Web-Based Disease Diagnosis Expert System

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Abstract – It is well known that developing countries are facing a lot of shortage of medical expertise in medical science. Due to this, they are unable to provide good medical services to their country people. ES system is very helpful for the patients that infected with common diseases and this system will give a prescription as a medical expert also this system is very helpful for rural areas where we have young medical expert or don't have medical expert.This paper describes a project work aiming to develop a web-based disease diagnosis expert system for diagnosing human diseases . Result shows that the system facilitates the uses to diagnose his/her probable disease. It gives solution according to the choice of symptoms user chooses or patient has. Practitioners can also use this web-based tool to corroborate diagnosis

I.INTRODUCTION

It is moral responsibility of a country to provide the good medical services to their country people becausehealthy people make healthy country.Artificial Intelligence (AI) is the area of computer
science focusing on creating expert machines that can engage onbehaviors that humans consider intelligent[1]. Our project can be used to provide the prescription for general health diseases like cold and flu, depression,pain management , Allergy and also it works as a human expert . To get the good medical treatment is a right of every country citizens.

Computer-based methods are increasingly used to improve the quality of disease diagnosis. In today's world web-based disease diagnosis system can help to people at home or office and have an idea about the disease. It enables the patient to find out the diseases and medicine when no other help is possible at primary level.

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Many researched already done relatedwith developing expert system to diagnosediseases. There is a research conducted using ' Certainity Factor' method,in order to help parent indiagnosing of their children disease [2].Another system is Diagnosis expert system(DExS) which is a rule-based system and makes inferences with symbols, which require translation of a diseases specific knowledge inthe standard symbolic form[3].Whereas Linear Search is effective method for sequentially searching and processing the symptoms[4].

Proposed web based disease diagnosis system uses linear search is presented in section 3 and evaluation of proposed system is shown in section 4, section 5 concludes the paper.

II.BACKGROUND STUDY

OVERVIEW OF DISEASE DIAGNOSIS SYSTEM..

s Various expert systems are developed for diagnosis of various types of diseases as pain management[5], cold and flu [6], children diseases [2], etc. The first research article dealing with medicine and computers appeared in late 1950's (Ledley & Lusted, 1959's). Later an experimental prototype appeared in the early 60's (Warner et al., 1964)

Artificial intelligence is an integral part of decision support systems. Fig 1. shows classification of clinical decision support systems:-

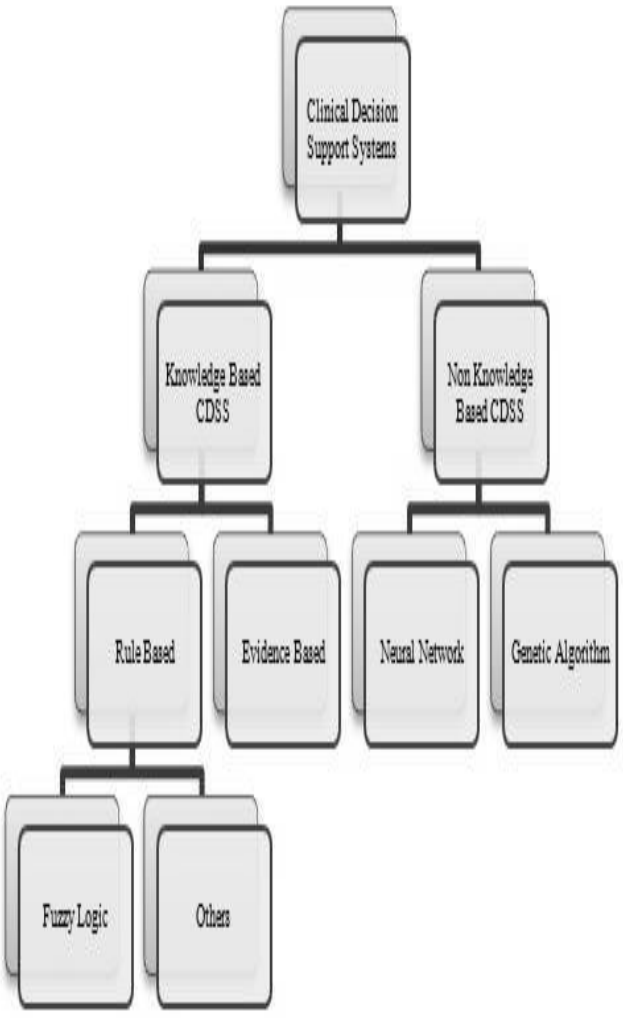


Fig 1: Representing different methodological branches of the clinical decision support systems [7].

