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SMART HEALTH PREDICTION SYSTEM USING DATA MINING

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ABSTRACT

The paper presents an overview of the data mining techniques with its applications, medical, and educational aspectsof Clinical Predictions. In medical and health care areas, due to regulations and due to the availability of computers,a large amount of data is becoming available. Such a large amount of data cannot be processed by humans in a shorttime to make diagnosis, and treatment schedules. A major objective is to evaluate data mining techniques in clinicaland health care applications to develop accurate decisions. It also gives a detailed discussion of medical datamining techniques which can improve various aspects ofClinicalPredictions. Itis a new powerful technologywhich is of high interest in computer world. It is a sub field of computer science that uses already existing data indifferent databases to transform it into new researches and results. It makes use of machine learning and databasemanagement to extract new patterns from large data sets and the knowledge associated with these patterns. Theactual task is to extract data by automatic or semi-automatic means. The different parameters included in dataminingincludeclustering, forecasting, pathanalysisand predictive analysis.

PROJECT OVERVIEW

1. INTRODUCTION

It might have happened so many times that you or someone yours need doctors help immediately, but they are not available due to some reason. The Health Prediction system is an end user support and online consultation project. Here we

propose a system that allows users to get instant guidance on their health issues through an intelligent health care system .The system is fed with various symptoms and the disease/illness associated with those systems. The system allows user to share their symptoms and issues. It then processes user's symptoms to check for various illness that could be associated with it. Here we use some intelligent data mining techniques to guess the most accurate illness that could be associated with patient's symptoms. If the system is not able to provide suitable results, it urges users to go for blood test, x-ray, CITI scan or whichever report it feels user's symptoms are associated with, so next time user may be able to login and upload an image of those reports. The system

also has a doctor login, these uploaded images are now sent to respective doctor along with patient contact details. The doctors may now contact the patient for further process.

Modules and their Description

This system is having 4 Modules

1. **User's Login**
2. **Doctor's Login**
3. **Upload Images**
4. **Send details of patient**

Description:

1. **User's Login:** Here, user inserts his credentials to get the access of the website.
2. **Doctor's Login**
   - Here, Doctor inputs his credentials tothe access to the website.
3. **Upload Image**
4. Here, the User can upload the patient's medical report to get the accurate solution on the illness/disease.
5. **Send details of patient**
   - Here, Doctor is able to send the details of the patient to other expertise doctors to get the accurate solution.

EXISTING SYSTEM

❖ **Problem with current scenario**

- Traditionally, there was no such system developed from which we would be able to get the details of various illness/disease on a single website.
- Someone needs to contact doctor to get the idea about the illness/disease or also may need to visit to visit doctors dispensary.
- People need to travel to doctor's dispensary wherever or how far it would be.
- No. of pages used to maintain the records of n no. of peoples
- **Drawbacks**

- Maintenance of the system is very difficult.
- There is a possibility for getting inaccurate results.
- User friendliness is very less.
- It consumes more time for processing the activities

PROPOSED SYSTEM

It might have happened so many times that you or someone yours need doctors help immediately, but they are not available due to some reason. The Health Prediction system is an end user support and online consultation project. Here we propose a system that allows users to get instant guidance on their health issues through an intelligent health care system online. The system is fed with various symptoms and the disease/illness associated with those systems. The system allows user to share their symptoms and issues. It then processes user's symptoms to check for various illness that could be associated with it. Here we use some intelligent data mining techniques to guess the most accurate illness that could be associated with patient's symptoms. If the system is not able to provide suitable results, it urges users to go for blood test, x-ray, CITI scan or whichever report it feels user's symptoms are associated with, so next time user may be able to login and upload an image of those reports. The system also has a doctor login, these uploaded images are now sent to respective doctor along with patient contact details. The doctors may now contact the patient for further process.

2.PROJECT IMPLEMENTATION

The Project is loaded in Visual Studio. We used Visual Studio for Design and coding of project. Created and maintained all databases into SQL Server, in that we create tables, write query for store data or record of project.

