PROJECT REPORT

On

HEALTHCARE MANAGEMENT

Submitted by:

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2019

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Declaration

I hereby declare that the work which is being presented in the PROJECT **"**HealthCare Management**",** in partial fulfillment of the requirements for project viva voce, is an authentic record of our work carried under the supervision of " Mr. **Vinay Agrawal**".

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ACKNOWLEDGEMENT

It is my pleasure to acknowledge the assistance of a number of people without whose help this project would not have been possible.

First and foremost, I would like to express our gratitude to **Mr. Vinay Agrawal** my project guides, for providing invaluable Encouragement, guidance and assistance.I would like to thank the lab staff for the operation extended to us throughout the project. After doing this project I can confidently say that this experience has not only enriched me with technical knowledge but also has unparsed the maturity of thought and vision. The attributes required being a successful professional.

ABSTRACT

Health improvement can be done by preventing, proper diagnosis and treatment of diseases, illness, injury and other physical and mental impairments in human beings. Health care is taken by health professionals in associated health fields. Healthcare system delivers health care services to meet the health of target populations. There is a rise in infectious diseases as well as in non-communicable diseases, giving healthcare a double burden to combat. If anybody is ill and wants to visit a doctor for checkup, he or she needs to search the best doctor for a particular disease. Finding the best respective doctor for a particular disease manually is a tough task. This health information system helps to find respective specialist doctors for a particular disease in the nearby location and also provides information and tips on how the disease can be cured. This healthcare management system makes it easy to find the doctors, which helps the patients to recover faster from the disease. This health information system has two modules namely, Admin and Users. Admin can view the main keyword from the question asked by users, can manage doctor by adding new doctor, updating doctors live information and deleting non-existing doctors. Admin can also delete, update and add new diseases information and cure remedies. Users can ask question regarding a particular disease and get the proper information related to the disease, cure remedies and specialist doctors list from desired or nearby location.

Contents

CHAPTER 1

Introduction

Motivation and Overview

The purpose of this project to provide admin has to collect the patients medical history of records and filter it appropriately by applying data preprocessing techniques. Admin's functionalities are to Collecting the appropriate medical records of the patients, handle missing values, handling categorical values, Creating sparse matrix representation, Feeding data to the autonomous pipeline for predictions, selecting and training an appropriate machine learning algorithm.

Visitor can perform the basic task of visitor is to access the chat bot from the front end and reply to its queries with a binary response (Yes/No). The visitor will be shown a confidence interval related to a certain prognosis which needs to be further investigated and experimented with for better results.

The first step is to start their procedure, then one by one all the symptoms come in clients screen. They will have to reply with yes or no answer.

Once a problem will found then they will have to click yes, then patient can see their problem in screen.

The Best Part is that it will provide doctor's information like Doctor name and his/her website link. So that one can easily find their doctor with don't face any type of problem, and start their treatment.

This will prepare with the help of chatbot so that one can even check their problem at any time . You have to just reply with clicking of button Yes or No.

Features

Firstly login your account with your name and password. Visitor can perform the basic task .

The first step is to start their procedure, then one by one all the symptoms come in clients screen. They will have to reply with yes or no answer.

Once a problem will found then they will have to click yes, then patient can see their problem in screen.

The Best Part is that it will provide doctor's information like Doctor name and his/her website link. So that one can easily find their doctor with don't face any type of problem, and start their treatment.

Objective

The main aim of designing and developing this Internet healthcare System primarily based Engineering project is to provide secure and efficient health care facilities to the Visitor over the internet. Apache Server Pages, MYSQL database used to develop this healthcare application where all Visitor can login through the secured web page by their name and password. Users will have all options and features in that application like one by one all the symptoms come in clients screen. They will have to reply with yes or no answer . Once a problem will found then they will have to click yes, then patient can see their problem in screen.

