

Universal Healthcare System & Symptom Checker through PHP

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Abstract— The quality of healthcare system in India is diminishing at a constant rate. There are various factors accountable for this effect. Government less allotted budget on healthcare, lack of experienced staff and corruption are one of the major factors. Looking into the healthcare system of various developed country we analyse that they all have a universal healthcare system and a universal Insurance system which is linked to a unique number for each citizen of their country. In this universal system health record of each individual is stored a single platform which can be viewed by doctor and the patient. Our aim through this project is to create a prototype of universal healthcare system where health record of each individual is stored which can be edited by a doctor and viewed by a patient. The primary key is the unique aadhaar card number which is different for each citizen of India. We also created an online symptom checker which aims to detect diseases based on the symptoms input.

Key words: Universal Healthcare System, Symptom Checker

I. INTRODUCTION

According to the Global Burden of Disease Study published in the medical journal The Lancet, India has finished a dismal 154th among 195 countries on the healthcare index lacking behind countries like Bhutan, Sri Lanka [1]. This shows that there is immense need of a Universal healthcare System. For implementation of Universal healthcare system we need a web based platform which is linked to the aadhaar card database which can be selectively accessed by doctors and the citizens. The stakeholder of the systems include the government, doctors and patients with a valid aadhaar card number. We tend to take the entire system of Government hospital online where patient need not carry any type of hard paper with them. The doctor can review a patient enter their problem, medication, Lab reports and results online which can be viewed by the patient. This system will create a centralized healthcare system. Apart from this we have also created a symptom checker where a user enters a symptom and the system tries to predict the disease. The aim of the creating a system checker for self-analyzing of the problem at a macro level. This entire system is created using web languages e.g. Php, JavaScript etc.

II. LITERATURE SURVEY

The number of internet user has increased on a huge scale. There are 460 million internet users in India, It is the second largest online market, ranked only behind China. By 2021, there will be about 635.8 million internet users in India [2]. Apart from it, the number of smartphone users in India is estimated to reach 299.24 million till 2020 [3] thus there will be immense use of various applications and functions of the internet.

To get more insight on the condition of Government healthcare of India we conducted an online survey via google form. The results are as shown below:

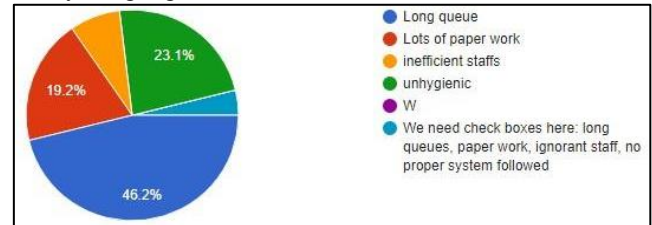


Fig. 1: Survey Result on Worst Thing about Government/Private Hospital

46.2% people considered that long queues is the major problem in government hospital followed by 19.2% people who think lots of paperwork is also a problem.

III. OBJECTIVE & SCOPE

The objective of this system is mentioned below:

A. Reduce Paperwork

The patient slip rather than being in hard paper can be online saved in this portal. Records like patient's history, his insurance, patient's doctor etc. Because this online portal there is minimalistic chance of data loss

B. Self-analysis of problem

The symptom checker which is the part of the system will help to detect your disease and help to have an insight about your problem.

C. Centralized Healthcare

Since data is accessed by unique aadhaar card number. We can store all information about a patient's history in a single platform which can be accessed by doctor and patient himself

D. Doctor reference

Since the platform stores lifetime record of a patient, the doctor before starting with the investigation from the scratch can view patient's old health record and refer to it.

IV. METHODOLOGY

One of the main reasons to create a symptom checker is that to teach medical facts to the patients so that they can relate how they feel with what happens inside their bodies.