III. PROPOSED WEB BASED DISEASE DIAGNOSIS EXPERT SYSTEM

The proposed system assist user to diagnosis disease, he/she might have, using linear search method. Based on the selection of the symptoms category, system gives some symptoms from which the user needs to select symptoms. According to the symptoms selection system diagnose the disease based on its knowledge or database

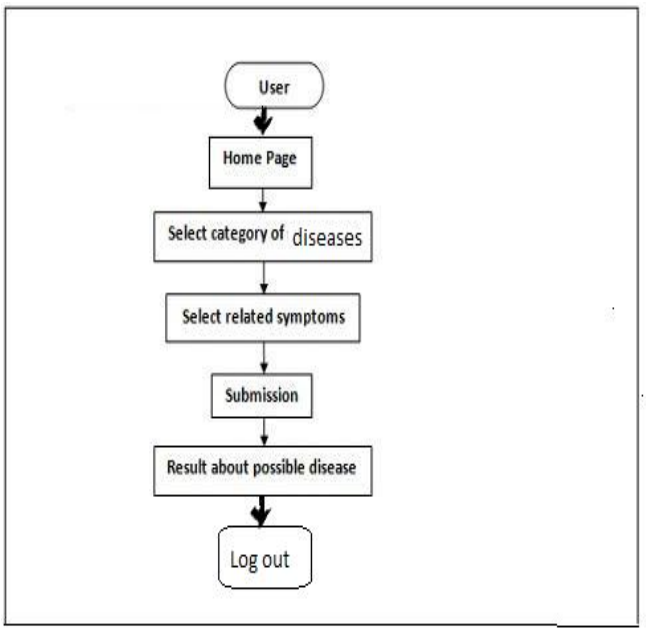


Fig 2 Represents the flow chart of the proposed system.

Different modules in the system are as follows:

i. Registration

ii. Symptoms checker

iii. Admin Panel

- Registration form

When we log on to website, a home page appears which consist of registration form.New user can register themselves by filling all the details in the registration form to go through facilities provided by the website.

- Symptom's Checker:

List of diseases :

- Allergy
- Cold and Flu
- Depression
- Pain Management

First of all we have to select the disease ,then symptom page will appear one by one having 'YES' and 'NO' options. The user has to click on 'YES' or 'NO' for every symptoms .The number of symptoms clicked 'yes' are counted using searching algorithm.the selected symptoms will be

- Admin Panel

Admin Panel is controlled by Admin.Admin is the person who controls all the information of the expert system.He can add,delete,update data as per the situation.

IV. EVALUATION OF PROPOSED SYSTEM

A basic algorithm of linear search is based on the concepts of sequential search. The algorithm used in the second module i.e 'Symptoms Checker' of the project is 'linear search'. In linear search , user can access each element of an array one by one sequentially .Therefore it is also called as sequential search. Complexity of linear search

Best Case : O(1)

In the **best case**, the target value is in the first element of the array.

Average Case: O(n).

In the **average case**, the target value is somewhere in the array.

Worst Case: O(n).

In the **worst case**, the target value is in the last element of the array.

Space Complexity:O(1).

A search is said to be successful if the user or the system is able to get the desired result otherwise it is unsuccessful. In Symptoms Checker linear search is being used to search the symptoms that has been clicked 'YES' and count its number. Analysing the count and the symptoms , the system will give corresponding information to the user.

Algorithm:

1. [Initialize] Set K=1 and LOC=0.
2. Repeat steps 3 and 4 while LOC=0 & K<=N.
3. If ITEM=DATA[K], then : set LOC=K.
4. Set K=K+1.
5. If LOC=0, then :

   Write:Item is not in the array DATA.

Else:

Write: LOC is the location of ITEM.

6. Exit.

V. IMPLEMENTATION RESULT

Implementation results are shown in various snapshots:

REGISTRATION FORM:

When we open the site then first we have to register our self .Registration form appears as shown below in which it is mandatory to fill all the details.