The project gives real life understanding of Online Healthcare and activities performed by various roles in the supply chain. Here, we provide automation for Healthcare system through Internet. Online Health System project captures activities performed by different roles in real life, which provides enhanced techniques for maintaining the required information up-to-date, which results in efficiency.

i Main Goals: Our motto is to develop a software program for managing the entire Healthcare process related to healthcare problem and to keep each every track about visitor efficiently. Hereby, our main objective is the customer's satisfaction considering today's faster in the world

ii Customer Satisfaction: Client can do his operations comfortably without any risk or losing of his privacy. Our software will perform and fulfill all the tasks that any customer would desire.

iii Saving Customer Time: Client doesn't need to go to the doctor to do small operation.

iv Protecting The Customer: It helps the customer to be satisfied and comfortable in his choices, this protection contains customer's personal details and their privacy.

CHAPTER 2

SOFTWARE

2.1 Modules Description

The Modules description of HealthCare Management System project. These modules will be developed in MYSQL database.

1. **Admin:**

    - **Login:** Admin can login in his personal account using id and password.
    - **View main keyword:** Admin can view main keywords.
    - **Manage doctor:** Admin can add, update and delete doctors.
    - **Manage disease:** Admin can add, update and delete diseases.

2. **User:**
    - **Login:** User can login his account using id and password.
    - **Ask question:** User can ask question related to their diseases and doctors for cure.

There are other features and actions that can be performed on a Heathcare but we are not going to look at HealthCare in their entirety only the basics, this way we avoid over complicating the exercise. The purpose of this whole exercise is to show the usefulness of object oriented programming .

Translating the above points into software is easy when you think of a healthcare box as an object:

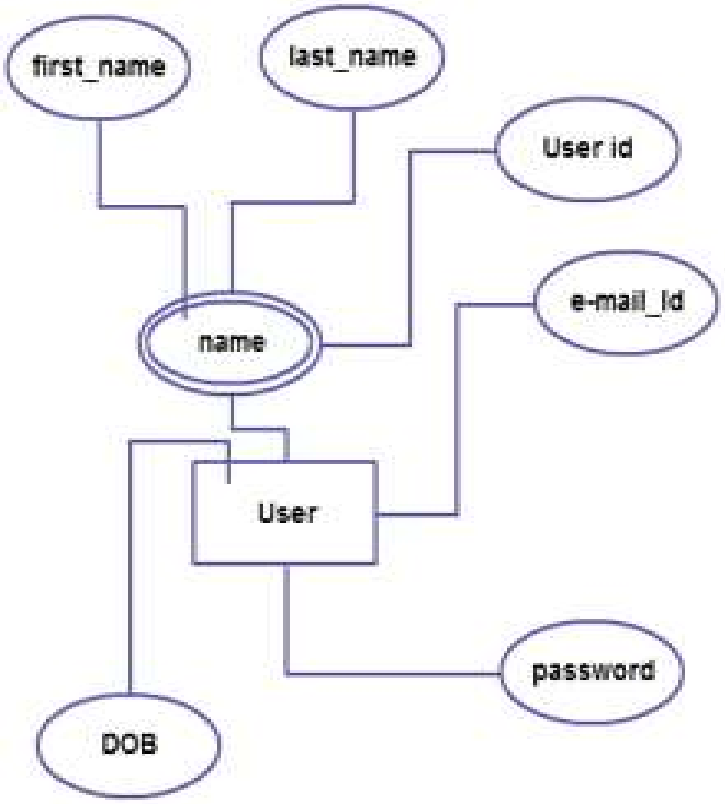


Fig 2.1: Flow Chart Of HealthCare Management System

2.2 Methods

- We need to be able to generate an account
- Account types: Current Account
- Maintain/update Table

The next thing we need to look at is where to store the information about the visitor. Obviously, the best place to store information relating to visitor is in a database. To work with a database will require the following methods:

- Connecting to the database
- Inserting details
- Updating the details

2.3 Administrative Modules

Here in my project there are two types of modules. This module is the main module which performs all the main operations in the system.

