, health Chatbot.

I. INTRODUCTION

Healthcare Chatbot's are having a massive impact on public health way of life. It increased faith and decreased human error. Today's people are addicted to the net however they don't care approximately their non-public protection. They keep away from hospitalization for minor troubles which could turn into severe illnesses within the future. The proposed concept solves this trouble. The idea is to create a Chatbot this is free and available 24/7. The Chatbot is loose and to be had to the consumer anyplace there, whether they may be working in their surroundings, which encourages the consumer to keep and use it. Modern artificial intelligence has developed the point at which humans can learn to software and effectively allows human beings talk It is essential. Maybe of the most well-known model in the new records of the Chabot Siri, i.e. The AI assistant. The well-known

software a part of Apple's products. Sir, I Chatbots have become mainstream in 2011. Since then they have got launched their torches Over time, every enterprise began using them. The conversation is using a new trend in UX. Belongs A consumer enjoy for you net The county or provider is mechanically primarily based on the previous Behavior if users create artificial Smart apps like Alexa help you Using your voice to manipulate your thoughts. If you are a client, you can now speak with this man-made cognizance. Chatbots on notable illuminating designs which consolidate Facebook, Skype. Today, using chatbots has grown. Customs fields from customer support to life and demise hazard. Chatbots are coming to healthcare It is also powerful in solving fitness problems. Facebook's wellbeing and qualification chatbots are starting to get momentum. is released this 12 months Allowing healthcare specialists to create ambassadors I changed into informed that this is the path that desires it. A properly example of that is Health Tab, a main organization Bot on the release of a health messaging app. He does now not allow it Users can ask and get hold of clinical related questions. Answer. This saves capital expenses for professional session. Machine mastering is at its height right now and is one example of the use of Chatbot to facilitate progress. It have to also be clarified that the reason of the Chatbot isn't always to diagnose sufferers. The concept became to create a medical chat the use of system learning that might offer a few basic facts approximately the sickness before consulting a doctor. Text-based totally clinical Chatbot help patients percentage their clinical worries and offer a customized diagnosis primarily based on symptoms. After this the affected person may be dispatched to a specialist. This collection of activities saves quite a few time for the instructor. Now, Chatbot are usually ready to help individuals who need scientific assist. In addition, a virtual assistant may be chargeable for reminding customers of medicines and tracking the affected person's fitness popularity. By speaking fluently, Chatbot have interaction with real people. Chatbot are used in applications which includes e-trade customer service, name facilities and on-line games. However, with Chatbot, you can engage with a textual content or voice interface and get answers through system getting to know. Hotspots that aid in the resolution of health issues are emerging in the healthcare sector. Prosperity and Capability Chatbot are beginning to gain appreciation Facebook's stroll changed into released final year Enables healthcare

industries to broaden Voyager Chatbots engage with users. A desirable example is Health Tab Prima. Unplug the health bot inside the Messenger app. He does now not permit it Users can ask and acquire their medical queries. Today, the usage of waterfalls extends from customer service in both situations of life and death. Chatbots are getting into the medical services enterprise to assist clear up problems. Health and health chatbots are beginning to benefit recognition in the market. Last 12 months, Facebook started out a message permitting healthcare companies to create chatbots that engage with clients. The essential organization for automating wellbeing on the Nente application, Wellbeing Tab, serves as an exact model. It awards clients to welcome their intelligent questions and get solutions.

II. PROBLEM STATEMENT AND OBJECTIVE

Chat may be very useful to cause the ailment itself and provide the essential records. Automated text message diagnostics join sufferers with hospital treatment and offer customized diagnostics to aid their signs. Therefore, you should contend with your very own protection and protection.

III. LITERATURE SURVEY

Literature review is a crucial step in the software program improvement manner. Before the tool is advanced, it's far important to decide the time elements, price range and strengths of the enterprise. With all if these conditions are met, the next step is to choose a working device and a programming language that could be used to build the device. Exactly when computer programmers begin encouraging a contraption, they will require extra help. This aids can be acquired from senior applications, books or web sites. This paper contends that because of innovative progression, cell phones have quickly acquired ubiquity, and virtually all clients convey them with them. Here, cell writing computer programs is made to assemble the records from individual element which then, gives the sensible reaction to the patient. This response offers logical help and works with the early recognition of a particular illness and its medicines. The fundamental goal become to convey a reaction which could work with the information get-together and transmission in certifiable time. This ongoing information is transmitted to a web server, encoded, and further evaluated for insights [3]. The layout of the improvement as well as execution sagacious wi-fi shrewd clinical consideration contraption is depicted.