A. Search Strategy for Symptoms

As the made symptom checker is majorly based in India, we created the database of those diseases which are largely faced by the tropical countries of the world like India. These diseases are also very public and happen in country like India on a large scale almost regularly during the period of one year or two. We have also discussed with the doctors of various institutes and hospitals about the diseases which are

majorly taken lightly by the patients or are treated poorly as their symptoms also shows signs of another diseases leading to the death of the certain patients. Hence, we have chosen those symptoms which are seem to be very minor but they are associated with those diseases which are very harmful and cause huge number of cases in countries like India. These symptoms include high fever, headache, fatigue, cough etc.

We have also taken other factors which affect and takes decisive role in determining about the disease such as body temperature, numbers of days of occurring fever, tiredness level, sex and age of the patient. By accumulating all the symptoms and the previous factors, symptom checker shows what may be the disease occurring to the patient along with percentage chances of that. We have also provided the feature of contacting the following doctor via mail after the evaluation of symptoms. The aim of providing the contact with the doctor feature is just simply to show the patient what to do next. Our symptom checker is not just like all the traditional symptom checker which shows the diagnosis of the symptoms but also shows about the next step what patient can take which is contacting the doctor as soon as possible.

B. Database Design

The database is designed simple so that all the query which are receiving at the server end is done quickly and efficiently. There are just two table inside the database first is 'symptoms' in which all the diseases are categorized according to the symptoms; second is 'doctor' in which all the doctor names and their email id are present along with the diseases they treat.

Covering all the diseases which effect majorly in India we have taken around 60 symptoms in the database.

C. Algorithm Design

Instead of taking one symptom at a time, patient can enter all the symptom which he is feeling at once. Other fields like body temperature, number of days of occurring fever, tiredness level, sex and age of the patient also take major role in determining the disease. Whenever patient enters symptoms, diseases which causes that symptoms are fetched from the database. This same function is repeated for all the symptoms which are entered by the patient. Then the diseases which is encountered many times by all the symptoms is taken. The percentage calculated for that disease i.e., chances of having that diseases is calculated by multiplying the number of symptoms added by the patient by 100 and dividing that number with the number of the symptoms matched with that particular associated disease. Then this whole number is further divided by the number of total symptoms which are stored in the database associated with that particular disease. Other factors like age and sex of the patient do play role in determining the disease like taking an example of arthritis, the disease like arthritis is more common to the elderly age women of the society informing symptom checker that there are more chances of that disease in women if entered symptoms are indicating it.

V. RESULT

A prototype of the universal healthcare was implemented which has all the functionality as conceptualized. Symptom checker function is added in which a patient can enter their symptoms to get details of the corresponding disease they might be suffering from.

VI. CONCLUSION

We plan to take this project to various government organization so that we can team with them and take this project on a further level. Through this portal we try to deliver a universal healthcare solution so that people can access their health information online. In future we aim to integrate various health insurance to this portal.

Some screen of the system



Fig. 2: login Page of the System

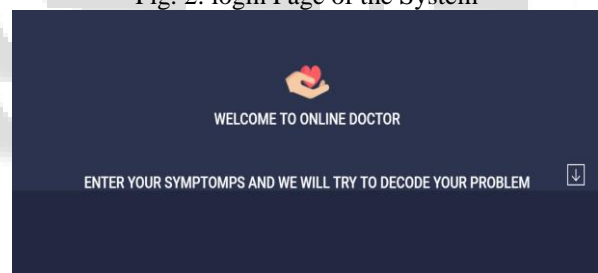


Fig. 3: Symptom Checker Screenshot

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REFERENCES

- [1] Pete Read, Indian startup aims to make e-health records available to patients, Global Growth Markets, July 2015.

- [2] Smart touch to medical records, Times of India, March 2009.
- [3] Kenneth Thorpe, Universal healthcare: Here is the way forward for India. Finance Express, May 2017
- [4] Dr. Suraj Pathak, healthcare technology of India, Blogspot, June 2017
- [5] William Stalling, Healthcare in India, New York Times, May 2014