2.4 Admin Module

Admin can access this project there is an authorization process. If you login as an Admin can login in his personal account using id and password . Admin can view main keywords .Admin can add, update and delete doctors. Admin can add, update and delete diseases

■ Admin login

■ Add/delete/update detail

■ User details list

■ View histories

2.5 User Module

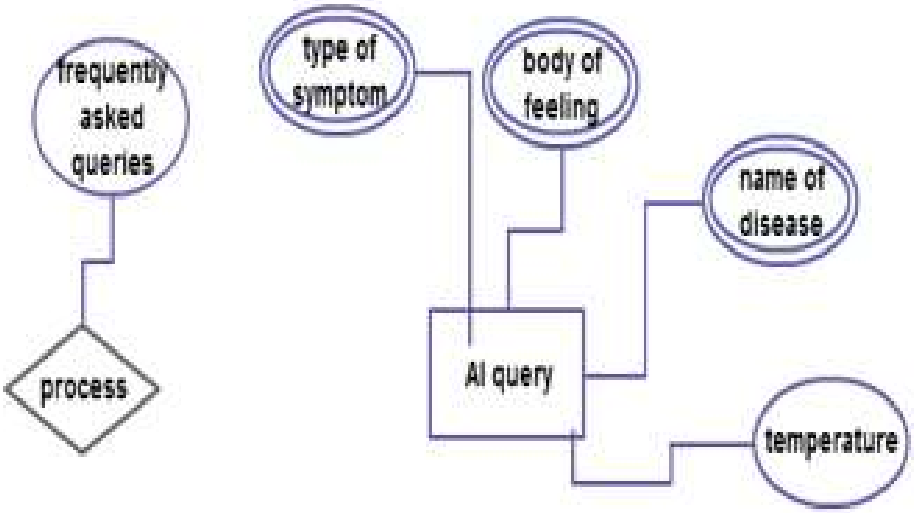
A simple user can access their account **.** User can login his account using id and password. User can ask question related to their diseases and doctors for cure.

■ User login, use PIN system

■ Creating/open new account registration

■ User account details

■ View about diseases details


frequently asked queries
process
type of symptom
body of feeling
name of disease
AI query
temperature


medicines
Dynamic Analyser
symptoms
collection of symptoms
Diagonising system controller

2.6.Hardware Requirements Specification

Processor : i3 Processor Based Computer or higher

Main Memory(RAM) : 4 GB RAM

Monitor : 14 inch Color Monitor

Keyboard : 108 Keys

Mouse : Optical Mouse

Hard Disk : 160 GB

Active Internet

2.7.Software Requirements Specification

Front End/Language : PYTHON

Back End/Database : MYSQL

Operating System : Windows 7, 8, 9, 10, XP

2.8 Technology Used

Python offers multiple options for developing GUI (Graphical User Interface). Out of all the GUI methods, tkinter is the most commonly used method. It is a standard Python interface to the Tk GUI toolkit shipped with Python. Python with tkinter outputs the fastest and easiest way to create the GUI applications.

Now, it's upto the imagination or necessity of developer, what he/she want to develop using this toolkit.

To create a tkinter :

i Importing the module – tkinter
ii Create the main window (container)
iii Add any number of widgets to the main window.
iv Apply the event Trigger on the widgets.

There are two main methods used you the user need to remember while creating the Python application with GUI.

1. **Tk(screenName=None, baseName=None, className='Tk', useTk=1):**
   To create a main window, tkinter offers a method 'Tk(screenName=None, baseName=None, className='Tk', useTk=1)'. To change the name of the window, you can change the className to the desired one. The basic code used to create the main window of the application is:

   ```
   m=tkinter.Tk() where m is the name of the main window object
   ```

2. **mainloop():**
   There is a method known by the name mainloop() is used when you are ready for the application to run. mainloop() is an infinite loop used to run the application, wait for an event to occur and process the event till the window is not closed.