Before designing the system, the above factors are saved in mind whilst designing the gadget. A main part of the undertaking development branch's work is to do all the correct analyzes which can be

required to expand the assignment. Literature review is the most crucial place of software improvement for any project. Before developing the equipment and the related plan, it's far vital to perceive and examine the elements of time, aid requirements, manpower, financial and organizational strengths. After a lot of these questions had been responded and the research executed, the following step is to decide the specification of the software in the computer venture, what kind of working system can be required for the motive, and what software can be required for the venture. Paintings making tracks like system and related sports.

1. Ananya Singh et al. 2023 - This investigation concentrate on gives a composing study of mechanical movements in CAI experts planned to adjust to troubles in the clinical benefits industry. Utilizing the capacities of CAI specialists, the objective of this study is to give specialists, attendants, and medical services heads with answers for regular authoritative difficulties and expanded efficiency.

2. Kevin Dedy Setiawan et al. 2023- This examination bases on the utilization of reenacted information chatbots in blend end, totally objective on investigating their adequacy and breaking point in early mediations and fixes. The motivation driving this conscious forming audit is to investigate centers around including man-made information chatbot age in jumble gauge. A capable outline of the creating changed into done, considering an amount of four picked concentrates as per predefined joining and excusal rules. The assessment convention called for taking a gander at concentrates on that had been distributed in earlier years, with a specific spotlight on papers that had been distributed after 2020. As per research, reproduced knowledge chatbots can assume a critical part in helping clinical experts in expecting issues and going with compelling choices. Man-made information chatbot age has massive cutoff in disorder supposition. By the utilization of assessments and design securing information on limits, chatbots can work on the accuracy and speed of affirmation. It is guessed that proceeded with examination and improvement endeavors will prepare the abilities of AI chatbots and remodel healthcare transport to improve patient effects and sickness management.

3. Renaldo Robert sanjaya et al. 2023- The assessment protocol worried inspecting studies published in exceptional years, with a picked thought on papers from 2020 onwards. The effects admonish that computerized reasoning chatbots will play a vital position in supporting healthcare professionals document ailments and make knowledgeable selections. AI chatbot era has extensive capacity in ailment prediction. By the use of algorithms and device gaining knowledge of skills, chatbots can chip away at the precision and speed of conjecture. Continued with studies and improvement attempts are expected to saddle the abilities of AI chatbots and remodel healthcare transport to improve patient consequences and disease management.

4. Md Afiful Islam Mosumder et al.2023- The goal is to discover the numerous opportunities of carrying out consultations, remedies and different medical processes using Metaverse with the assist of NLP. For this purpose, we suggest an approach that includes the evaluation of texts and sounds near the environment, to be able to create a more immersive revel in, hence presenting a higher degree of conversation among the affected person and the medical doctor. In this wellknown studies model, we advocate our technique with moral counseling and therapeutic applications. Implementing this approach will result in an sensible and dependable patient monitoring gadget that sufferers and clinicians can agree with way to the immersive experience created by Metaverse.

5. Deborah sattler et al. 2023- This take a look at proposes to integrate conversational AI into social research platforms to promote non-public narratives for the aged, palliative care needs, or inclined patients from distinct linguistic groups. This have a look at highlights the abilities of AI-based analytics and proposes the use of this era to investigate fitness survey data and create personalized tales that meet the unique desires of every character. The proposed approach aims to enhance affected person engagement with the aid of enhancing affected person care and providing the most shrewd advice derived from survey responses.

