

An Approach to Devise an Interactive Software Solution for Smart Health Prediction using Data Mining

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Abstract: This study aims in developing a computerized system to check and maintain your health by knowing the symptoms. This study has many features generally not available in normal software like suggesting doctors as per the disease, Symptom checker, gives reference of mobile applications that could help us to remain fit. It has login functionality so that it would be an easier for user to register him and view all the functions on the site and access it easily and with speed .It has a symptom checker module which actually defines our body structure and gives us liability to select the affected area and checkout the symptoms. Overall this study is done to help the people of all ages to check the symptoms related to affected area and can cure it as soon as possible. This study focuses on developing a computerized system to maintain a checkup system for people to check about their own health issues. Suggest Doctor Module includes a facility for the people to approach one of the best doctors in their field for curing their health issues. With this computerized system there would be an ease for people to recognize the health issues.

Keywords: Data Mining, Technologies Used, Proposed System, Symptom Checker.

I. INTRODUCTION

This study aims mainly for the health concerns and the ones who want to be their own Doctor. It is an interactive service for users who wants to know about what health issues they are going through as per the symptoms. It is easy to access and use for searching doctors and booking the appointments. It can also be used for having knowledge about the use of mobile applications.

The study aims in developing a computerized system to let people keep knowledge and idea about their health issues instead of blindly believing the doctors. The person can also verify or cross check about the problems that doctor has suggested.

This system has many features which are generally not available in a normal portal like facility of having the list of best doctors who has won many awards so that the person suffering from any disease can get cured from the best doctors, having knowledge of latest mobile application that helps the person to be fit and healthy through all ways that is Yogasana, Gym and Acupressure.

• Background of Project

The Online Medical Diagnostic [1] is an application which focuses on developing a computerized system to checks the symptoms related to the health issues. It is useful for all age groups to display details and using a computerized system where he/she can insert the symptoms in any part of the body like hands, legs, abdomen, chest, head, neck etc. Suggest Doctor and complete fitness modules are also included in this system which would keep information of

the best awarded doctors of India for the best cure. With this computerized system there would be an ease of knowing the sudden changes in your body before consulting your doctor.

• Problem Recognition

The main problem here is that, more time is taken to result the disease corresponding to the problems. This has to be eliminated. A general solution has to be developed which will provide facilities to result the health issues in a faster and more efficient way. Also user have to search best doctor which consumes a lot of time and then book appointment, so there is a lot of manual work for user.

• Study Objectives

The study objectives that will be achieved after completion of this study are discussed in this subchapter. The objectives are as follows:

- Portal having information about all best doctors. [2]
- A separate module for fitness applications.
- Performs a complete body check and identifies Possible health conditions that match symptoms

II. RELATED STUDY

There are many systems available for diagnostic. But the systems fail to give efficient result. There is a great problem in finding the best doctors for treatment of diseases. There is no website that suggests the best doctors of their fields at one place. There is a great problem for the

older age groups to learn about downloading mobile applications or knowing about fitness applications. Yet references have been taken from various other portals in existing environment for some guidance.

We surveyed over many peoples who come across day to day diseases like headache, cold and cough etc and did not have time to see a doctor, we studied different websites related for health and desktop version then we came on conclusion over all these suggestions and limitations to make such a system that provides a fast solution for common diseases

III. PROPOSED SOLUTION

The proposed study is to make a Diagnostic system which has an easy user interface which can check symptoms, which can also suggest doctors for some specific health issues so that if the symptom checker gives you a result after confirming to the doctor you can take cure and precautions to come over it.

It also helps you to know about fitness applications and the procedure to use it.

IV. TECHNOLOGIES IMPLEMENTED

Front end

The front end is designed with help of HTML, Java Script and CSS.

1. HTML

HTML stands for Hyper Text Markup Language. [4] It is used to create web pages with the help of different tags available. It is the most simple and easy language to create attractive web pages. In HTML, each tag describes different content of document. All HTML work is shown in web browsers, that shows layout of the web page designed. HTML is widely used by designers as it is simple and efficient language.

2. CSS

Cascading Style Sheet is used for designing. It is used to style web pages developed in HTML and XHTML, but the language can be used to develop any type of XML document, including plain XML, SVG and XUL. CSS separates document content from document presentation.

It also includes elements such as the colours, layout, and fonts. This separation improves accessibility, providing control and flexibility in the specification of presentation characteristics, enabling multiple pages to reduce complexity, share formatting and repetition in the content.

3. JAVA SCRIPT

This programming language is mainly designed for developing of network centered applications. It is complimentary to JAVA and integrated with HTML, that's why it is easy to use. It is open and cross platform. A developer must learn java script to program behavior of web pages.