❖ Hardware Requirement:-

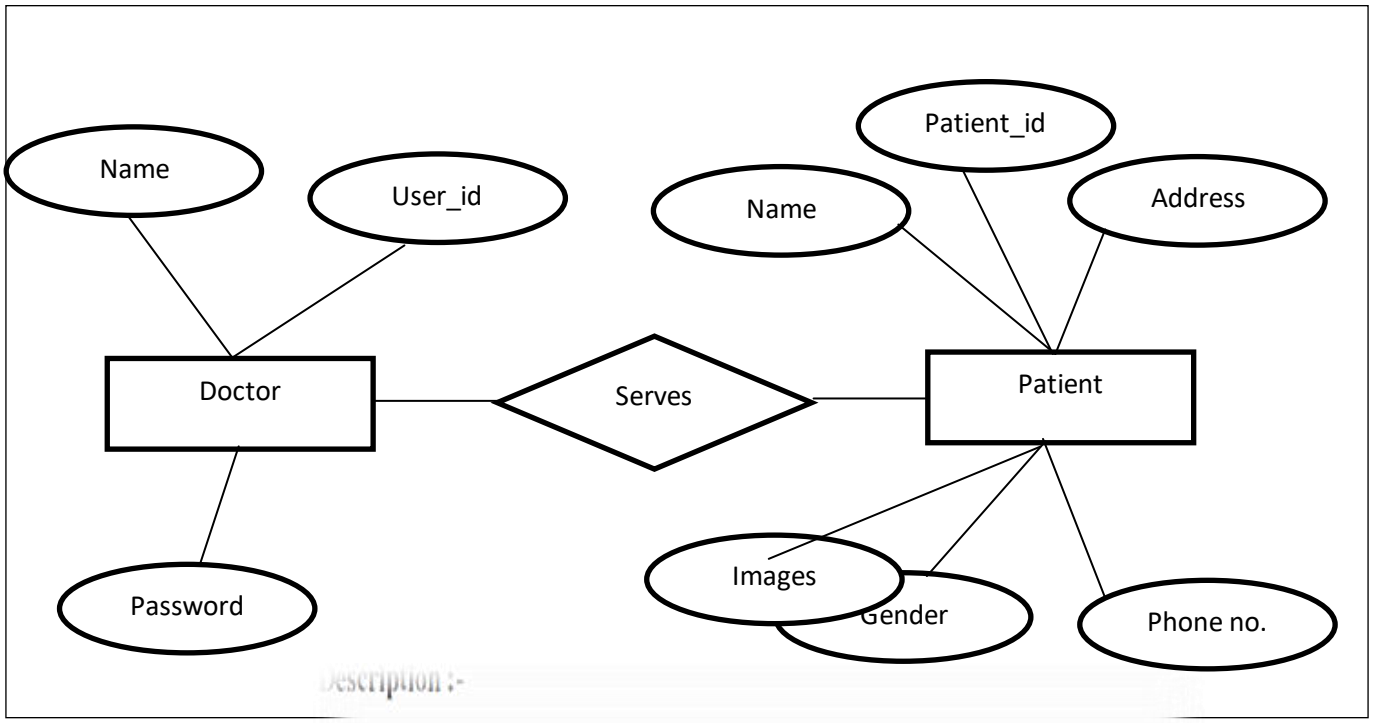
- Dual Core Processor Based Computer
- 1GB-Ram
- 50 GB Hard Disk

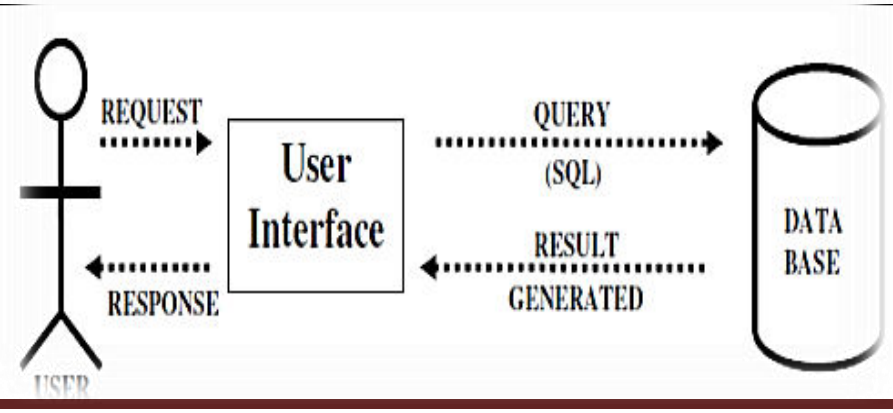
❖ **Software Requirement:**

- Windows XP, Windows 7(ultimate & enterprise)
- Microsoft Visual studio
- SQL Server