6. Akshayta singh et al.2021-Public coverage performs an essential function in determining the development of a nation. Cost, high-quality and accessibility of health offerings determine the nice of fitness. In view of this, this studies work pursuits to broaden an IoT-based health package with a transportable, light, light and low electricity electronic fitness gadget. Prepares and video display units fitness parameters which includes temperature, ECG, heart rate, blood strain and so forth. It offers

unique affected person monitoring and care help to reinforce the country's fitness machine from rural to city areas. The kit is available 24/7 because actual-time data can be stored and retrieved from the cloud each time, everywhere. A full-size trouble in rural India is the health practitioner-patient ratio of one:10,000, that is already being solved with this package, as docs across India can now get right of entry to records from the charts. In addition, our Rasa-primarily based NLP AI bot enables sufferers diagnose their ailments, prescribe remedies, agenda health practitioner appointments and inform caregivers with greater accurate checking out. A web application is also supplied to extend our machine's usability.

7. Fabian berns et al.2023-Despite current advances in AI and information technological know-how, the huge quantity of massive statistics to be had to medical and healthcare companies has no longer matched its capacity. Addressing key worries approximately information transparency and protection will help free up these advances in medication, as a consequence aiding research and patient care. Next, in this article I advise a gadget for the specific function of scientific AI. We set out our imaginative and prescient for aligning the scientific functionality of AI with the regulatory necessities of the scientific industry. We recommend guiding standards for data-pushed diagnostic guidelines based on felony frameworks, medical ethics, and professional reasoning. Through this research, we intention at scientific AI structures that now not only provide accurate predictions, but also allow customers to understand and consider the underlying choice-making strategies.

8. K.Venkatesh et al.2023-These robots use artificial intelligence to understand human enter and reply correctly. Three vital areas to recognition on are medication, health, agriculture and education. Today, chatbots may be used everywhere wherein everybody can speak to a pc at any time. The fastest developing mercenary areas are customer service, sales, advertising and vending, and human assets. These predictive offerings are actually being made viable by different chatbots (specially inside the medical area) via advances in AI and facts mining technology. Due to the changing lifestyle in contemporary global, the number of patients is growing hastily each day. As a result, local sanatorium and sanatorium systems are developing unexpectedly. Doctors have to wait longer for patients with busy schedules. Other illnesses take longer to heal. Worldly, coronary heart sickness and lung sickness are common problems. Heart assaults kill four, 444 old and young each day.

9. T.Poongodi et al.2022-He approached who used to treat human beings like that. The review presents an original PC application designed as a non-public virtual expert, well-programmed and geared up to collaborate in my opinion with patients. The utility is based on unserviceable gadgets and presents complete control of preventive measures, home remedies, herbal schooling sessions, hospital therapy recommendations and expert coverage of diseases well-known in India. Artificial intelligence is gradually being used in scientific offerings. Here, AI-primarily based frameworks for chatbots include robotic verbal exchange, enhancing properly-being, managing college attendance and inducing behavioral adjustments. Investigating the incentive for the use of fitness chatbots can expect adoption. This conversational utility lowers the barriers to entry in scientific workplaces and shrewd places of work, to put in force precise care and exceptional remedy remotely, simply assisting the public.

10.P.Gopinath et al.2022-Although India is a developing country with a population of more than 1.3 billion, drug shortages are a vital problem here. Not only the authoritative health facility but also the government sanatorium become visited and it changed into observed that there are not enough doctors to cope with the increase in populace and shortage of docs is one of the reasons of demise of patients. To conquer those troubles, we decided to increase a clinical chatbot the use of artificial intelligence that would provide instantaneous access to any questions from clinical facts. These chatbots assist the patient to find the closest specialist and time table appointments. If the user is affected by a fever by asking a series of questions, the chatbot can provide preventive measures based at the person's responses or recommend a agenda based at the user's and professional's nearest professionals. If the person is seeking out a diagnostic middle, for example, in the event that they need an MRI, the chatbot will offer them with data approximately the nearest labs and their starting and ultimate times. Software design the usage of NLP and gadget gaining knowledge of.

IV. EXISTING SYSTEM

A conversational performer that talks with clients in local language is implied as a chatbot. Many Chatbot's have been created using textual content conversation, from ELIZA, which imitates a psychiatrist, to Perry, which imitates a schizophrenic patient. Eliza is a famous synthetic therapist. Bot's attempts to condense questions and answers into some key phrases. If the key-word isn't always observed, Eliza will respond with general speaking

V. Disadvantages of Existing System

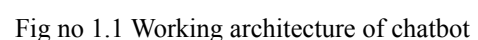
- Many AI-powered chatbots offer fashionable statistics, however may have problem presenting personalized recommendation or guidelines tailored to every individual's particular health scenario and history.