Back End

The back end is designed using MySQL which is used to design the databases

MySQL

In MySQL the SQL stands for Structured Query Language. It is most popular open source Relational Database [3]

Sql database management system. It is one of the best RDBMS used for developing web based software application

MySQL Database:

MySQL is very fast simple and easy to use RDBMS used by many small and big businesses. It is marketed, developed, and supported by MySQL AB, which is a Swedish organization. The reason why MySQL is so popular is due to the following reasons:

- MySQL is a ease of use and is a open-source license and thus it is free of cost.
- It is very powerful program and have its own right. Apart from this it handles a large subset of the functionality of almost all expensive and powerful database packages.
- MySQL works on several operating systems. It includes many languages such as C, C++, PERL, JAVA, PHP, etc.
- MySQL has a quick working ability and still works well with large data sets.
- MySQL is very friendly to PHP.
- MySQL is customizable. The open-source license allows programmers to modify MySQL software to fit their own specific environments.

4. DATA MINING

Data mining is a technology that requires a class of database applications that looks for hidden patterns in a group of data that can be used to predict future requirements. For example, data mining software can help retail companies find customers with common interests.

The word data mining is generally misused to describe software that presents data in new ways. Data mining software not only changes the presentation, but actually discovers previously unknown relationships among the data.

V. TESTING RESULTS

Software testing is process used to assess the quality of computer software. It is a technical investigation performed to provide information about the quality of the product or service under test, with respect to the context in which it is developed to operate.

• Testing Methods

There are 2 types of testing done in a broader category via white box testing and black box testing. These two methods are used by a test engineer while designing the test cases.

• Black Box Testing

Black box testing works with the software as a black box without any information about the internal behaviour. Its objective is to test the functionality corresponding to the requirements. Hence the testing engineer work is only to input data and afterwards he sees the output from the test object.

This kind of testing requires through test cases to be provided to the tester who verifies the given input, the output value is the same as the expected value specified in the test cases.

• White Box Testing

Unlike Black Box testing, in white box testing internal parts are tested, once the tester has the access to the structure and coding area of the system. White box testing is done to check whether code correctly implemented or not, because that’s how system will work if it is internally correct.

• Levels in Testing

Testing levels are given below

1. Unit Testing

In unit testing, each unit is tested to verify in detail the designing of the product developed, whether correctly implemented or not, unit testing generally includes constructors and destructors. These testing tests the smallest modules of the software component in the system developed

2. Integrating Testing

Integrating Testing exposes the defects in interfaces and interaction between components that are integrated Large modules of the system are tested in a way so that they can work together as a system and are tested until whole software works as a system.

3. Final Testing

Before delivering of the final version of the system, alpha and beta testing are also done additionally.

• Alpha Testing

This testing is done at server side or we can say at the developer’s end, this is an actual testing done with potential users or as an independent testing process at server end. Alpha testing is done to internally acceptance of software before beta testing is done.

• Beta Testing

Beta testing is done after performing alpha testing, versions of a system or software known as beta versions are given to a specific audience outside the programming team.

This is done to further test the minor bugs and faults of the system that can come while using the system, sometimes these versions are made available to open public to see the feedback to see the future scope of the system. Finally at

the end acceptance testing is done by the end user that whether to accept the system or not.

Test Data Cases:

Case 1: In login module various validations have been introduced so there are no possibilities for errors.

1. Username and Password must be entered i.e. they can’t be kept null or empty.
2. Username and Password must be matched with the values stored in the database.

Case 2: In registration module, there are some important fields that cannot be kept empty.

1. Important fields are marked with “*”so user can know that these fields can’t be left empty or null.
2. In blood group field, one more validation is there that is on selecting blood group “select” field should not be chosen as an option.

• Results Analysis

The role of the results section is clear; it is an accurate account of the experimental findings.

S.no	Testing	Priority
1.	Functionality	High
2.	Regression	High
3.	Security	Medium
4.	Performance	Medium
5.	Scalability/Reliability	High
6.	Usability/GUI	High
7.	System interpretability	High
8.	Installation	High

Table 1: Testing of Doctor+

VI. CONCLUSION AND FUTURE WORK

As there was no such system available for the ones who wants to be their own doctor and who are concern for health by which the user can check their health issues they are suffering from just by selecting the body part and entering the symptoms.

This study will provide the user the guidance of how to install and download the mobile application so that the person can stay fit without internet.

There was a great problem in searching for the best doctors for the treatment of some common issues. This study solves it by providing the award winning doctors in their own field so that user can take appointment for his/her treatment. In future enhanced version of the system developed by including various more features and also both for doctors and patients’ login and more symptoms can be added.

As per the health issues requirement whole system is designed. We can add additional enhancements to our project. We can also make this system in such a way that users can solve their problems directly through the Internet by querying the doctors about their health issue and their doubts regarding the disease and replies can be viewed by all other registered users, hence it will save time of both patients and doctors, who have the same problem to solve. Further we can also add an option of messaging for the registered users.

REFERENCES

- [1] "Online medical Diagnostic" idea taken from
- [2] www.mysmarthealth.org Doctor+ portal idea taken from
- [3] www.smarthealthit.org
- [4] "SQL Handbook" by Judith S.Bowman 4th edition
- [5] "HTML Black Book" by Holzoner
- [6] [Http:// standards.ieee.org](http://standards.ieee.org)
- [7] "CSS" phrase or word taken from
- [8] https://en.wikipedia.org/wiki/Cascading_Style_Sheets
- [9] "Java server pages" phrase or word taken form
- [10] <http://www.tutorialspoint.com/jsp/>

BIOGRAPHY



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