Smart Health Prediction and Product Recommendation

Padmadhar Mishra
Department of IT
BIT, Durg

Abhayjeet saraogi
Department of IT
BIT, Durg
abhayjeetsaraogi@gmail.com

Geetesh KumarPatel
Department of IT
BIT, Durg

Rishabh baranwal
Department of IT
BIT, Durg
rishabhbaranwal009@gmail.com

Abstract:

This paper is proposing an online platform that allows theuser to get instant guidance on their health issue through an intelligent health care system.The system is fed with various symptoms and the disease/illness associated with that system. The system allows theuser to share their symptoms and issues.It then processes user's symptoms to check for various illnesses that could be associated with it. The patients can easily identify the disease by just imputing their issues and the software shows what disease the patient may have. Here we use data mining techniques to guess the most accurate illness that can be associated with symptoms.Overall this study is done to help the patients to check the disease related to the symptoms and can cure it as soon as possible. It has functionality so that it would be an easier for theuser to register him and view all the functions on the site and access it easily**.**

Keywords: Data mining,symptoms, health care system, KDD.

1. Introduction

In today's Modern era, each and every humanbeing on the planet depends on medical treatment and medicines. Every day we can hear some diseases or new symptoms of the existing disease being discovered but with the growing number of new diseases and their symptoms everyone cannot manage to be updated with it. In this fast-moving world, everyone does not have the proper time to go and concern with the doctor and one major problem in today's world is hike in

Doctor's fee and waiting time. So the middle class and lower class people are unable to afford the fee and treatment charges.

So to deal with such situations, we are developing a platform "Smart Health Prediction and Product Recommendation" which has a list of alarge number of diseases, their symptoms, their initial treatment and initial medicines required to cure it. Using this platform, one can easily find what disease he/she is infected with by simply inputting the symptoms faced. There are some other features such as inquiring about the diseases, medicines etc.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 want to know about what health issues they are going through as per the symptoms.

1.1 Data Mining

Data Mining used in the field of medical application can exploit the hidden patterns present in voluminous medical data which otherwise is left undiscovered.

The term Knowledge Discovery in Databases, or KDD for short, refers to the broad process of finding knowledge in data and emphasizes the "high-level" application of particular data mining methods

2. Literature review

Mahboob Khan [1] has implemented Smart Health Prediction Using Data-Mining. Data Mining is a technology which uses already existing data in the database to manipulate results. It also uses data mining and Database management system to extract knowledge from the large set of data sets. The database is fed with the list of various diseases, information about those diseases, their symptoms, and medicines. The user is expected to input the symptoms he/she deals with. The system processes all the symptoms to search for different diseases associated with it and output the diseases which are most probable.

Daniel Lowd and Pedro Domingos on Naïve Bayes model for probability estimation aimed to show that for a wide range of datasets, Naïve Bayes models have accuracy and less learning time compared to other Bayesian networks. The magnitude of order of Naïve Bayes inference is faster than Bayesian network inference.

Sujatha, Sumathy, Anitha Nithya suggests Data Mining as one of the most motivating areas that are becoming popular in ahealthorganization.The actual task of data mining is to extract data by automatic or semi-automatic means. Different areas of mining include clustering, forecasting, path analysis.

Nikita Kamble, Manjiri Harmalkar, Manali Bhoir, Supriya Chaudhary on Smart Health Prediction System Data mining can be beneficial in the field of medical domain.However privacy, security and unable to log into the account are the big problems if they are not addressed and resolved properly. It describes the proposal of hybrid data mining model to extract classification knowledge for theaid of various diseases in clinical decision system and presents a framework of the tool various tools used for analysis.

Priyanka Vijay Pawar, Megha Sakharam Walunj, Pallavi Chitte published a paper on Estimation based on Data Mining Approach for Health Analysis In the proposed system, hidden knowledge will be extracted from the historical data by preparing datasets by applying Apriori algorithm. Predicting smart health can be done only is system responds that way.These datasets will be compared with the incoming queries and the final report will be generatedusing Association Rule Mining. Since this proposed methodology will work on real historical data, it will provide accurate and efficient results, which will help patients get diagnosis instantly. This system will also guide the users of how to remain healthy and fit using tips provided here.

3. Methodology

3.1Existing system

Everyone is a patient at some time or another, and we all want a good medical care. We assume that doctors are all medical experts and that there is good research on all their decisions. However, that cannot always be the case. Nevertheless, they cannot possibly commit to memory all the knowledge they need for every situation, and they probably do not have it readily available. Even if they did have access to the massive amounts of data needed to compare treatment outcomes for all the diseases they encounter, they would still need time and expertise to analyze that information. But this kind of in-depth research and statistical analysis is beyond

the scope of a physician's work. They want a doctor who will talk to them, listen to what they say and give them advice on how to get better and protect their health in the future.

