



E-health care system

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ABSTRACT

Contrasted with different nations, India has moderately low wellbeing index. This is because of the discovery of many composite disorders examples every day. Of the numerous practices, one approach to take care of this issue is to utilize the Smart Health idea, which empowers observing of wellbeing state of patient by medicinal services organizations, to avoid infections. There have been several researches regarding the observance of wellbeing of patient. A large portion of them concentrate just on the perusing and perception of sensor information, yet the management of information including information storage, preparing and coordination among framework, patients and human services establishments are not grown until now. This research study suggest a plan of wellbeing observing framework named Heacam (Health care monitoring), an application to observe patient health state and to counteract maladies as right on time as could be expected under the circumstances. Heacam comprises of three subsystems: web application, database storage and API plan, and versatile framework on android stage. In any case, this study will just concentrate on the structure and advancement of the web application. These analyses comprises of three fundamental viewpoints: framework structure, implementation and testing. The framework will be created utilizing Rational Unified Process (RUP) system. At last, this examination will lead to a web framework to be utilized by users.

Keywords: Smart Health, E-Health, M-Health, Health Monitoring System, Mobile Application, Android

1. INTRODUCTION

Health is one of the worldwide needs since it ends up as one of the crucial element that impact the financial growth and the comfort of a nation, for all, developing and economically developed nations. Reality is that still, India as one of the fast developing nations has a low health index contrasted with different nations. The low dimension of wellbeing in India is brought about by a various variables, one of which is the disease behavior that turns out to be difficult to understand.

Alongside with the advancement in the field of technology, several attempts have been made to help Health enhancement had been done, including development of the idea of Smart Health. SmartHealth is another way to deal with wellbeing

checking process utilizing trend setting innovation comprising of brilliant gadgets, or ordinarily called smart methodology, to beat medical issues. In actuality, the idea of brilliant wellbeing, e-Health, and m-Health can't be isolated. This study concentrate around the structure and improvement of portable framework as a major aspect of wellbeing data framework named as Heacam (Health Care Monitoring). Heacam is planned with the objective of helping specialists in observing patient's wellbeing state and avoidance of ailment as ahead of schedule as could be expected under the circumstances. The application to be created is a web application and is going to be utilized by patients.

While utilizing this framework, patients can enter the symptoms or health condition dependent on the disease they are suffering. Likewise, patients can likewise see the Health condition improvement in a graphical structure. The healthreports that can be seen include the symptoms that the patient is suffering plus the specialist the patient should refer related to his diseases. In the event that these health conditions pass the edge esteem set, framework will offer notice to the specialist for further correspondence and encourage the patient to check his/her health state in a clinic or hospital. Framework likewise encourage patient to demand medicinal checkup by on the web and see restorative medications given by the specialist to the disease.

2. LITERATURE REVIEW

Adapting good health is an idea adjusted from the advancement of data innovation and correspondence in wellbeing area that indicates the idea of online health framework [1]. Digital-health system is an area that shows up as combined points of medicine, business and general health of public. E-health includes to the health organizations developed or updated data through web and other resources. In a more extensive angle, e-health not only has the aspects in specialized advancement, but it also includes the state of mind and also committed to worldwide reasoning and associated for improving health administrations [2].

Following e-health advancement, next idea emerges because of the general utilization of cell phone, which is portable for wellbeing [3]. It is an idea that emerges from the utilization of cell phone in better health part, or especially, providing health facilities through versatile specialized gadgets [4]. While health care's system provides the health facilities by utilizing

the network and resources of our city. Clever health system is a chunk of digital-health. However dependent on the data and correspondence innovation in smarty city. While executing, the idea of keen wellbeing, Digital- health and Mobile-health can't be segregated [5].

The execution of smart wellbeing is an idea in India started with the usage of Digital-health and Mobile-health idea after many surveys, one done by Triantafyllidis [6] who planned and built up a health care system that autonomously encourages person's health checking of incessantly sick patients. Patients can see their health conditions utilizing the introduced sensors, record the status of health conditions by entering extra data notwithstanding sensor information, and send it to online networking from their locality.

