**HEALTHCARE CHAT BOT**

### PROJECT REVIEW REPORT - I

Submitted in partial fulfillment for the award of the degree of

**M.Tech**

***in***

**Software Development & Management**

***by***

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**Under the Guidance of**

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**VIT**

U N I V E R S I T Y

(Estd. u/s 3 of UGC Act 1956)

## School of Information Technology & Engineering [SITE]

September 2017

**DECLARATION BY THE CANDIDATE**

I hereby declare that the project report entitled **“HEALTHCARE CHAT BOT”** submitted by me to Vellore Institute of Technology, Vellore in partial fulfillment of the requirement for the award of the degree of **M.Tech** [**Software Development & Management]** is a record of bonafide project work carried out by me under the guidance of **Srirama Srinivasa Bommireddypally**. I further declare that the work reported in this project has not been submitted and will not be submitted, either in part or in full, for the award of any other degree or diploma in this institute or any other institute or university.

Place: Vellore Signature of the Candidate

Date: Achal Shrivastava

**VIT**

U N I V E R S I T Y

(Estd. u/s 3 of UGC Act 1956)

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###### BONAFIDE CERTIFICATE

This is to certify that the project report entitled **“HEALTHCARE CHAT BOT”** submitted by **Achal Shrivastava (15MSD0024)**  to Vellore Institute of Technology, Vellore in partial fulfillment of the requirement for the award of the degree of **M.Tech**[**Software Development & Management]** is a record of bonafide work carried out by him/her under my guidance. The project fulfills the requirements as per the regulations of this Institute and in my opinion meets the necessary standards for submission. The contents of this report have not been submitted and will not be submitted either in part or in full, for the award of any other degree or diploma in this institute or any other institute or university.

**Srirama Srinivasa Bommireddypally**

**Sr. Manager - Projects, BFSI**

**Cognizant Technology Solutions**

**Internal Examiner (s)**

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Project Review Evaluation Sheet

|  |  |
| --- | --- |
| **Components Distribution** | **Marks Awarded** |
| Problem definition, motivation and objective (3) |  |
| Literature Survey or related work (3) |  |
| Preliminary design and module description (3) |  |
| References (1) |  |
| **Total (Out of 10)** |  |

Signature of Internal Guide with Name

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### ABSTRACT

ChatBot, which is also known as conversational agents or dialog systems, are computer programs that mimic conversation with people using artificial intelligence (AI). ChatBot typically provide a text-based user interface, allowing the user to type commands and receive text as well as text to speech response.

Chatbots are intelligent systems that understand user’s natural language queries and respond accordingly in a conversation, which is the focus of this project. This could be a text based (typed) conversation, a spoken conversation or even a non-verbal conversation. ChatBot can run on local computers and phones, though most of the time it is accessed through the internet. It is more like a virtual assistant; people feel like they are talking with real person.

With rising costs of health consultation, going to see a doctor for every little health concern can be problematic. But healthcare is important, and AI ChatBot application can provide real answers to your health questions and concerns so you can get the help you need when you need it, and can hopefully cut back on some of the cost.

Health care play an important role in every individual life. Today, when technology is evolving very rapidly, it is very necessary to have proper health care system which should be portable and ready for availability. Most of people neglect common health issue due to unavailability of nearby medical consultant, lack of timing, affordability.

Our proposed system is virtual personal health care assistant which will be to bridge the vocabulary gap between the health providers by proving instant replies to the questions posted by patients. If you have a health issue, let the ChatBot know, and it will walk you through a series of questions/answers to figure out what might be best for you to do. If you still have questions or concerns, you can connect with medical professionals.

### LIST OF FIGURES

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### INTRODUCTION

## Overview

Healthcare is essential for a good life. Unfortunately, consultation with a doctor can be difficult to obtain, especially if we need advice on non-life threatening problems. The healthcare system is congested and inefficient, and sick people may wait weeks or months for a visit.

In some areas of the world, the basic rules for a healthy life are unknown because of the poor medical information, taboos, or lack of interest from people. It’s impossible to fix these problems with a bot, but a bot can certainly help to make the situation better.

Delivering healthcare services via bots can reduce the increasing healthcare costs and improve the quality and effectiveness of healthcare and last but not least we can make healthcare knowledge completely free accessible to everyone globally. A bot, for example, can start a chatting session with patients in an interactive way. A bot can be created to help patients to articulate their symptoms without a human interaction or can be used to suggests a possible diagnosis to a doctor who can then recommend the next suitable medical steps for the patient

ChatBot offer a great user experience. Think about it, you not need so many hoops to jump through the information. The user does not have to download and install an app, he needs only to type some text to get answers. A bot has always an open channel of communication with the user and can take care of routine activities or provide important information. We are at the dawn of a road already marked, all this will lead to personal assistants who will have the task of guarding our health all the day every day.

