

MINI PROJECT-II

(2020-2021)

BRAINY CHATBOT

(Machine Learning)

SYNOPSIS



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ABSTRACT

Chatbots, or conversational interfaces as they are also known, present a new way for individuals to interact with computer systems. Traditionally, to get a question answered by a software program involved using a search engine, or filling out a form. A chatbot allows a user to simply ask questions in the same manner that they would address a human. The most well-known chatbots currently are voice chatbots: Alexa and Siri. However, chatbots are currently being adopted at a high rate on computer chat platforms.

It will be very helpful in the field of “Medical”. As, the field of Medical is growing day by day but still there is not sufficient facilities available, it is not possible that we know about each and every doctor and diseases, this model will predict diseases and will also suggest the best doctor related to it. By this it will help to reduce time of visiting each and every doctor to know about a particular disease.

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MOTIVATION

In present time there is very long procedure for treatment of any diseases. First there will be diagnosis of whole body then only we get to know a particular problem. And also, we are not sure about the category of doctor to whom we'll consult. So, our model will help in detecting expected disease and also consult best doctor regarding that. So, this will save our time as well as helps in knowing correct doctor in less time so that treatment will start as early as possible.

As we all know that "Medical Field" is growing day by day but there are insufficient medical facilities and equipment available for everyone and it is not possible that we know about each and every doctor and diseases, that's why to resolve this type of problem we have design a Machine Learning Model that can predict patient diseases on the basis of symptoms and suggest the related doctor. By this project we can reduce the time which is taken when we go to many doctors to check what type of disease we have.

In order to reduce the work of searching for the specialized doctor from the thousands of resources and helps in saving a lot of time and energy It also helps in the time of emergency as this system helps you to search the perfect doctor for you in no time. "Your help is just few questions away".

TECHNOLOGIES AND TOOLS USED

Introduction of Python in Machine Learning

- To reiterate, Machine Learning is simply recognizing patterns in your data
- to be able to make improvements and intelligent decisions on its own.
- Python is the most suitable programming language for this because it is easy to understand and you can read it for yourself.
- Its readability, non-complexity, and ability for fast prototyping make it a popular language among developers and programmers around the world.
- Many of these inbuilt libraries are for Machine Learning and Artificial Intelligence, and can easily be applied out of the box.
- Some of the libraries used:
- **scikit-learn** for data mining, analysis, and Machine Learning;
- **TensorFlow** a high-level neural network library;
- **pylearn2** which is also ideal for data mining and Machine Learning, but more flexible than scikit-learn

Tools Used

Python:

Python is an interpreter, object-oriented programming language that has gained popularity because of its clear syntax and readability. Python can be used on a server to create web applications. First and foremost reason why Python is much popular because it is highly productive as compared to other programming languages like C++ and Java.

Anaconda Navigator:

Anaconda Navigator is a desktop GUI that comes with Anaconda Individual Edition. It makes it easy to launch applications and manage packages and environments without using command-line commands. Anaconda distribution comes with over 250 packages automatically installed, and over 7,500 additional open-source packages can be installed.

Spyder:

Spyder is an open-source cross-platform integrated development environment (IDE) for scientific programming in the Python language. Spyder integrates with a number of prominent packages in the scientific Python. Pythostack, including NumPy, SciPy, Matplotlib, pandas, IPython, SymPy and Cython, as well as other open source software.

Libraries Used

NumPy:

NumPy is a python library used for working with arrays. It also has functions for working in domain of linear algebra, Fourier transform, and matrices. It was created in 2005 by Travis Oliphant. NumPy stands for Numerical Python. NumPy arrays are stored at one continuous place in memory unlike lists, so processes can access and manipulate them very efficiently.

Pandas:

Pandas is an open source library that is used to analyze data in Python. Pandas allows importing data from various file formats such as comma-separated values, JSON, SQL, Microsoft Excel and creates an object with rows and columns called a data frame. Pandas allows various data manipulation operations such as merging, reshaping, selecting, as well as data cleaning, and data wrangling features.