   ```
   m.mainloop()
   ```

CHAPTER 3

SOFTWARE DESIGN

3.1.System Design

Design is the first step into the development phase for any engineered product or system. Design is a creative process. A good design is the key to effective system. The term “design” is defined as “the process of applying various techniques and principles for the purpose of defining a process or a system in sufficient detail to permit its physical realization”. It may be defined as a process of applying various techniques and principles for the purpose of defining a device, a process or a system in sufficient detail to permit its physical realization. Software design sits at the technical kernel of the software engineering process and is applied regardless of the development paradigm that is used. The system design develops the architectural detail required to build a system or product. As in the case of any systematic approach, this software too has undergone the best possible design phase fine tuning all efficiency, performance and accuracy levels. The design phase is a transition from a user oriented document to a document to the programmers or database personnel.

System design goes through two phases of development:

- Logical Design and
- Physical Design

3.2.Logical Design

The logical flow of a system and define the boundaries of a system. It includes the following steps:

- Reviews the current physical system – its data flows, file content, volumes,frequencies etc.

■ Prepares output specifications – that is, determines the format, content and frequency of reports.

■ Prepares input specifications – format, content and most of the input functions.

■ Prepares edit, security and control specifications.

■ Specifies the implementation plan.

■ Prepares a logical design walk through of the information flow, output, input, controls and implementation plan.

■ Reviews benefits, costs, target dates and system constraints.

3.3.Physical Design

Physical system produces the working systems by define the design specifications that tell the programmers exactly what the candidate system must do. It includes the following steps.

■ Design the physical system.

■Specify input and output media.

■ Design the database and specify backup procedures.

■ Design physical information flow through the system and a physical design .

■ Plan system implementation.

■ Prepare a conversion schedule and target date.

■ Determine training procedures, courses and timetable.

■ Devise a test and implementation plan and specify any new hardware/software.

3.4.Database design

The database, called a bank, will have two tables, one called doctor's dataset and the other called testing. Each will hold information about either the doctor's details or the visitor problem. The two tables will be linked through a foreign key.

Table No.-1

itching	skin_rash	nodal_ski	continuou	shivering	chills	joint_pain	stomach_	acidity
1	1	1	0	0	0	0	0	0
0	0	0	1	1	1	0	0	0
0	0	0	0	0	0	0	1	1
1	0	0	0	0	0	0	0	0
1	1	0	0	0	0	0	1	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0