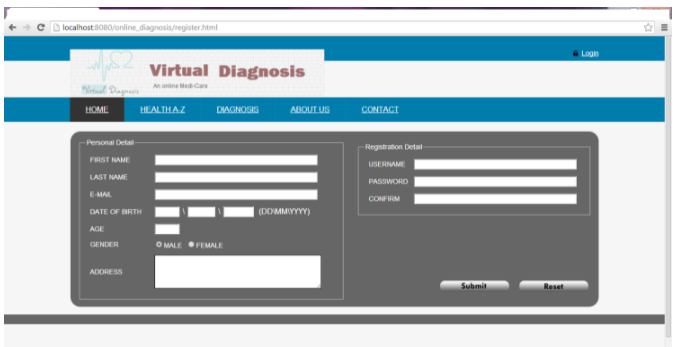
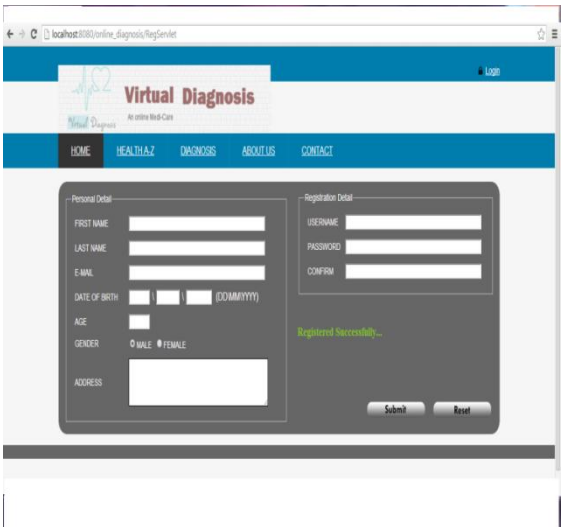


fig: Home Page of Registration form

SUCCESSFUL REGISTRATION

When we fill all the details in the registration form and submit it, a message appears showing our registration is



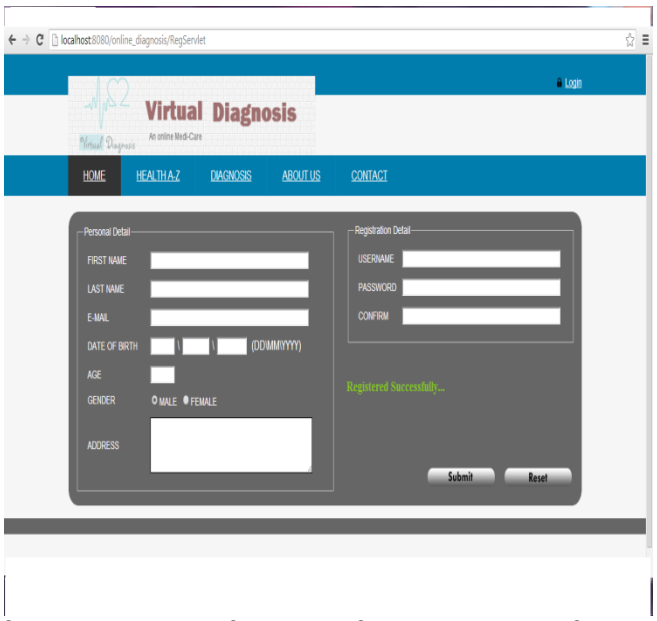


fig: Home Page of Successful Registration form

LOG IN

When we are already registered user we can directly log in to the site .

fig: Web page showing Log in Form

SYMPTOMS CHECK PROCEDURE

After log in page two section appears ,symptom check procedure and test procedure.

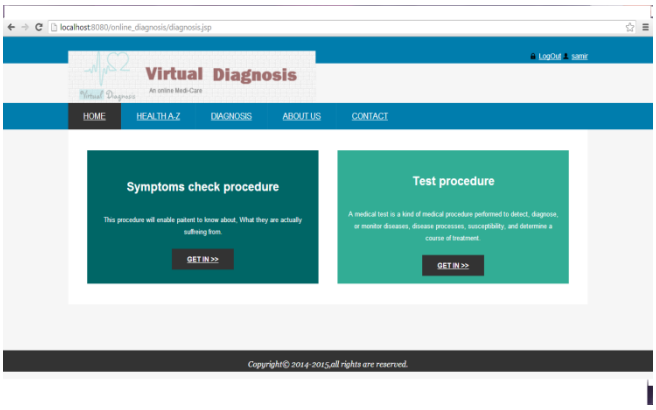


fig: Web page showing symptom check procedure

LIST OF DISEASES

If we select symptoms check page . list of diseases is shown i.e allergy ,cold and flu,pain management and depression.