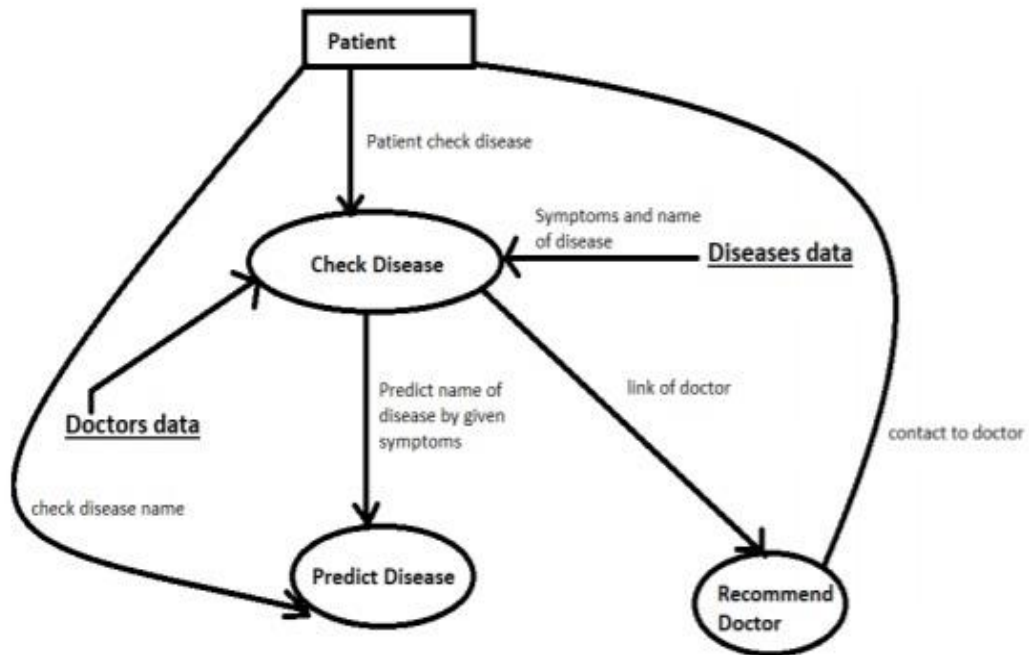
Matplotlib:

Matplotlib is one of the most popular Python packages used for data visualization. It is a cross-platform library for making 2D plots from data in arrays. Matplotlib is written in Python and makes use of NumPy, the numerical mathematics extension of Python.

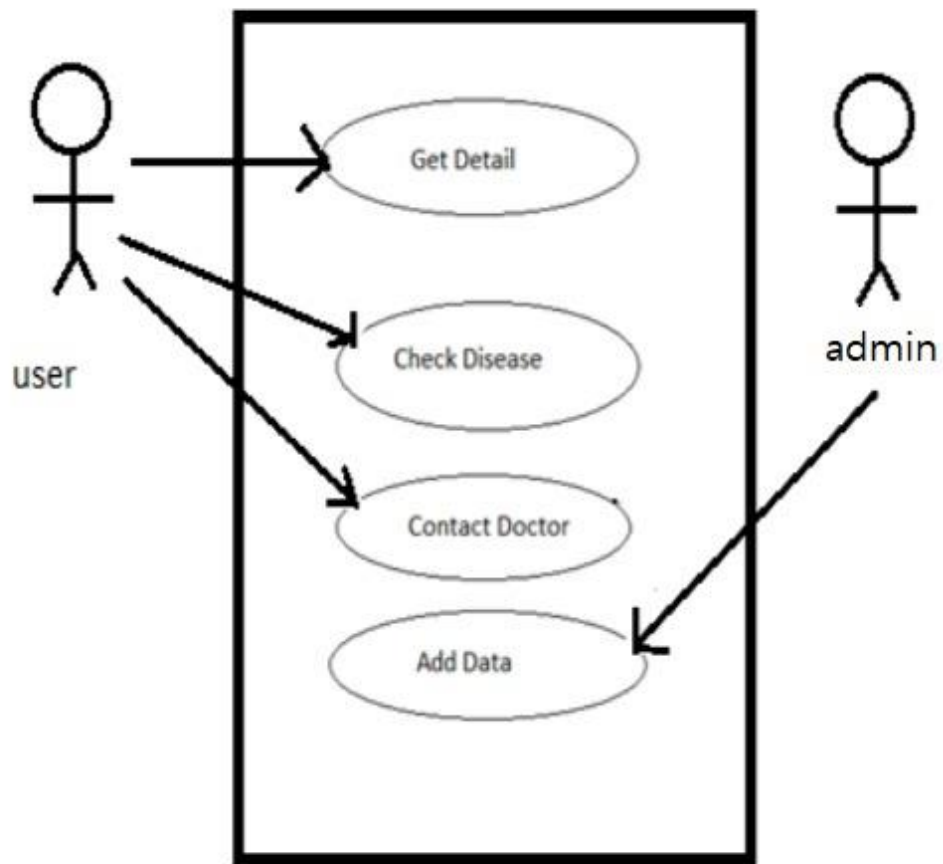
FUTURE SCOPE

With this project we will be aiming to reduce the time required for expected disease detection. It will be more efficient in terms of accuracy and time saving and to make smarter use of technology.