The first “operative” bot in the healthcare sphere dates back to 50 years ago. ELIZA was created to mimic a Rogerian psychologist, that is a therapist who asks questions to the patient simply by rearranging what the patient himself said.

The software wasn’t nearly as sophisticated as current ChatBot, but the 200 lines of code were enough to create the illusion of talking to a psychotherapist.

This program was proof that it's possible to simulate human conversation using software. Intelligent conversation is only emulated, allowing the ChatBot to have some success in those days, when AI was just something seen in the sci-fi novels.

Currently artificial intelligence has developed to a point where programs can learn and effectively mimic human conversations. Accelerating technological progress has placed internet-enabled machines in every institution, company, home, and eventually pocket (who doesn’t have a smartphone nowadays?).

## Objective

* To help patients find a solution to the most common symptoms through AI.
* To provide advice and information for a healthy life because some groups of people don’t have a good basic knowledge of health.
* To help those who lives in remote areas & not able to visit hospitals/clinics immediately.
* To miniature doctors who help people find a solution to the most common symptoms through AI.

### PROBLEM ANALYSES

## Existing System

There are many factors that drive poor drug adherence from patient forgetfulness to confusion over managing multiple medications at once. Regardless of the reason, poor drug adherence leads to more acute care visits, more work for doctors and increased health risks for the patient. While improving communication between patient and care provider can help, traditional channels such as phone calls are time consuming and expensive to support. Nowadays the major problem in any developing country is health of the people because there is mainly working class crowd in the cities who are so busy with their work that they avoid going to Doctor even if their health condition is not good, if even lead to another problem, so in order to provide proper information about their health at any point of time and at any place a complete independent health care system needs to be developed.

## Proposed System

Our proposed solution is computer program which conducts a conversation via textual methods. It interacts with human users. Automatic content generation systems are expected to be more reliable and compatible due to the presence of local medical coding and global learning approach.

The real benefit of these ChatBot is the ability to provide advice and information for a healthy life because some groups of people don’t have a good basic knowledge of health

## Approach

In the proposed system we are concentrating the problems whatever a patient faced with existing system.

The proposed system consists of:

1. Input gathering and data processing
2. Medical terminology detection
3. Mapping/storing relevant document
4. Generating answers and solutions

## Future scope of project

This project was developed with few set of medical data and has limitation to respond for certain questions which are not present with the key words associated in the data file. This application is built on Java Swing framework to utilize as standalone application running on computer system, it can be enhanced to deploy on remote server to be utilize from different user.

### ARCHITECTURE

## System Architecture

User will interact with the system using web application. He will enter his query in text box provided on GUI of application. Once he presses Enter button or submit the query, this request will be handled by bot controller logic. The bot controller logic contains implementation for handling user requests and sending answer to those queries as response. Then, the query will be sent to Business logic. Business logic contains pre-processing of user input query by tokenizing the query, remove unnecessary spaces, stop-words. Then all keyword from the input string is compared with stored keyword in data file and matching result will be provided to user as output.

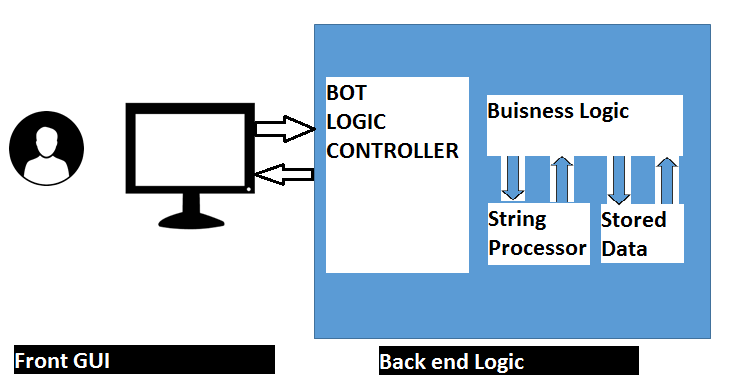


Fig:3.1

## Module Description

* Front GUI: Built on Java Swing Framework to provide rich experience to user.
* Bot Logic Controller: Controller to for handling user requests and sending answer to those queries as response.
* Business Logic: Responsible for pre-processing of user input query.
* String Processor: Tokenize the query, remove unnecessary spaces, stop-words.
* Store data: Text file with stored response from various health care forums.

## 

### FUTURE ENHANCEMENT

In the proposed system, we focus on giving appropriate answer for the health seekers if the user question contains medical terms which match our database. Else doctor’s contact will be provided in case if none of the keywords match with our database. In the future, we will investigate how to flexibly organize the unstructured medical content into user needsaware ontology by leveraging the recommended medical

terminologies. Since many solutions are resulted in our system, we will enhance by asking the user to rate the solution and based on this we will do QA pairing. We can also incorporate the spell check of medical words and also try to improve the accuracy, speed receiving of answers.

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