



Smart Self-Diagnostic based Hospital Management System for Rural Areas

Amrita gupta¹, Sarvesh singh²
M.Tech Scholar¹, Assistant Professor & HOD²
Department of Computer Science & Engineering
Jayoti Vidyapeeth Womens University, Jaipur, India

Abstract:

This system aimed to be Self-diagnosis with advanced hospital management system. It provides a self-diagnostic assessment to the patient, if hospitals are not available by near places. This system provides an additional facility, that is patient can interact with an appropriate doctor through Discussion forum. Patient can get appropriate suggestions to his/her problem. The proposed system generates the report that provides details for the patient's health constraints. It generates the diagnosed disease name, symptom level, and suggested medicine. This suggestion may be in the two forms: First suggestion may be an appropriate medicine based on symptom Intensity level; second suggestion may be a specialized doctor meeting that means his disease may be in a critical state. If patient's condition is normal it suggests the appropriate medicine by using Heuristic search technique. It will take symptoms as input for suggesting medicine. The local search algorithm searches for nearer intensity value in the database. If patient's condition is critical it suggests the appropriate specialists. The generated result report will forward to the specialized doctor. Administrator can update medicines in database frequently. We can facilitate a suggestion box to the patients to improve my application. This application can be implemented by J2EE, ORACLE8i or higher database.

Keywords: Self-diagnosis, intensity level, critical state, heuristic search technique, local search algorithm, J2EEE, Oracle8i.

I. INTRODUCTION

Self-Diagnosis with Advanced Hospital Management System will be helpful to the people who are far away from the hospitals. This system mostly useful in the homeopathy and the patients can get suggestions from the doctors by using discussion form, patients can put their queries and doctor replies to the patient problem. Patients can get appropriate suggestions to his/her problem. This system will be helpful to the people who are busy with their professional work. Because, they can get doctor suggestions through online and can share their problems with doctor. The self-diagnosis feature helps the patient for taking medicine without consulting doctor. But, it can provide treatment up to some diseases that means rectifiable diseases without doctor suggestion with some dosage of tablets. For an example suppose the patient will be suffered from fever, first he/she has to enter his disease. Then the application will have to pose some symptoms regarding that disease, those symptoms are answered by the patient.

The symptoms may be in the form of following queries:

- Do you have head-ache?
- Do you have body pains?
- What is the level of your body temperature?
- Are you feeling nausea?
- From how many days you are suffering from this problem?

Like these type of queries patient may have to answer. This application itself have an intensity levels for each query, based on the intensity levels it can suggest medicines. To provide suggestion we have to calculate intensity level. This Intensity level is calculated by using symptoms result provided by

patient. For each symptom we can maintain some intensity levels by the doctor suggestion, based on that intensity level calculate total intensity level, based on the total intensity level the appropriate suggestion from database provided. In the database Local search performed to reach appropriate medicine. We can provide suggestions to some resistible diseases that mean rectifiable problems by some medicines. This may be useful to the patients who are in far distance from hospital and to the doctors also to interact with patients in or out of the hospital. Administrator can update medicines in database frequently. We can facilitate a suggestion box to the patients to improve this application. All the medicines information is stored in the database tables for each disease, as well as symptoms also maintained in the tables.

II. EXISTING HOSPITAL MANAGEMENT SYSTEMS

Generally Self-Diagnosis with Advanced hospital management system is used at Homeopathy Hospitals. Our system helps for general people for suggesting the required medicine. In a modern era, less people are going to use homeopathic medicines, because it takes much time to recover from problem. So, that this system would be able to help and to develop the type of Self-diagnosis system for pharmaceutical medicines.

Problem with existed System:

Hospital management system created the computerized hospital environment by eliminating the manual work by the staff. This system is helpful for the hospital management. The existed system only helps the Hospital management but is not useful to the patient out of the hospital or remote areas. So, the existed system doesn't useful to the normal people. To provide

hospital facilities to the remote areas people the self-diagnosis with Advanced Hospital Management System is proposed.