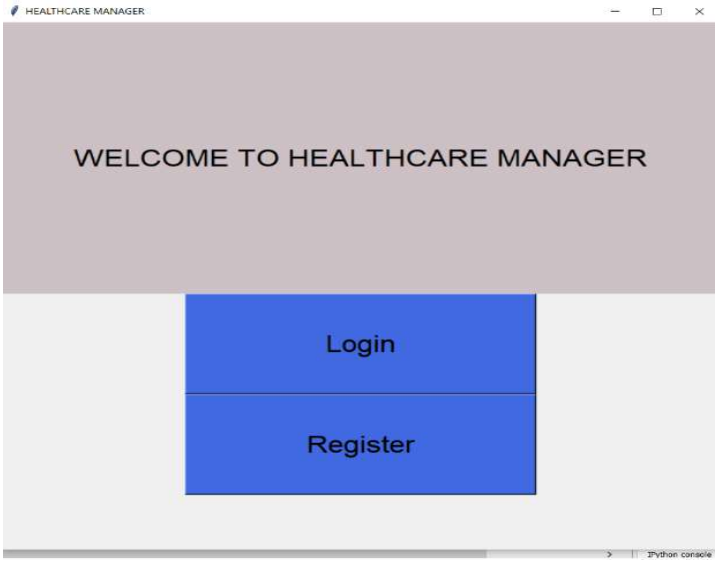
Table No.-2

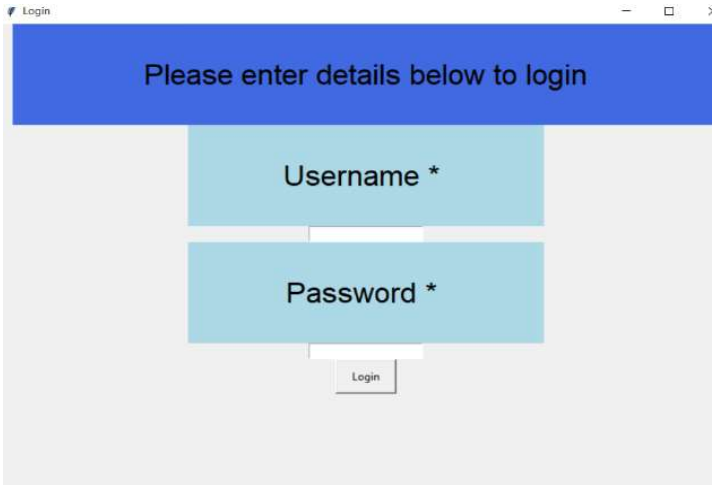
Dr. Amarp	https://www.practo.com/delhi/doctor/amarpreet-singh-riar-general-physician?specialization=General%20Physician&practice_id=1026302
Dr. (Maj.)S	https://www.practo.com/delhi/doctor/dr-54-general-physician-1?specialization=General%20Physician&practice_id=1071396
Dr. Anirba	https://www.practo.com/delhi/doctor/anirban-biswas-diabetologist?specialization=General%20Physician&practice_id=789800
Dr. Aman	https://www.practo.com/delhi/doctor/dr-aman-vij-general-physician?specialization=General%20Physician&practice_id=704972
Dr. Mansi	https://www.practo.com/delhi/doctor/dr-mansi-arya-bhardwaj-homeopath?specialization=Homoeopath&practice_id=786334
Dr. Sunil K	https://www.practo.com/delhi/doctor/dr-sunil-kumar-dwivedi-homeopath?specialization=Homoeopath&practice_id=654411
Dr. Chhavi	https://www.practo.com/delhi/doctor/dr-chhavi-bansal-homeopath-1?specialization=Homoeopath&practice_id=1124019
Dr. Sneh K	https://www.practo.com/delhi/doctor/dr-sneh-khera-homeopath?specialization=Homoeopath&practice_id=709153
Dr. Inderje	https://www.practo.com/delhi/doctor/inderjeet-singh-ayurveda-sexologist?specialization=Homoeopath&practice_id=1219975
Dr. Suman	https://www.practo.com/delhi/doctor/dr-suman-mohan-homoeopath?specialization=Homoeopath&practice_id=1173704

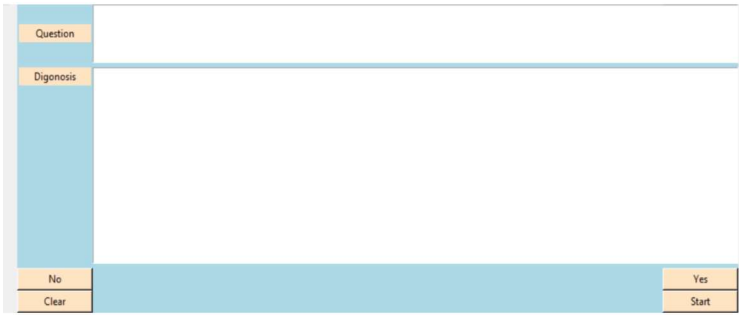
3.5.Implementation

Implementation is the stage in the project where the theoretical design is turned into the working system and is giving confidence to the new system for the users i.e. will work efficiently and effectively. It involves careful planning, investigation of the current system and its constraints on implementation, design of method to achieve the change over, an evaluation, of change over methods. A part from planning major task of preparing the implementation is education of users. The more complex system is implemented, the more involved will be the system analysis and design effort required just for implementation. An implementation coordinating committee based on policies of individual organization has been appointed. The implementation process begins with preparing a plan for the implementation for the system. According to this plan, the activities are to be carried out, discussions may regarding the equipment has to be acquired to implement the new system.