PROJECT DESIGN

ER Diagram





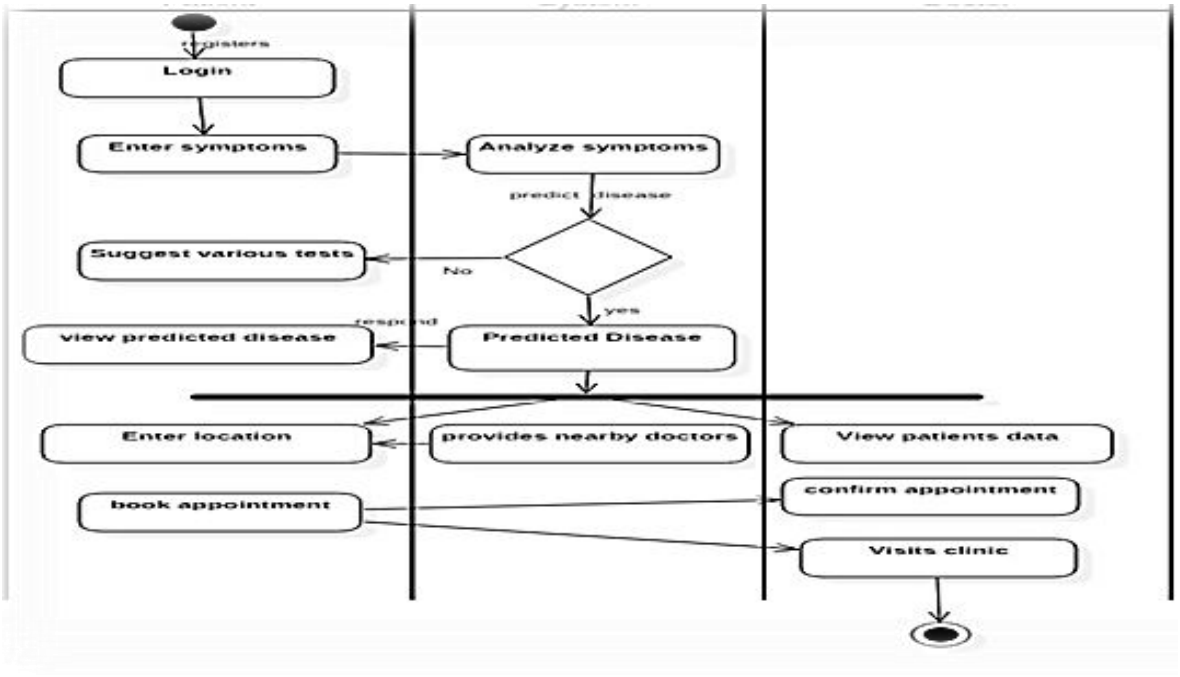


Figure 3 :Activity Diagram for health predictionSystem

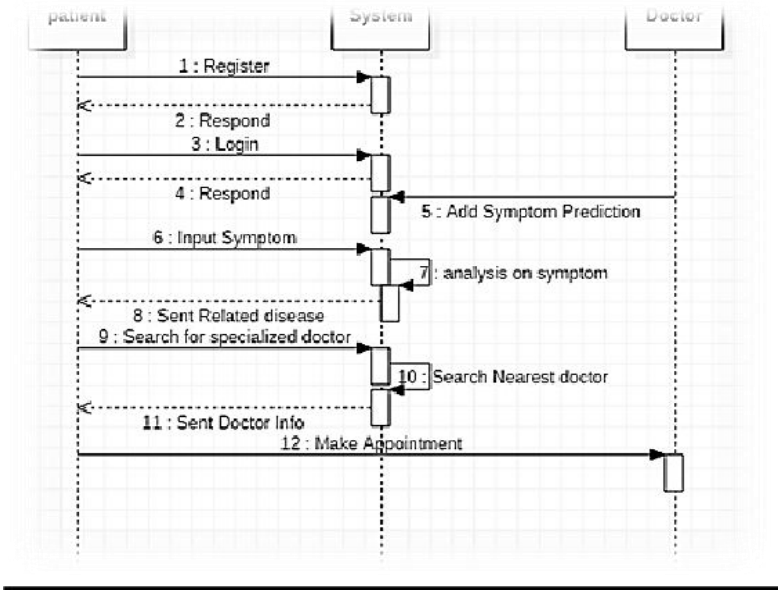


Figure 4: Sequence Diagram for smart healthpredictionSystem

WorkingofTheSystem

Accordingtothediagrams,itisatwotierarchitecture. We provide a form that shows a list ofsymptoms. The user will input those symptoms thatheexperiences .

On the basis of selected symptoms the system willgeneraterelateddisease.Thesystemwillshowanotherformthatcontainsomequeriesiftheinformationforthediseas eisnotenough.

On the basis of the information a query is generatedandthe data baseresponsesto thatquery.

With the help of these designs, the system is designedandimplementedwhichhelpsinautomationofthehealthpredictionsystem.

3. DATA MINING ARCHITECTURE

Data Mining used in the field ofmedical applicationcan exploit the hidden patterns present in voluminousmedical datawhichotherwise isleftundiscovered.

Theterm KnowledgeDiscovery inDatabases,orKDD for short, refers to the broad process of findingknowledgeindata,andemphasizes

the"high-level"applicationofparticulardata miningmethods.

Figure 5: KDD Architecture

NaiveBayesAlgorithm:

Theproposedsystemusesdataminingtechnique“NaïveBayesclassifier” fortheconstructionoftheprediction system. This system involves higher numberof data sets and attributes which are directly collectedfrom doctor’sinformation for accurate prediction ofthe disease. Naive Bayes or Bayes” Rule is the basis for manymachine learning and data mining methods. The rule(algorithm) is used to create models with predictivecapabilities.Itlearnsfromthe“evidence”bycalculatingthecorrelationbetweenthetarget(i.e.,dependent)and other(i.e.,independent)variables

4. FEASIBILITY REPORT

Feasibility Studyis a high level capsule version of the entire process intended to answer a number of questions like: What is the problem? Is there any feasible solution to the given problem? Is the problem even worth solving? Feasibility study is conducted once the problem clearly understood. Feasibility study is necessary to determine that the proposed system is Feasible by considering the technical, Operational, and Economical