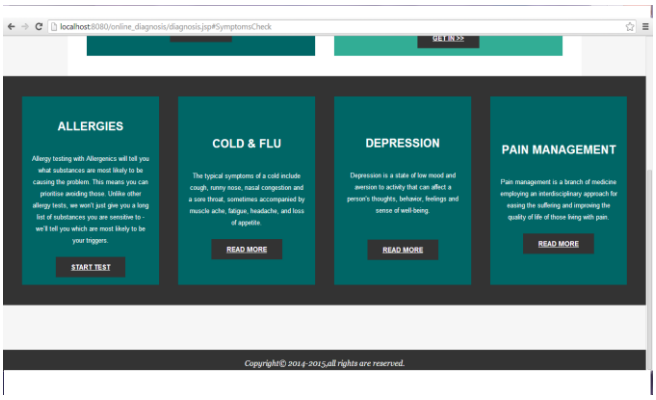


fig: Web page showing List of diseases

ALLERGY TREATEMENT PAGE

LIST OF SYMPTOM: One by one question is asked to the patient having yes and no option.Next question comes when user select s the option

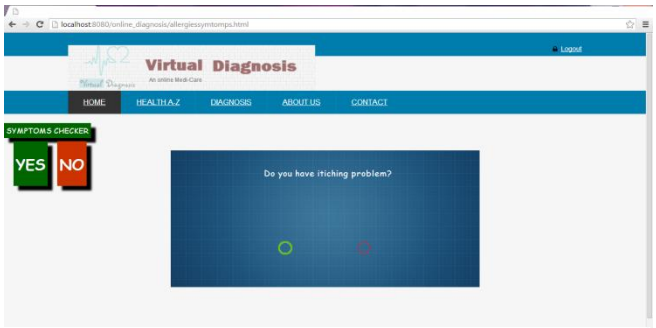


fig: Submit the symptoms by clicking on yes button.

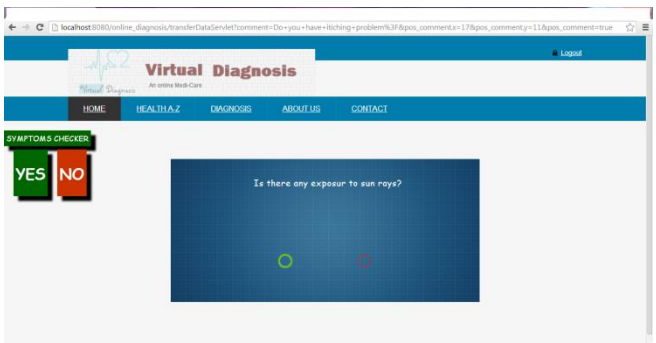


fig: Web page showing selection of symptoms

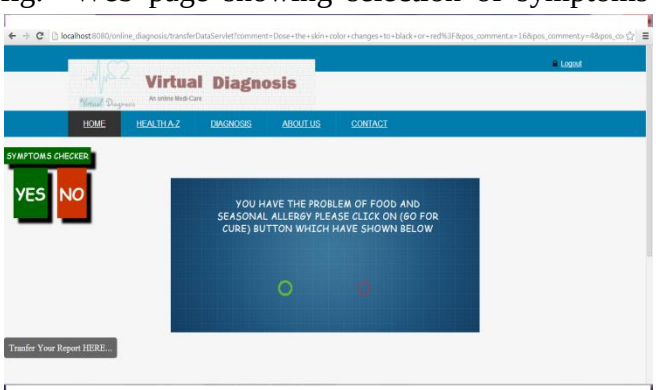


fig: Web page showing selection of symptoms**RESULT PAGE**

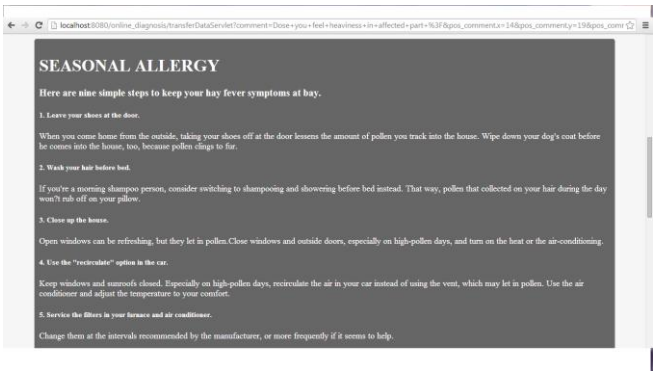


fig: Web Page showing Result

ALLERGY TREATMENT

For un-registered user ,treatment pages are available.

