MINI PROJECT REPORT

On

AI Chatbot For HealthCare

Submitted by

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ABSTRACT

Normally Users are not aware of all the treatment or symptoms regarding the particular disease. For small problems, the user has to go personally to the hospital for a check-up which is more time-consuming. Also handling the telephonic calls for the complaints is quite hectic. Such a problem can be solved by using medical ChatBot by giving proper guidance regarding healthy living. Today's people are more likely to be addicted to the internet but they are not concerned about their personal health.big disease can start from small problems such as headaches which feels normal but it may beginning of big diseases such as brain tumor .most of the disease can be identified by common symptoms so the disease can be predicted if the patient's body is analyzed periodically.

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DECLARATION

We hereby declare that the project work entitled "**AI Chatbot For HealthCare ** submitted to the GLA University Mathura**,** is a record of an original work done by our team under the guidance of **Mr.Vivek Kumar, Assistant Professor of GLA University, Mathura**

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CHAPTER 1 Introduction to HealthCare Chatbot

The purpose of this project to provide the admin has to collect the patient's 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.

The visitor can perform the basic task of the visitor is to access the chatbot 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' screens. They will have to reply with yes or no answer.

Once a problem is found then they will have to click yes, then the patient can see their problem on screen. The Best Part is that it will provide the doctor's information like the Doctor's 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 the clicking of button Yes or No.

CHAPTER 2 Software Requirement Analysis

2.1 - Requirement Analysis

Requirement Analysis is a software engineering task that bridges the gap between system-level software allocation and software design. It provides the system engineer to specify software function and performance indicate software's interface with the other system elements and establish constraints that software must meet.

The basic aim of this stage is to obtain a clear picture of the needs and requirements of the end-user and also the organization. The analysis involves interaction between the clients and the analysis. Usually, analysts research a problem from any questions asked and reading existing documents. The analysts have to uncover the real needs of the user even if they don't know them clearly. During the analysis, it is essential that a complete and consistent set of specifications emerge for the system. Here it is essential to resolve the contradictions that could emerge from information got from various parties. This is essential to ensure that the final specifications are consistent.

It may be divided into 5 areas of effort.

- Problem recognition
- Evaluation and synthesis
- Modeling
- Specification
- Review

Each Requirement analysis method has a unique point of view. However, all analysis methods are related by a set of operational principles. They are:

- The information domain of the problem must be represented and understood.
- The functions that the software is to perform must be defined.
- The behavior of the software as a consequence of external events must be defined.
- The models that depict information function and behavior must be partitioned in a hierarchical or layered fashion.
- The analysis process must move from essential information to implementation detail.

2.2 - Software Requirements Specification

Software Requirements Specification plays an important role in creating quality software solutions. The specification is basically a representation process. Requirements are represented in a manner that ultimately leads to successful software implementation.

Requirements may be specified in a variety of ways. However, there are some guidelines worth following: -

- Representation format and content should be relevant to the problem.
- Information contained within the specification should be nested.
- Diagrams and other notational forms should be restricted in number and consistent in use.
- Representations should be revisable.

The software requirements specification is produced at the culmination of the analysis task. The function and performance allocated to the software as a part of system engineering are refined by establishing a complete information description, a detailed functional and behavioral description, and indication of performance requirements and design constraints, appropriate validation. Criteria and other data pertinent to requirements.