III. PROPOSED MODEL

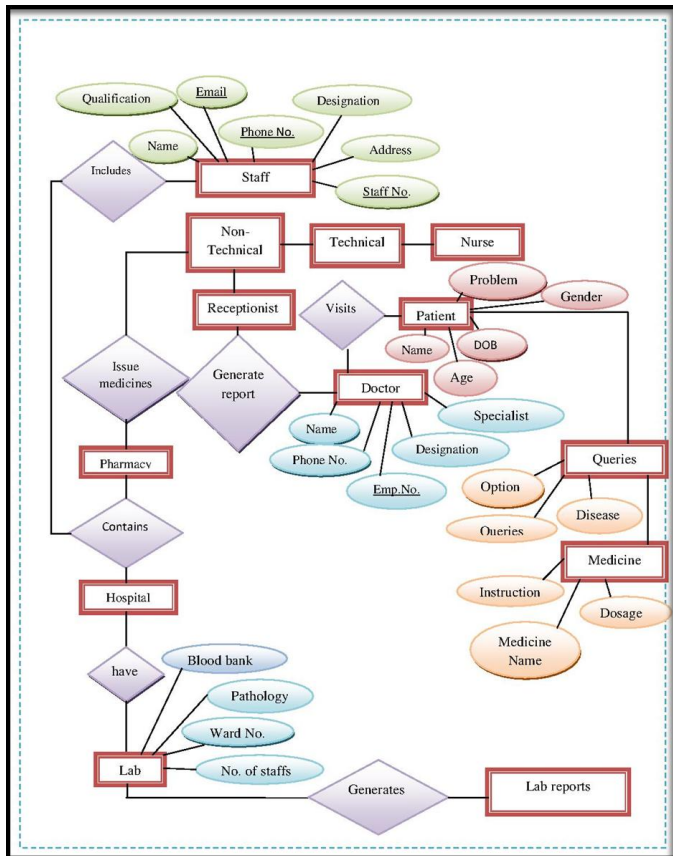


Figure.1. Structure of the proposed model

Figure 1 represents the structure of the proposed model. It shows the various users and features of the proposed model. Self-Diagnosis with Advanced Hospital Management System will be helpful to the people who are far away from the hospitals. This system mostly useful in the homeopathy and the patients can get suggestions from the doctors by using discussion form, patients can put their queries and doctor replies to the patient problem.

i. Users of the System

- Doctor
- Patient
- Administrator(Hospital Management)

Patient:

The user can login to the System with his own id and password. After login to the system Patient can mention his/her problem and the system possess some questions like symptoms based on that patient requirement. If the patient is new to this application he/she has to create his/her own Account by signup option in login form. The Patient won't get any medicine without selecting options for the corresponding queries. After selecting the category, patient has to select the disease with which he/she is suffering. If the category selected is general, it will show some general diseases. Again, the patient must have to answer the queries, and then only the application will suggest the medicine accurately He/She has to follow the dosage and instructions provided by the application, And then only the problem will

be rectified. After the patient got the medicines, he/she has to choose the logout option to come out from the system.

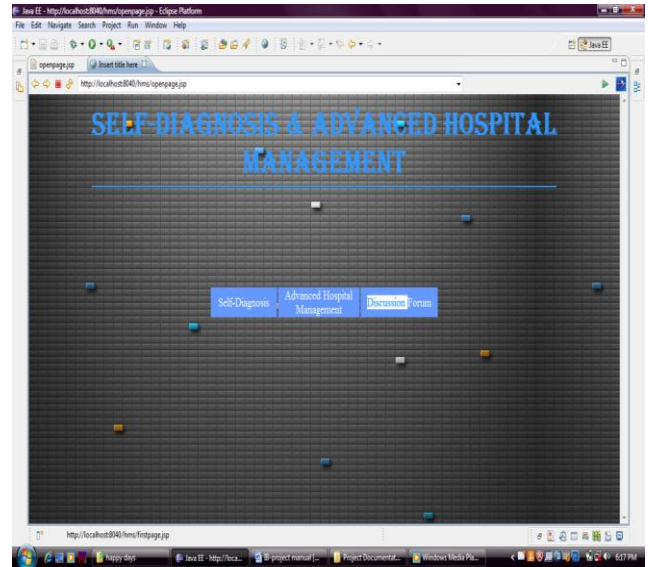


Figure.2. Patient User menu window

Doctor:

The Doctor will have a direct interaction through his/her account. He has to provide his appropriate mail id. The patient will communicate with the doctor by using the chatting application. Through this option, he/she will get an appropriate suggestion or medicine based on the disease from which patient is suffering. Patient has to share his/her problem with the doctor without hiding anything. The doctor has to suggest the medicines based on the patient answers. As the patients answer is accurate, the medicine will also work accurately. He/she may suggest some tests also based on the patient health status.