Hendrata [7] planned and built up an android- based electrocardiograph health monitoring framework, built on pulse rate to check the heart condition. The framework is made through structuring an incorporated compact electrocardiogram gadget [8] with cell phone gadget. The gadget works by catching the heart motion through anodes, at that point enhanced and separated, and filtered in a microcontroller to acquire the pulse parameter as an indication of heart exhaustion. Structural health monitoring system includes different types of sensor used to check the condition and safety of the framework [9]. Structural Health monitoring is a broad field and it can potentially identify the damage in a system [10]. The execution is as yet restricted to the way toward reading and analyzing information from sensor, not yet covering the information in the board procedure, beginning from storing data, handling till the coordination among the systems, patients and medical specialists.

3. METHODOLOGY

3.1 Research Flowchart

This study concentrates on the implementation of Heacam framework. The flow of this study begins from literature review and ends with report documentation. The flowchart of this study can be seen.

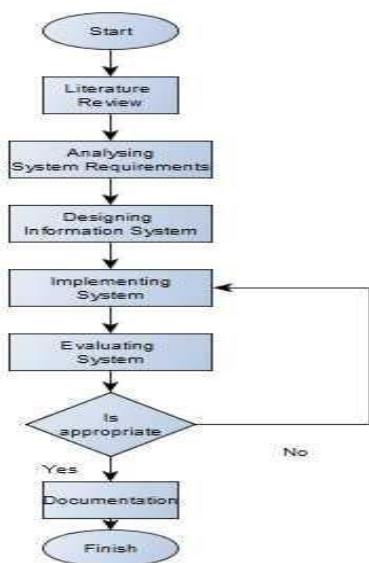


Fig. 1: This Figure Depicts Work flow of the proposed System.

3.2 System Concept

Clients of this framework are partitioned into 3 gatherings; they are patients, specialists and wellbeing staffs. Specialists and wellbeing staffs can get to the framework using a site

utilizing Internet surfer, just as wellbeing staffs. Patients get to the framework with the help of a webpage. To get to the framework, clients must be associated with web arrange. In this framework, a client hasn't to straightforwardly however through a solicitation made database. Programming interface is utilized to get information from source about infection and determination of manifestations given by the client and place it inside a database, and furthermore to associate the database with patient application. Framework design can be seen.

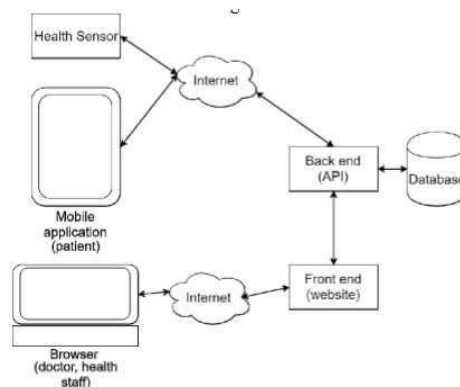


Fig. 2: This Figure depicts the architecture of the proposed System.

3.3 Use Case Diagram

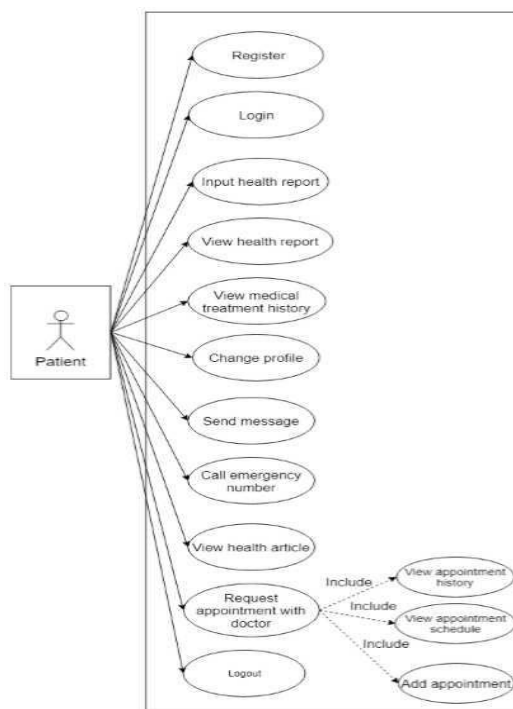


Fig. 3: This Figure describes about the Use

Use case graph is utilized to figure out what type of clients can utilize the application and what is possible for the clients to do to the created framework. For the web framework subsystem, there will be patients who act as a user for this application can use the various features provided by this application. For example, register, a functionality to make a record for patients who haven't used this application even once; login, a functionality to enter the server of the system after a account is made; provide the symptoms, a component to include patient's health condition; view of disease and specialist to concern, a functionality to see the disease related to the symptom; see medicinal treatment history, an element to see what medications have been done by the patient; profile be changed, an element to modify patient's personal data; send email, a