- ## VI. PROPOSED SYSTEM

diagram is a usage case that is used in the system evaluation to explain, select, as wonderfully as plan machine the set aside and later the looking at information of the clients' moves confined and set aside and relatedly facilitated. It makes sense of the business parts of the proposed device. The client's organized essential food things can be followed this essential mark of transport way. The ever-evolving process for passing the things from the stores to the clients is the focal compute each machine. As such systems are taken on this chatbot and responses are kept as records

- 24 hours of carrier. Because AI-powered clinical chatbots offer services via computer systems in preference to people, they could provide offerings 24 hours a day, even if humans are usually at paintings. This manner that patients can get remedy or recommendation at any time of the day or night via chatbots.

- ## SYSTEM ARCHITECTURE



Hardware Requirements

- System : Pentium Dual Core.
- Hard Drive : a hundred and twenty GB.
- Monitor : 15-inch LED
- Input gadgets : keyboard, mouse.
- RAM : 4 GB

Software Requirements

- Operating system : Windows 7/10.
- Programming Language : Python.

MODULES

1. User Verification and Trait Extraction
2. Features are extracted with a skilled dataset
3. Explanation and commands of illnesses by a health practitioner

1. User Verification and Trait Extraction

This is in which the person's login information is proven. The signs are then extracted the use of a string seek algorithm, wherein the substring representing the signs is identified by the herbal textual content enter. When users at once provide the code call, the system acknowledges the command. However, the laptop also has enter to the system, for example: "When I study, it's exceptional at first, however my eyes get heavy through the years and I begin to see double." In this situation, the computer have to spit out words like "worn-out eyes" and "double up" (no longer options like "study" or "well").

2. Features Are Extracted From a Skilled Dataset

Some information captures person enter, generating a list of recommended associated features. We ask the user to verify whether or not humans have any prescribed standards or not. Specific diseases are indexed from the response. Symptoms and recommended signs and symptoms are in addition clarified by asking users a chain of questions and signs and symptoms adapted to the best sickness.

3.Explanation of Diseases and Commands from the Medical Doctor

The process includes listing diseases in a database, comparing every symptom to common sickness characteristics. Next, the characteristic is checked until a suit is observed. They are listed in line with the contribution of the give up customers to the

question rank. The chatbot identifies the precise sickness and communicates it to the stop person. The chatbot checks whether the perceived sickness is a chief or minor trouble based totally at the ideas integrated into the chatbot. If the issue is fundamental, the chatbot sends the health practitioner's info and directs the end person to an expert. And if the problem is minor, the chatbot identifies the disease, directs the end consumer approximately first aid or answers and shows seeing a physician as quickly as feasible.

RESULTS AND DISCUSSION

The use of synthetic intelligence remedy chatbots, the consumer can be able to do voice communication and get particular desired outcomes within the shape of voice. The person can solution special and widespread questions saved within the database. Chatbot overall performance relies upon at the Raspberry Pi and database. The foremost reason of the fitness care chatbot machine is to offer offerings to humans in rural and authorities hospitals who're unable to e-book an appointment with a doctor or acquire medical facts. They can solve their problem the use of chatbot. The synthetic intelligence based chatbot gadget gives clinical tips on drugs or sicknesses and is to be had 24*7 hours. With the speech signal input thru the microphone, it's miles compared to the database saved at the Raspberry Pi and remarks is obtained from the database. If the description of the query or the facts associated with the disorder and remedy is not available in the database, the answer will be dispatched from the Google servers. The input speech sign is first transformed from voice to textual content, then from text to speech, and the output signal is taken from the speaker. A person gives Personal information which includes name, age, date of beginning; Assortment of contacts, and so on. Chatbot Solicitation Elements Using the client and normal treatment, the etymological way answers like an infection. They prescribe drugs for a certain disease. Afterwards Requests an appointment on the health center.