Implementation is the final and important phase. The most critical stage is in achieving a successful new system and in giving the users confidence that the new system will work and be effective. The system can be implemented only after thorough testing is done and if it found to working according to the specification. This method also offers the greatest security since the old system can take over if the errors are found or inability to handle certain types of transaction while using the new system.


HEALTHCARE MANAGER
WELCOME TO HEALTHCARE MANAGER
Login
Register
IPython console


Login
Please enter details below to login
Username *
Password *
Login


Question
Digonosis
No
Clear
Yes
Start

CHAPTER 4

TESTING

Introduction:

The implementation phase of software development is concerned with translating design specification into source code. The preliminary goal of implementation is to write source code and internal documentation so that conformance of the code to its specifications can be easily verified, and so that debugging, testing and modifications are eased. This goal can be achieved by making the source code as clear and straightforward as possible. Simplicity, clarity and elegance are the hallmark of good programs, obscurity, cleverness, and complexity are indications of inadequate design and misdirected thinking.

Source code clarity is enhanced by structured coding techniques, by good coding style, by, appropriate supporting documents, by good internal comments, and by feature provided in modern programming languages.

The implementation team should be provided with a well-defined set of software requirement, an architectural design specification, and a detailed design description. Each team member must understand the objectives of implementation.

Terms in Testing Fundamental

4.1. Error

The term error is used in two ways. It refers to the difference between the actual output of software and the correct output, in this interpretation, error is essential a measure of the difference between actual and ideal. Error is also to used to refer to human action that result in software containing a defect or fault.

4.2. Fault

Fault is a condition that causes to fail in performing its required function. A fault is a basic reason for software malfunction and is synonymous with the commonly used term Bug.

4.3. Failure

Failure is the inability of a system or component to perform a required function according to its specifications. A software failure occurs if the behavior of the software is the different from the specified behavior. Failure may be caused due to functional or performance reasons.

a. Unit Testing

The term unit testing comprises the sets of tests performed by an individual programmer prior to integration of the unit into a larger system.

A program unit is usually small enough that the programmer who developed it can test it in great detail, and certainly in greater detail than will be possible when the unit is integrated into an evolving software product. In the unit testing the programs are tested separately, independent of each other. Since the check is done at the program level, it is also called program teasing.

b. Module Testing

A module and encapsulates related component. So can be tested without other system module.

c. Subsystem Testing

Subsystem testing may be independently design and implemented common problems are sub-system interface mistake in this checking we concenton it.

There are four categories of tests that a programmer will typically perform on a program unit.

i Functional test

ii Performance test

iii Stress test

iv Structure test

4.4 Functional Test

Functional test cases involve exercising the code with Nominal input values for which expected results are known; as well as boundary values (minimum values, maximum values and values on and just outside the functional boundaries) and special values.

4.5 Performance Test

Performance testing determines the amount of execution time spent in various parts of the unit, program throughput, response time, and device utilization by the program unit. A certain amount of avoid expending too much effort on fine-tuning of a program unit that contributes little to the over all performance of the entire system. Performance testing is most productive at the subsystem and system levels.

4.6 Stress Test

Stress test are those designed to intentionally break the unit. A great deal can be learned about the strengths and limitations of a program by examining the manner in which a program unit breaks.

4.7 Structure Test

Structure tests are concerned with exercising the internal logic of a program and traversing particular execution paths. Some authors refer collectively to functional performance and stress testing as “black box” testing. While structure testing is referred to as “white box” or “glass box” testing. The major activities in structural testing are deciding which path to exercise, deriving test date to exercise those paths, determining the test coverage criterion to be used, executing the test, and measuring the test coverage achieved when the test cases are exercised.

FUTURE SCOPE OF THE PROJECT

This project can be handled in future by doing various modifications like: -

- The system can be updated on the model of chatbot.
- Management of Healthcare can also hold the feature of pre appointment for doctor visit.

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- Introduction to Machine Learning
- Machine Learning with Python Cookbook

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