feature to email to specialist; search medicine, a component to get the medicine of disease of your own choice; read health related article, an functionality that gives news related to advancement in health sector; demand meeting with specialist, a functionality to make a meeting with specialist without going to the therapeutic facility or emergency clinic. Use case outline structured as the reason for building up the data system can be seen. Case Model of the proposed System. It shows the interaction between system and the user

3.4 Application Interface Design

In reference to the flowchart plan from different UML outline, functionalities in this application are divided into a few sections; for example, provide symptom, expected diseases from the symptoms provide, functionality of fixing an appointment with the doctor, read the health related article, send messages to doctor or searching the medicine for the disease. To have the capacity to utilize these functionalities, patients or clients need to go through login procedure first. If the patient does not have an account he or she should use the register component to get them registered. To fulfill these requirements an interface will be needed. Rough sketch of one of the interface design for the webpage is shown in Fig. below.

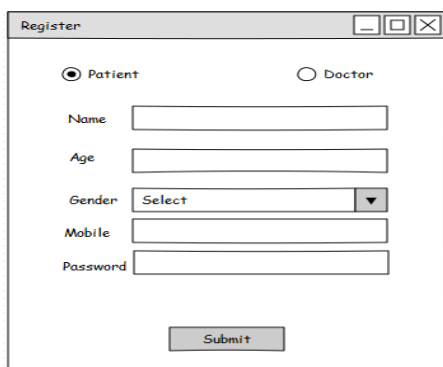


Fig. 4: This Figure is an example of one of the interface design

4. RESULT

Consequence of this research is a webpage, which can be utilized by patients. The assessment of the web application configuration utilizing black box assessment approach, by testing a few experiments and approving if the yield consequence of the test is of course or not is certain. For register highlight, the normal outcome is the application can make a record that does not have indistinguishable username to different records. For login include, the normal outcome is patient can utilize the application after entering the credentials. For viewing health condition include, the normal outcome is patient can pick part of body and information its condition to framework database.



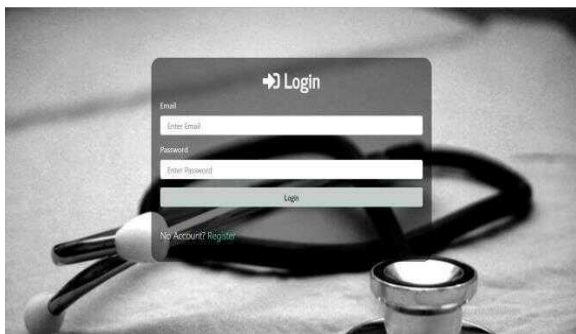
Fig. 5: This Figure shows the Home page.

For view wellbeing report include, the normal outcome is the application will demonstrate a realistic that contains data of patient's wellbeing condition advance. For solicitation meeting with specialist include, the normal outcome is the application

can make a physical checkup plan. For view arrangement plan highlight, the normal outcome is patient can see data about next physical checkup plan. For view restorative medications highlight, the normal outcome is patient can perceive what medicinal medications and guidance from specialist. For view of health related article highlight, the normal outcome is the patient can get to general data or news related with health sector. For view message from specialist include, the normal outcome is patient can peruse message sent by the specialist and answer the message.

Table 1: Test cases

S.N O	TEST DESCRIPTION	TEST PREREQUISITE	TEST INPUTS	TEST RESULT
1.	Signup page	Click signup button on home page	Name, email, password, confirm password	Passed
2.	Login page	Click login button on home page	Username and password	Passed
3.	Symptom page	Click on the input box	Enter the symptom and click submit	Passed
4.	View doctors	move the cursor on icon search doctor	click on icon search doctor	Passed
5.	Choose doctor	Click on the search bar to find the doctor	Doctor Name or specialization.	Passed
6.	Apply for appointment	Move the cursor on apply button	Single-click	Passed
7.	Confirm appointment	Click on apply button	date ,time and click submit	Passed
8.	View history	Move the cursor on icon history	Single click	Passed
9.	Delete appointment	Move the cursor on delete button	Single-click	Passed
10.	View contact page	Move the cursor On icon contact	Single-click	Passed
11.	Chat with doctor	Click chat button	Enter your issue.	Passed
12.	logout	Move the cursor to the icon logout	Single-click	Passed