SCREENSHOTS

Home Page

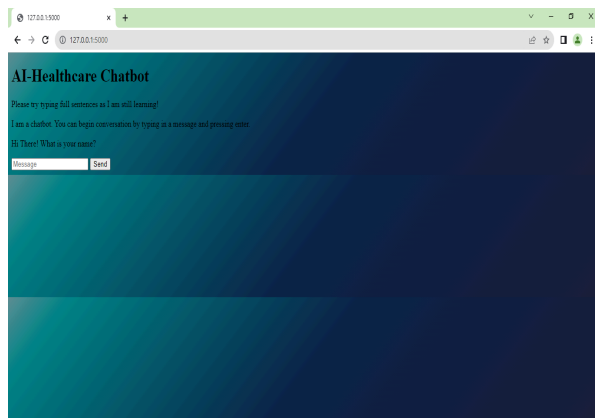


Fig no 2.1 chatbot homepage

The first page of the chatbot which we also called the homepage, will ask the user details like name and also it will tell about itself. Enter message and then send it off correctly.

Basic Information Detail Page

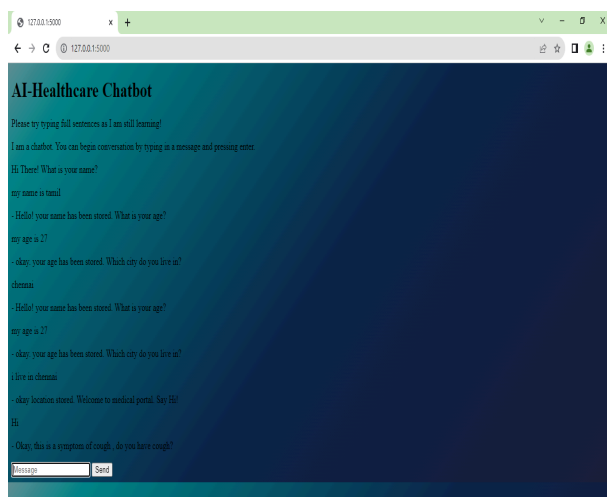


Fig no 2.2 Introductory page of chatbot

After homepage a user will have to fill all the basic details about himself / herself like the age and current city of residence.

Medical Chatbot Page

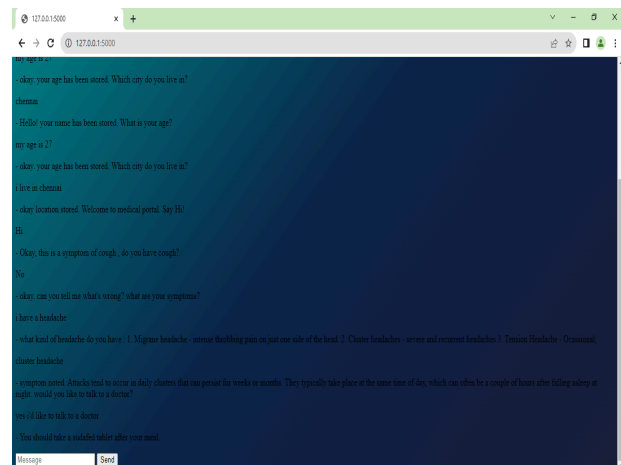


Fig no 2.3 chatbot giving the solution to user

After that, it will keep asking us any questions we have and about the symptoms of the illness. After asking all the relevant question it will automatically give the relevant answers and suggestions to user.

CONCLUSION

The objective of this observe is to discover the definition and architecture of AI chatbots and the important thing technology for implementing AI chatbots. In addition, this study additionally examines the kingdom of AI-based chatbot service improvement. Based on this studies study, AI-primarily based scientific schools have proven to be the only device in supplying healthcare offerings. This is proven by way of many examples of AI-powered healthcare chatbots, whose improvement has been extended through the face-to-face lifestyle that has end up the new norm because of the speedy unfold of Covid-19.

Additionally, effective medical faculty AI has been determined to be exceedingly effective in improving healthcare offerings and enhancing the affected person enjoy. On the alternative hand, those scientific colleges that are made via synthetic intelligence have been discovered to have some obvious boundaries. Efforts must be made to triumph over these limitations and to supply better health services, in a spread of ways including increasing their best of statistics collection, the use of strategies evolved thru synthetic intelligence, growing the quantity of qualified health professionals, cooperating and many others. Implement security features.

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CERTIFICATE