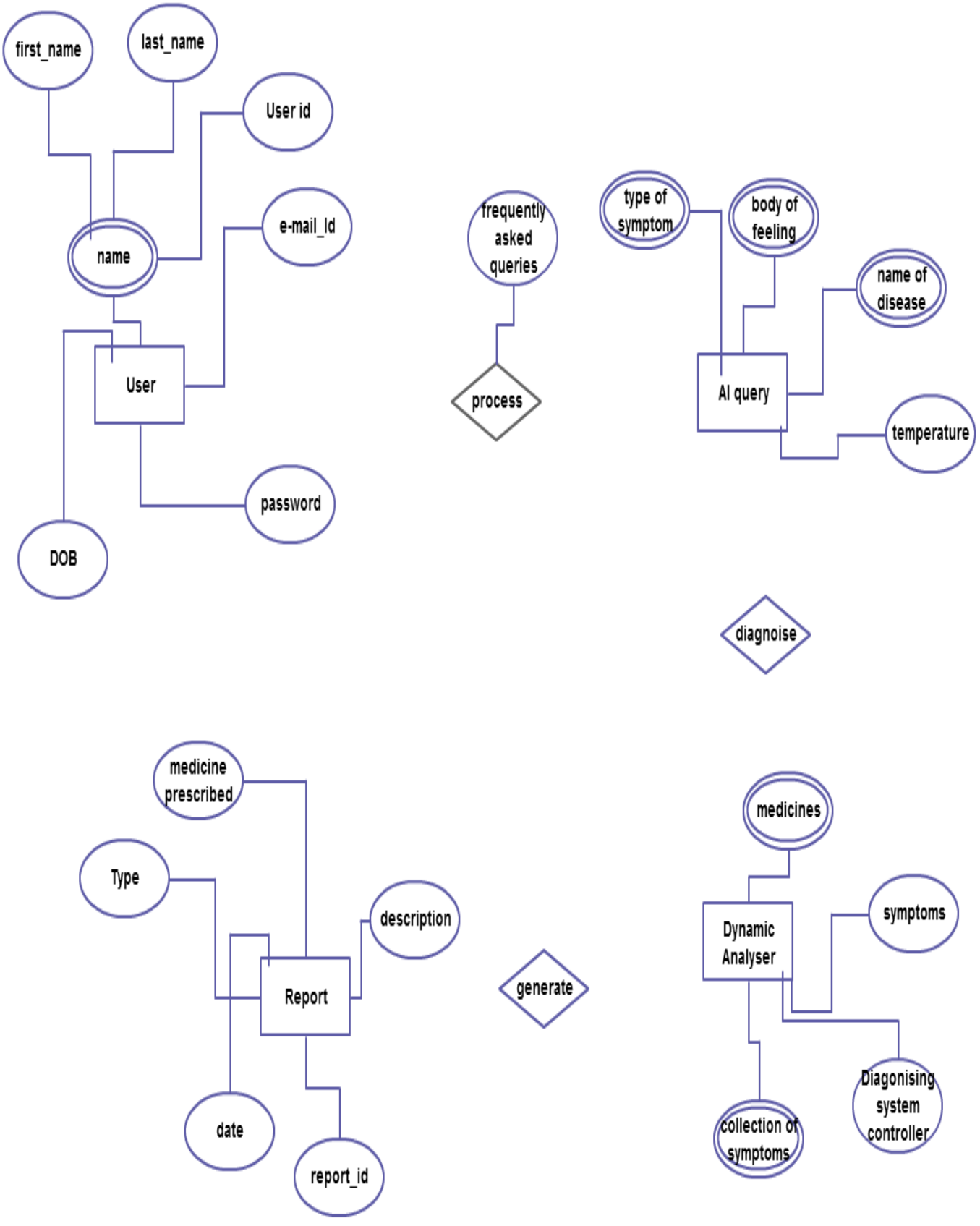
CHAPTER 3 System Design

System design is the most creative phase of system development. The term describes a final system and the process by which it is developed. The question in system design is: How the problem is to be solved?

A systematic method has to achieve beneficial results in the end. It involves starting with a vague idea and developing it into a series of steps. The series of steps for successful system design are:

The first step is to study the problem completely because we should know the goal. We should see what kind of output we require and what king of input we give so that we can get the desired result.

We should see what kind of program should be developed to reach the final goal. Then we write individual programs, which later on joining solve the specified problem. Then we test these programs and make necessary corrections to achieve the target of the programs.


first_name
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User id
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name
User
password
DOB
frequently asked queries
process
type of symptom
body of feeling
name of disease
AI query
temperature
diagnoise
medicine prescribed
Type
description
Report
date
report_id
generate
medicines
Dynamic Analyser
symptoms
Diagonising system controller
collection of symptoms
[online diagramming & design] creately.com

CHAPTER 4 Testing Phase

As testing is the last phase before the final software is delivered, it has the enormous responsibility of detecting any type of error that may in the software. A software typically undergoes changes even after it has been delivered. And to validate that a change has not affected some old functionality of software regression testing is performed

Levels of Testing

The basic levels of testing are unit testing, integration testing and system, and acceptance testing. These different levels of testing attempt to detect different types of faults.

Code/Unit Testing

Code testing and implementation is a critical process that can even consume more than sixty percent of the development time.

Testing

The system development life cycle involves the phases of testing and debugging after the requirement analysis, designing and coding. The project in question was tested, debugged and implemented successfully.

Two strategies of software testing adopted for the new system are as follows

Code testing

Code testing was carried out to see the correctness of the logic involved and the correctness of the modules. Tests were conducted based on the sample. All the modules are checked separately for assuming correctness and accuracy in all the calculations.

Specification Testing

It examines the specification stating what program should do and how it performs under various conditions. This testing strategy is a better strategy since it focuses on the way software is expected to work.

Unit Testing

During the phase of unit testing, different constituent modules were tested against the specifications produced during the design for the modules. Unit testing is essentially for the verification of the code produced during the coding of the phase, and the goal is to test the internal logic of the modules. The modules once tested were then considered for integration and use by others.

Test Planning

Testing needs to be planned, to be cost and time effective. Planning is setting out standards for tests. Test plans set out the context in which individual engineers can place their own work. Typical test plan contains:

Overview of the testing process

- Requirements traceability (to ensure that all requirements are tested)
- List of items to be tested
- Schedule
- Recording procedures so that test results can be audited
- Hardware and software requirements
- Constraints

CHAPTER 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 changeover, an evaluation, of change over methods. A part of planning a major task of preparing the implementation is the 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 the individual organization has been appointed. The implementation process begins with preparing a plan for the implementation of the system. According to this plan, the activities are to be carried out, discussions may regarding the equipment that 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 the inability to handle certain types of transaction while using the new system.

The major elements of the implementation plan are test plan, training plan, equipment installation plan, and a conversion plan.

Interface

Console Based

In this, we have to write Yes or No only.

If our Symptoms are not matched then we have to write no on our screen.

When our Symptoms will be matched then we just have to write yes.

```
.... execute_bot()
Please reply with yes/Yes or no/No for the following symptoms
slurred_speech ?

no
pain_behind_the_eyes ?

no
receiving_blood_transfusion ?

no
red_spots_over_body ?

no
unsteadiness ?
```

Symptoms Window

When we write Yes on our console screen, then our matched problem will be found on screen. And it will also tell the Symptoms which may a patient have.

```
increased_appetite ?

yes
['You may have Diabetes ']

symptoms present  ['increased_appetite']

symptoms given ['fatigue', 'weight_loss', 'restlessness', 'lethargy',
'irregular_sugar_level', 'blurred_and_distorted_vision', 'obesity',
'excessive_hunger', 'increased_appetite', 'polyuria']
```

Bibliography

Books

Learn PYTHON the HARD WAY(Third Edition)

Introduction to Machine Learning

Machine Learning with Python Cookbook

Website

www.we3schools.com

www.stackoverflow.com

www.it-ebooks.com