The disadvantage of an existing system would be that the patients have to visit the doctor in person and still does not get proper treatment, as the doctors are unable to predict the exact disease. Human error can be avoided with the help of computer-assisted quality decision making. It is poor when there are huge amounts of data to be classified. In addition, efficiency and accuracy of decisions will decrease when humans are put into stress and immense work. Imagine a doctor who has to examine five patient records; he or she will go through them with ease. However, if the number of records increases with a time constraint, it is almost certain that the accuracy with which the doctor delivers the results will not be as high as the ones obtained when he had only five records to be analyzed.

3.2 Proposed System

To overcome the drawback of theexisting system we have developed smart health prediction System. The system design of the proposed system is shown in Figure

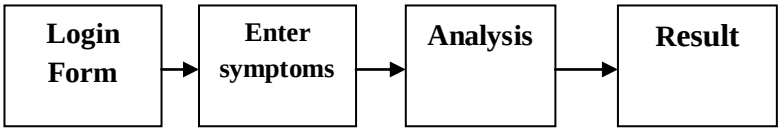

Fig.3.1:Proposed System Framework

The User first has to register himself in the system. After that user has to enter the symptoms and then the System will analyze the Symptoms and try to find the Related disease associated with the user's Symptoms. And the system shows the result of theuser. We are developing a platform “Smart Health Prediction and Product Recommendation” which has a list of alarge number of diseases, their symptoms, their initial treatment and initial medicines required to cure it. Using this platform, one can easily find what disease he/she is infected with by simply inputting the symptoms faced. There are some other features such as inquiring about the diseases, medicines etc. 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 want to know about what health issues they are going through as per the symptoms.

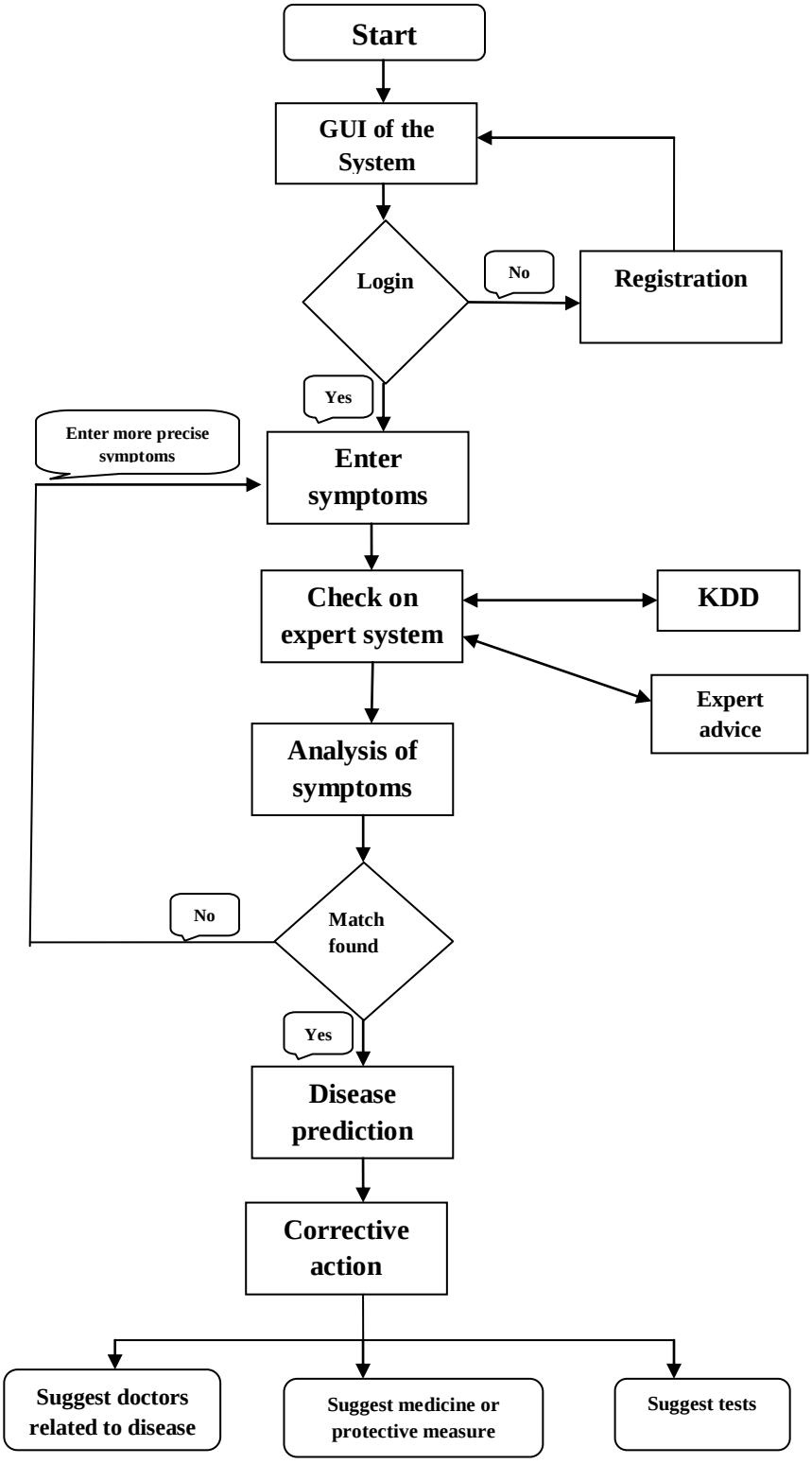

Fig.3.2:Flow Chart of Proposed System

Patient Login: - Patient Login to the system using his ID and Password.