factors. By having a detailed feasibility study the management will have a clear-cut view of the proposed system.

The following feasibilities are considered for the project in order to ensure that the project is variable and it does not have any major obstructions. Feasibility study encompasses the following things:

1.Technical Feasibility

2.Economic Feasibility

3.Operational Feasibility

4. ADVANTAGES OF PROJECT

- User can search for doctor's help at any point of time.
- User can talk about their illness and get instant diagnosis.
- Doctors get more clients online.

Disadvantages:

The system is not fully automated, it needs doctors for full diagnosis.

Application:

This system can be used by all patients or their family members who need help in emergency.

Website is:

1)Load Balancing:

Since the system will be available only the admin logs in the amount of load on server will be limited to time period of admin access.

2)Easy Accessibility:

Records can be easily accessed and store and other information respectively.

3)User Friendly:

The Website will be giving a very user friendly approach for all user.

4)Efficient and reliable:

Maintaining the all secured and database on the server which will be accessible according the user requirement

without any maintenance cost will be a very efficient as compared to storing all the customer data on the spreadsheet or in physically in the record books.

5)Easy maintenance:

Health Prediction Using Data Mining systemis design as easy way. So maintenance is also easy.

6.CONCLUSION

TheHealth Prediction Using Data Mining Website, historically viewed as a necessary burden in medical offices, healthcare facilities and wellness centers, can be completely automated through an inefficient online software program. The benefits of implementing this technology touch everyone involved in the scheduling process, as administrators and staff can conduct their tasks more efficiently and accurately, while customers and clients have the ability to book their appointments and reservations quickly and more conveniently.

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