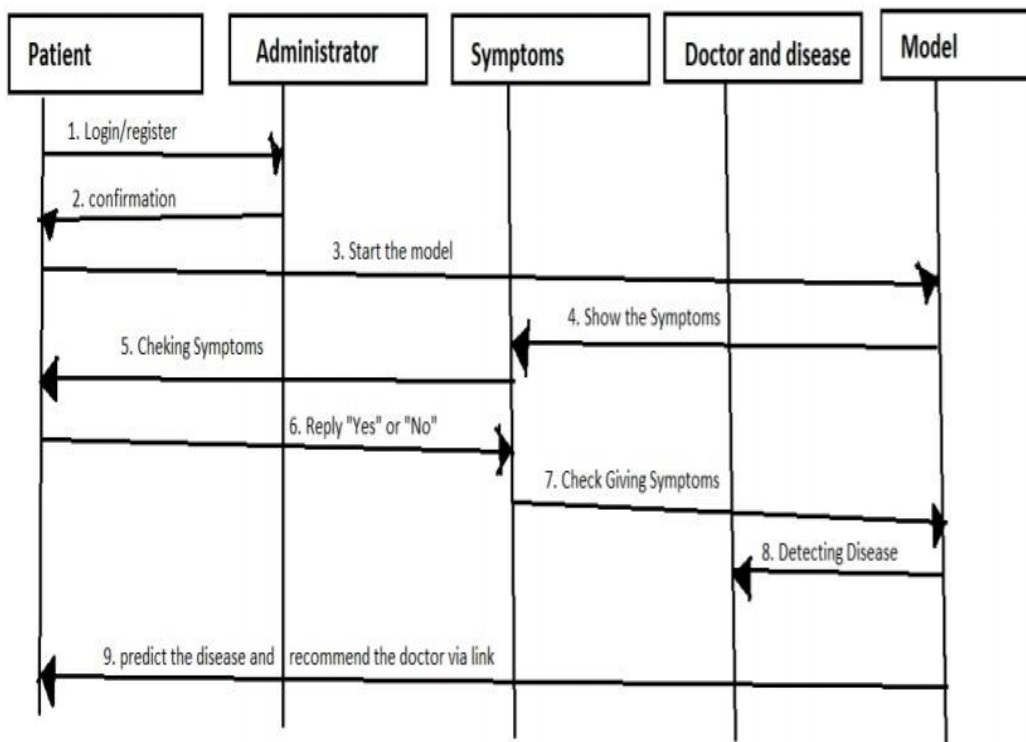
DATA FLOW DIAGRAM



USE CASE DIAGRAM



SEQUENCE DIAGRAM



REQUIREMENTS

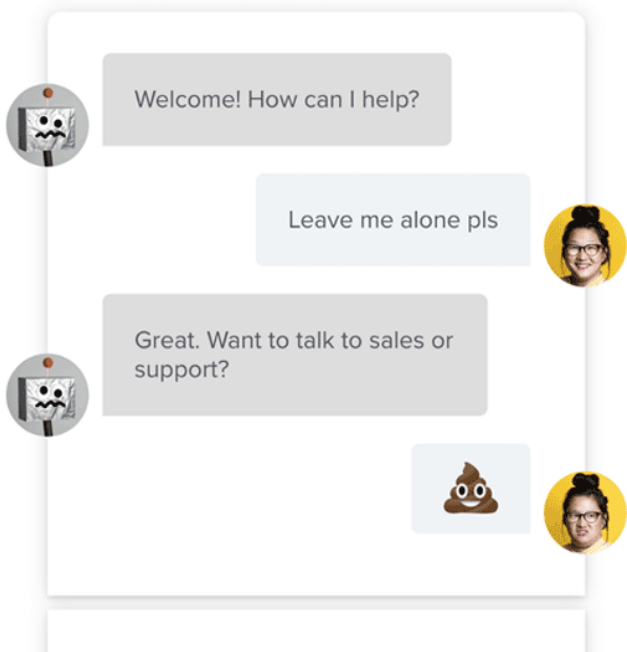
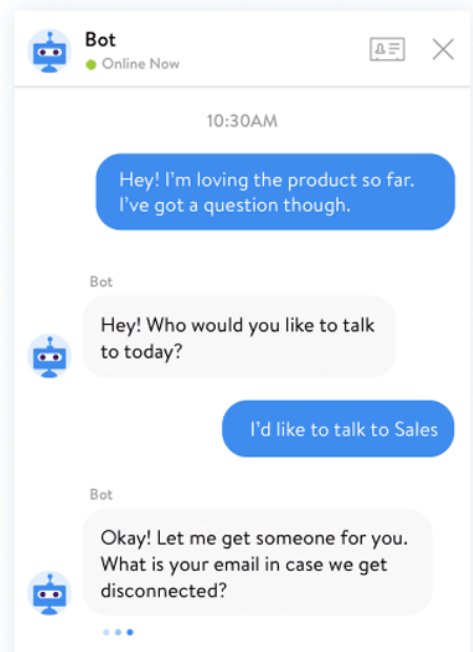
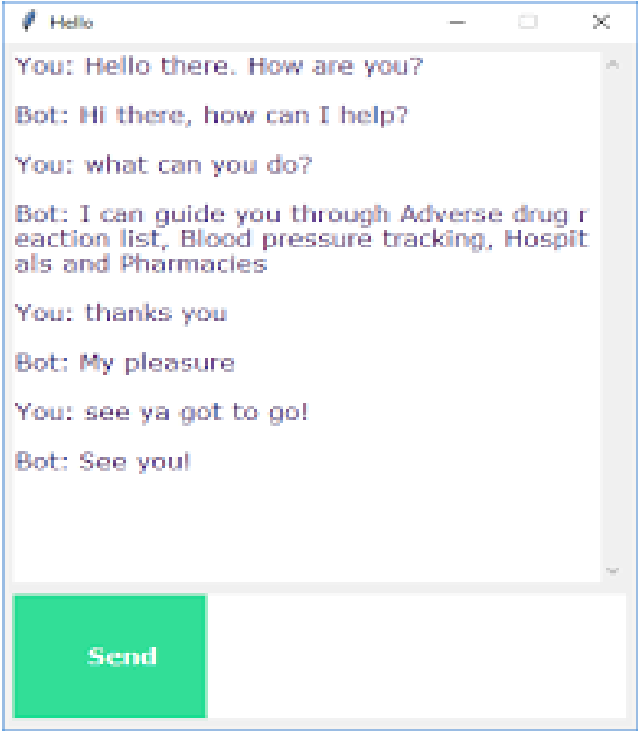
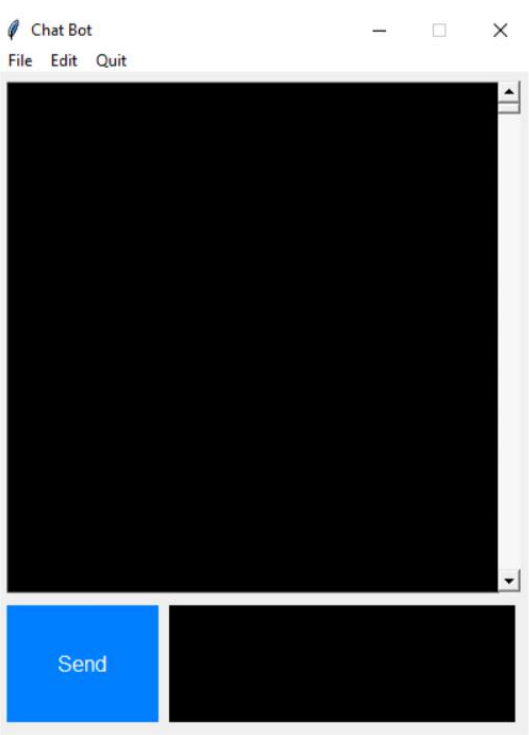
✓ HARDWARE REQUIREMENTS:

- Technology Implemented: Machine Learning
- Language Used: Python3
- Python Development Environment: Anaconda (Spyder/Jupyter Notebook)
- User Interface Designed: Tkinter (Desktop Application)
- Web Browser: Chrome

✓ SOFTWARE REQUIREMENTS:

- Processor: intel i3
- Operating System: Windows/ Linux/ MacOS
- RAM: Minimum 4Gb
- Hard Disk: Minimum 64Gb
- Web Browser: Chrome

SAMPLE SCREENSHOT



REFERENCES

Online References:

- <https://data-flair.training/blogs/>
- <https://pandas.pydata.org/>
- <https://www.anaconda.com/>

Faculty Guidelines:

- Dr. Anand Singh Jalal
(Prof, Department of CEA, GLA University).
- Mr. Neeraj Gupta
(Assistant Professor, Department of CEA, GLA University).

Book References:

- Chatbots: An Introduction and Easy Guide
- Hands-On Machine Learning with Scikit-Learn, Keras, and TensorFlow