Patient Registration: -If Patient is a new user he will enter his personal details and he will get a user Id and password through which he can login to the system.

Disease Prediction: - Patient will specify the symptoms caused due to his illness. The system will ask certain questions regarding his illness and then predict the disease based on the symptoms specified by thepatient and the system will also suggest doctors based on the disease.

Suggest Medicine: -Medicine will be suggested after symptoms are analyzed.

Suggest doctors: - suggest doctors related to the disease of the patient.

Suggest test: - thetestis suggested according to the disease.

Conclusion:

In this paper, we had proposed a platform which will make use of data mining for health diagnosis. As there was no such system available for the ones who want to be their own doctor and who are aconcern for health by which the user can check their health issues they are suffering from just by entering the symptoms. The paper will prove useful in urgent cases where thepatient is unable to reach adoctor, for emergency cases that do not have doctors in an area, during late night emergencies and also for preliminary examination of patients. This platform "Smart Health Prediction and Product Recommendation" which has a list of alarge number of diseases, their symptoms, their initial treatment and initial medicines required to cure it. Using this platform, one can easily find what disease he/she is infected with by simply inputting the symptoms faced.

References:

[1] Aakash Khatavkar, Piyush Purpose, Pankajkumar Pandey," Smart Health Prediction System", IJSRD - International Journal for Scientific Research & Development| Vol. 5, Issue 02, 2017 | ISSN (online): 2321-0613.

[2] Aditya Tomar, "An Approach to Devise an Interactive Software Solution for Smart Health Prediction using Data Mining",International Journal of Advanced Research in Computer and Communication Engineering ISO 3297:2007 Certified Vol. 5, Issue 7, July 2016.

[3] Prashant Tiwari, Aman Jaiswal, Narendra Vishwakarma, Pushpanjali Patel, "Smart Health Care",International Research Journal of Engineering and Technology (JET) e-ISSN: 2395 -0056 Volume: 04 Issue: 04 | Apr -2017.

[4]M.A.Nishara Banu1, B GomathyPG Scholar,Assistant Professor,"Disease Predicting System Using Data Mining Techniques", International Journal of Technical Research and Applications **e**-ISSN: 2320-8163, www.ijtra.com Volume 1, Issue 5 (Nov-Dec 2013), PP. 41-45.

[5]Vikas ChaurasiaResearch Scholar, "Early Prediction of Heart Diseases Using Data Mining Techniques" et al, Carib.j.SciTech,2013,Vol.1,208-217.

[6] Pinky Saikia Dutta, Shrabani Medhi, Sunayana Dutta, Tridisha Das, Sweety Buragohain,"International Journal Of Current Engineering And Scientific Research (IJCESR)", ISSN (PRINT): 2393-8374, (ONLINE): 2394-0697, VOLUME-4, ISSUE-8, 2017.

[7]Abhishek Taneja**,** "Heart Disease Prediction System",Using Data Mining Techniques**,**Orient. J. Comp. Sci. & Technol., Vol. **6**(4), 457-466 (2013).

[8]Manaswini pradhan, "Data Mining & Health Care:Techniques Of Application",International Journal of Innovative Research in Computer and Communication EngineeringVol. 2, Issue 12, December 2014.Manaswini pradhan.

[9]Philips Research, Jeroen Wals "Healthcare Smart Systems", ETP Conference, May 11 the, 2010 Brussels.

[10]H. C. Koh and G. Tan, "Data Mining Application in Healthcare", Journal of Healthcare Information, Management, vol. 19, no. 2, 2005.

[11]Dangare C S, Apte S S. "Improved study of heart disease prediction system using data mining classification techniques". International Journal of Computer Applications, 47(10): 44-48, 2012.

[12]Sathyabam Balasubramanian, Balaji Subramani. "Symptom's based diseases prediction in medical systemby using k-means algorithm", Volume 3, No. 2, February 2014.

[13] Dr mahboob khan, "smart Health Prediction using data mining",International Journal of Advanced Research in Computer Engineering of Technology(IJARCET)

[14] Sujathasympathy, Anitha Nithya, "A survey of Health Care Prediction Using Data Mining",International Journal Of Innovative Research in Science,Engineering& Technology Vol.5,Issue 8,August 2016.

[15] Nikita Kamble, Manjiri Harmalkar, ManaliBhoir, Supriya Chaudhary, "Smart Health Prediction using data mining", International Journal of Scientific Research in Computer Science, Engineering and Information Technology,Volume 2, Issue 2,ISSN: 2456-3307.

[16] Priyanka Vijay Pawar, Megha Sakharam Walunj, Pallavi Chitte, "Estimation based on Data Mining Approach for Health Analysis",International Journal on Recent and Innovation Trends in Computing and Communication, Volume: 4 Issue: 4 ISSN: 2321-8169 743 – 746.