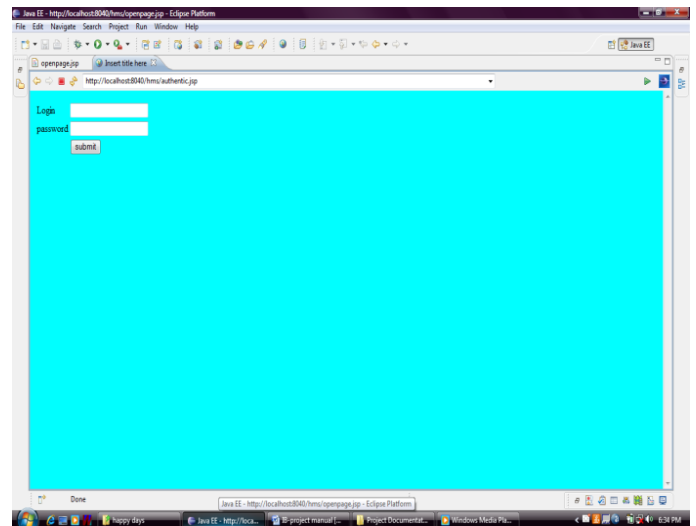


Figure.3. Login window for professionals (users)

Administrator

Administrator is the user and who is the most responsible person to maintain the system. He/she maintains the details of this Application .He/she can perform updating the database. Administrator will update the database if any queries or medicines related to different diseases are changed. Administrator will have their own user name, password to make updating into database. The Administrator will update

the medicines day by day and will maintain the total medicines details.

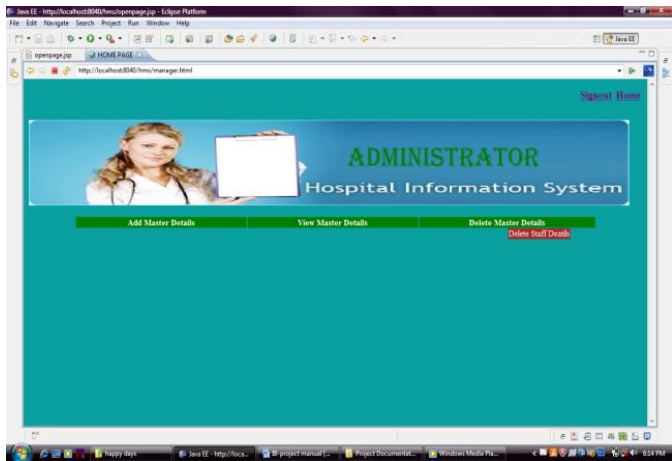


Figure.4. Administrator login window

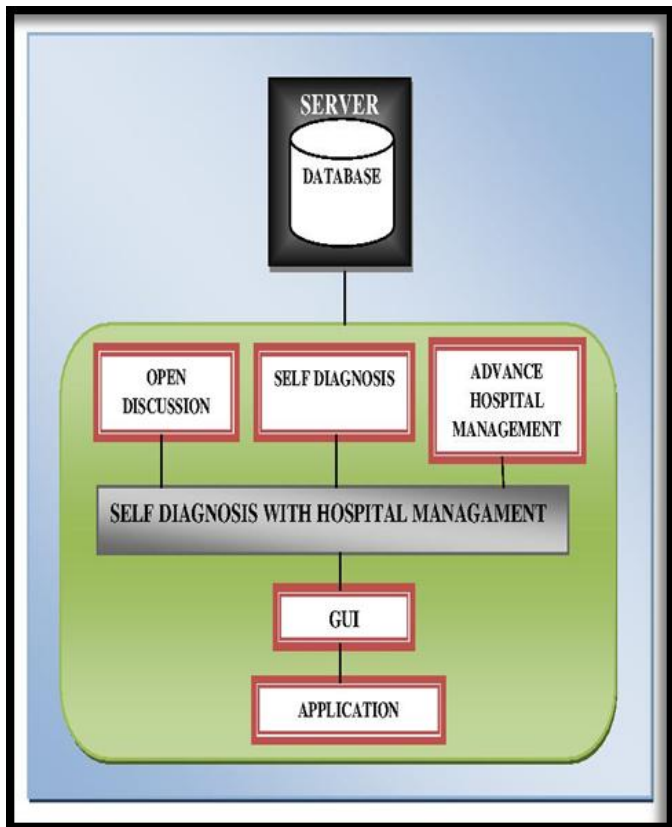


Figure.5. Proposed system architecture

Figure 5 represents the system architecture of the proposed model. It consists of the following features:

- i) Open Discussion
- ii) Self-Diagnosis
- iii) Advance Hospital Managements

Open Discussion:

This feature includes the open discussion module in the proposed model. In this feature, we can openly discuss online with the doctors or the concerned authority. Thus, anyone can have direct conversation online with the desired authority. Thus, it bridges the gap between the quality consultancy of the qualified professionals for the diagnosis and consultancy related to the health issues.