5. TEST CASE REPORT

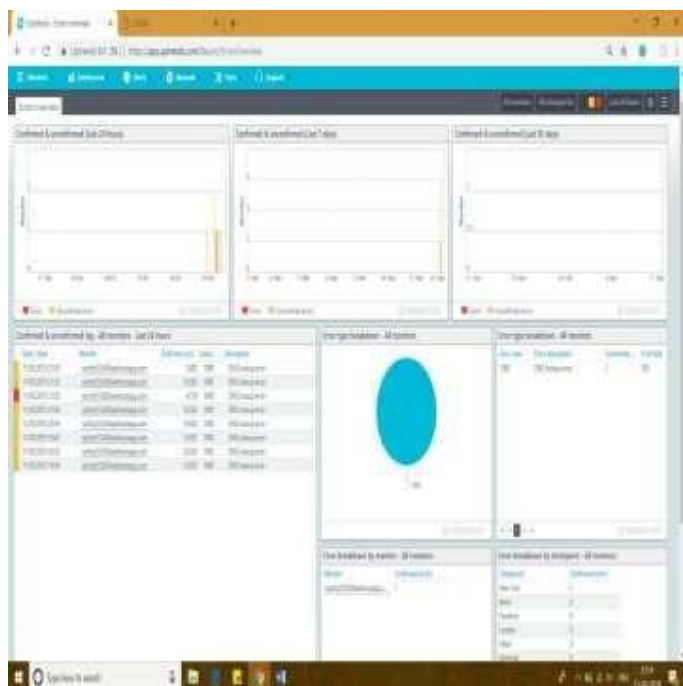


Fig. 6: This figure shows the result of the test case analysis

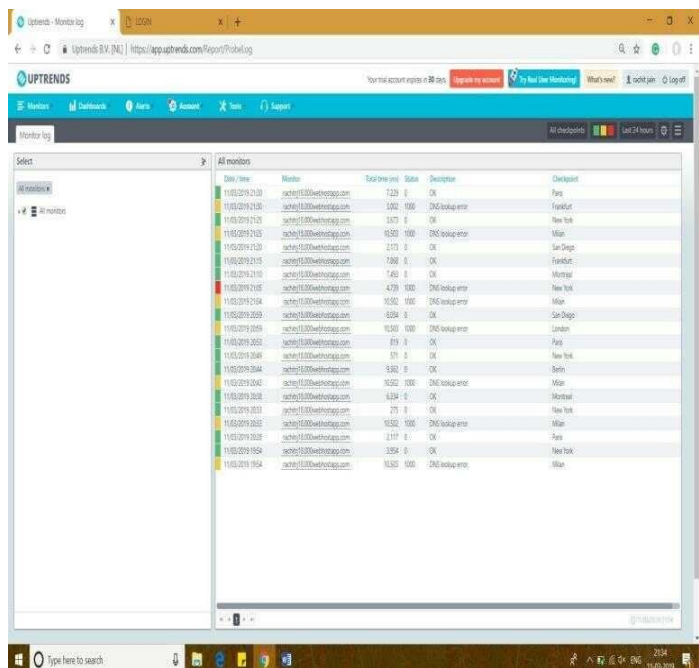


Fig. 7: This figure shows the overall performance of the proposed application.

6. CONCLUSION

The reason for this research is to build up a health information application that can give patient health related issue data to the health workers utilizing android stage and to assist patients with scheduling meeting with specialists. In light of the examination that has been done, we can reason that:

A web-app has been created to screen health state of the patient and provide report to the patients as ahead of schedule as could be expected under the circumstances and to improve health administrations.

The created web application has 11 functionalities, they are user signup, login, provide symptoms, see expected diseases and the specialist, fix meeting with specialist, see appointment schedule, search medicine, see health related article, send or receive message from specialist, call doctors and logout functionality. All highlights in the web application are completely working and have been verified with black box testing technique.

7. REFERENCES

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