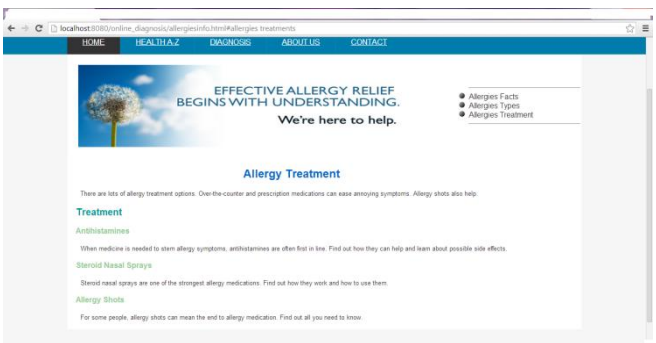


fig: Web Page showing Allergy Treatment

COLD AND FLU FACTS

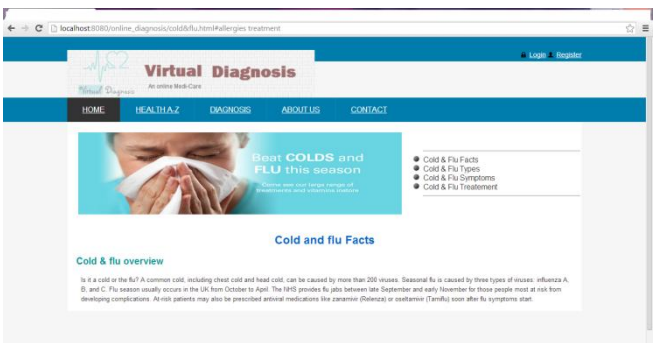


fig: Web Page showing Cold and Flu Facts

SYSTEM EDITOR

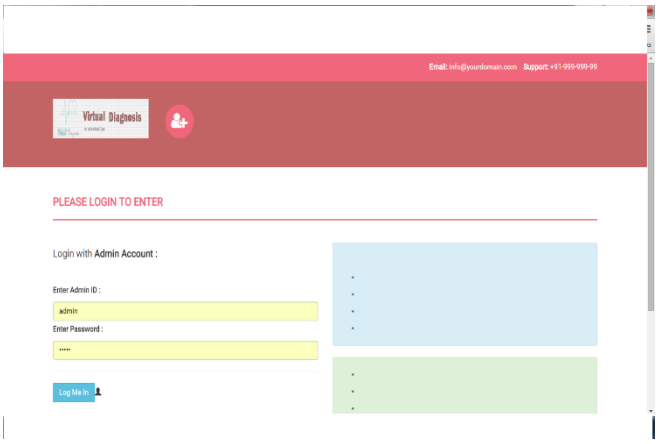


Fig:Web Pgae showing Symptom Editor

MAIN PAGE FOR ADMIN LOGIN

Fig:Web Page showing main page for admin login

VI. CONCLUSION

Web applications play a dominant role in this cyber era. Knowledge based applications are the features of latest online technology proposed web-based disease diagnosis system can play a vital role for the users of the system. The system facilitates the user to diagnose his/her probable disease with Linear search methodology. It gives solution according to the choice of symptoms user chooses or patient has. As knowledge base is created on the basis of books of experts users can also relay on it. Practitioners can also use this web-based tool to corroborate diagnosis. The proposed system is experimented on various scenarios in order to evaluate its performance. In all the cases, proposed system exhibits satisfactory results.

REFERENCES

[1] Russell, S. and P. Norvig," Artificial Intelligence: A ModernApproach, Prentice Hall",2002.

[2] Hustinawaty, Randy Aprianggi, *1(Information System Department, Gunadarma University, Indonesia),"*The Development of Web Based ExpertSystem for Diagnosing Children Diseases Using PHP and MySQL*",pp.197-199,April2014.*

[3] P.Santosh Kumar Patra, Dipti Prava Sahu, Indrajit Mandal," An Expert System for Diagnosisof Human Diseases" ,pp.71-73,2010.

[4]."Guidelines on Pain Management & Palliative Care",pp.1-24, 2013

[5]."About Pain And Pain Management",pp.1-2,http://www.palliativecare.org.au

[6]"A self-treatment guide for colds and flu" http://www.chic.org.uk

[7]M.M.Abbasi, S. Kashiyarndi, "Clinical Decision Support Systems: A discussion on different methodologies used in Health Care", IEEE.

[8].."Depression-A Global Public Health Concern"- http://www.who.int/mental_health/management/depression/who_paper_depression_wfmh_2012.pdf