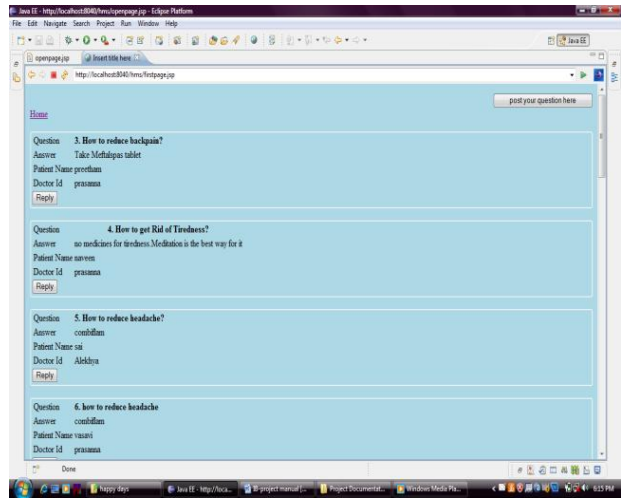


Figure.6. Discussion/Query login window

Self-Diagnosis:

This feature includes the self-diagnosis option for the concerned patient. Any patient can enter his symptoms /problems into the system. This module will prescribe the medicines meant for those symptoms without the need of any additional consultant. Self-diagnostic feature will improve the time required and thus compensate the availability of the consultants.

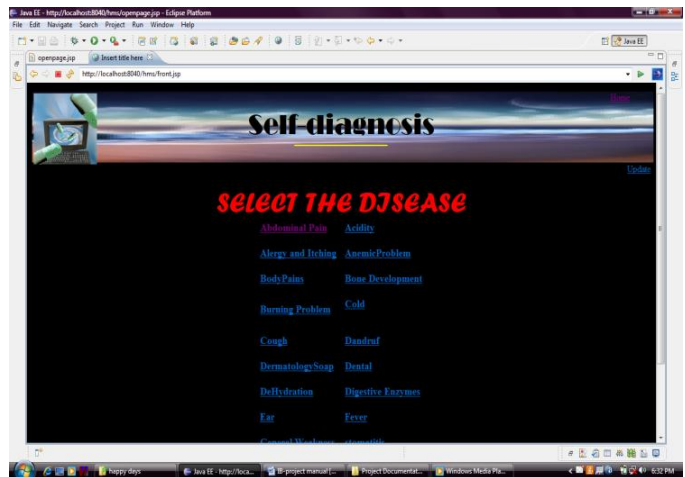


Figure.7. Self-diagnosis/prescription

Advance Hospital Management

In this feature, the various inventory management and personnel data management has been included. Various inventories of the medical components like medicines, bandages, tools can be managed using this system. Thus, it makes the overall management of the reports very easy.

IV. SYSTEM REQUIREMENTS

- **Software requirements**
 - ✓ Oracle10g
 - ✓ J2EE
 - ✓ Tomcat web server5.0
 - ✓ Windows XP professional
- **Hardware Requirements:**
 - ✓ Pentium4 or
 - ✓ core2duo processor
 - ✓ 1 GB RAM

V. DISCUSSION & CONCLUSION

The proposed model eases the way of the hospital management. Our proposed model can be accessed by the administrator, patients and doctors/Medical personnel. It includes the various functionalities that includes online consultancy, hospital inventory management and self-diagnostic features. The proposed system solves the way of the management of the medical prescription for rural areas where trained professional are not readily available. It solves the problem of lack of health workers /trained doctors or medical practitioners in remote areas.

VI. REFERENCES

- [1]. Alice Kok (2012, Mar 14).Thailand: successful e-health system lauded. FutureGov. Accessed from: <http://www.futuregov.asia/articles/2009/may/14/thailand-successful-e-health-system-increase-health/>, accessed 19 March 2013)
- [2]. Paul R. Vegoda (1987). Introduction to hospital information systems. International journal of clinical monitoring and computing, Volume 4, Issue 2, pp 105-109
- [3]. Payam Homayounfar. (2012). Process mining challenges in hospital information systems. Proceedings of the Federated Conference on Computer Science and Information Systems. – FEDCSIS, Wroclaw, Poland, pp. 1135–1140. Accessed from: <http://fedcsis.org/proceedings/fedcsis2012/pliks/376.pdf>
- [4]. <http://www.ehealth-connection.org/>
- [5]. Wang, B. Eliason, R.W. Richards, S.M. Hertzler, L.W. Moorey, R. , “Financial impact of medical technology”, IEEE Engineering in Medicine and Biology Magazine, vol. 27, no. 4, pp. 80-85, JULY/AUGUST, 2008.
- [6]. David W. Feigal, Susan N. Gardner, and Mark McClellan, “Ensuring Safe and Effective Medical Devices”, The new England journal of medicine, vol. 348, no.16 ,pp. 191-192, 2003.
- [7]. David W. Feigal, M.D., M.P.H., “Total Product Life Cycle, Center for Devices and Radiological Health”, FDA Available: www.fda.gov.