**Health chatbot system**

*END TERM PROJECT REPORT*

***by***

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**Student Declaration**

This is to declare that this report has been written by us. No part of the report is copied from other sources. All information included from other sources have been duly acknowledged. We aver that if any part of the report is found to be copied, we are shall take full responsibility for it.

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**Health chat-bot**

Through chatbots one can communicate with text or voice interface and get reply through artificial intelligence. Typically, a chat bot will communicate with a real person.

Chat bots are used in applications such as ecommerce customer service, call centers and Internet gaming. Chatbots are programs built to automatically engage with received messages.

This healthcare chatbot system will help hospitals to provide healthcare support online 24 x 7, it answers deep as well as general questions. It also helps to generate leads and automatically delivers the information of leads to sales.

By asking the questions in series it helps patients by guiding what exactly he/she is looking for.

## **Conversational AI in Healthcare**

#### Discovery & Scheduling

#### Care Management

#### Coverage & Claims

#### Compliance & Connectivity

## **Conversational AI in action**

#### Scheduling Assistant

#### Referral Manager

# **Literature Survey**

The assistant, a human is inefficient and takes a long time to process a single request such as booking tickets, ordering food, getting beauty-services etc. This reduces the throughput and business performance drastically. Obviously, there is an increase in the demand of chat automation because it removes the human factor.

There are so many chatbots that were developed in order to help the people. We can see them in messengers and some chat channels. The need for chatbot is increasing as the queries from people also increasing day by day. The chatbot accepts natural language input from users, navigates through the Information Repository and responds with information in natural language.

If we look at some papers, we can see there are so many chatbot developments, but we rarely see chatbot that are developed for medical use. So, our project aims to develop a chatbot that will be useful for medical purpose.

# **Design**

## **Existing System**

Currently, one can make a chatbot of various types -

* One that follows a basic set of menu-driven tasks, but with user input in the form of text.
* One that attempts to have a natural conversation with the user.
* One that performs tasks based on user input and returns output of query.

The first type does not require any form of NLP as the input can be processed as in a regular C program. There are existing services that allows a way to implement this type of bots in a convenient user interface. The others require some form of NLP, which can be done in-house or outsourced from an existing service.

One of a prominent option for the latter is Dialog Flow (previously known as api.ai), now owned by Google. The SDKs contain voice recognition, natural language understanding, and text-to-speech. It offers a web interface to build and test conversation scenarios. Voice and conversational interfaces created with Dialog flow works with a wide range of devices including phones, wearables, cars, speakers and other smart devices. It supports 14+ languages including Brazilian Portuguese, Chinese, English, Dutch, French, German, Italian, Japanese, Korean, Portuguese, Russian, Spanish and Ukrainian. Dialog flow also includes an analytics tool that can measure the engagement or session metrics like usage patterns, latency issues, etc.

## **Proposed System**

In this project, our aim was to use existing advancements in creating advanced chatbots to help solve tasks in a hospital setting. For this, we made a backend to the chatbot, which is connected with a database similar to one used in a hospital. The backend is responsible to use processed input from the chatbot and convert it into an action to be performed in the database. We will also use a web interface for the user to interact with the chatbot.

The following features are supported by the chatbot:

* Look up branches by location and get its contact details.
* Look up doctors by specialty and hospital location.
* Book an appointment.
* Look up medicines and their availability in the hospital.
* Get basic medical help.

# **Implementation Details**

* HTML + CSS (for frontend)
* Python + libraries such as pandas
* SQLite (for database)
* Sklearn (for chatbot processing)

##### **Advantages**

* Save time and money
* Generate new leads
* Guide users
* It provides support 24 x 7

### **Take Away**

The very purpose of introducing [chatbots](https://getreferralmd.com/2018/09/9-recent-medical-innovations-disrupting-healthcare/) is to make customer interactions easier. In today’s busy life schedule, often visiting the doctor or the hospital may not be feasible. That is when patients look for convenience and what option can be better than using chatbots.