PATIENT HEALTH MONITORING SYSTEM FOR RURAL AREA

Kandekar Ravindra Kailas, Barve Sachin Chandu, Jyoti Thakur.

Department of Computer Technology Shatabdi Institute College of Engineering (Pune University) Nasik, India

ABSTRACT

The applicability of an E- Health Solution that improves healthcare delivery settings in the rural parts of the developing world and discusses a proposed patient-centric E- Health Solution that suits the rural setting is the main objective of his project. The main benefit of implementing such an E-Health Solution is that it ensures the availability of the Specialist across a distance at many E-Clinics within the shortest possible time frame. Some of the important features supported by this solution are: prediction of disease that might be required for diagnostic decision making by doctors, seamless work without much technical dependency (without maintenance); affordable, adequate and accessible solution for patient care management system.

Keywords: - *Data Mining, E-Solution; Electronic Medical Records; E-Clinic; E-Consultation; E-ClinicManagement Centre*

I. INTRODUCTION

1.1 Introduction to System

In this we are going elaborate introduction of the proposed system. This chapter includes overview of the system, motivation and objective of the system. This chapter also explainthe how the report is organized.

1.1.1 Overview

Patients in rural areas incur heavy expenditure in travelling long distances spending a lot of time consulting Specialists in cities due to the lack of Specialists in their areas. This issue can be addressed by an e-Solution that makes appropriate use of Electronic Medical Records (EMR) and Telemedicine technologies which enables the patient to consult a Specialist through e-Consultation. Healthcare delivery setting in rural parts today exposes limited access to highly specialized consultancies. Patients in rural areas have to travel long distances to consult a Specialist in an urban area. This entails a huge amount of cost, time, and inconvenience, especially in the elderly, post-operative, and re-convalescing patients who have received specialized treatments. In rural areas patient's medical records are stored in the record rooms of the hospitals where they are ordered and managed manually. When a patient visits the clinic it is necessary to go through all the records to find the relevant record which imposes delay to the process. The patient records are piled up for searching for a particular record when a clinic is about to start. This problem could be addressed by connecting the Patient and the Consultant through a web-based Electronic Medical Record (EMR) system. The use of electronic medical records would also help manage patients' medical records more efficiently. The applicability of an E-Solution that improves healthcare delivery settings in the rural parts of the developing world and discusses a proposed patient-centric E-Solution that suits the rural setting. The main benefit of implementing such an E-Solution is.
That, ensures the availability of the Specialist across a distance at many E-Clinics within the shortest possible time frame.

1.1.2 Motivation

E-health facilitation of disease management has potential to increase engagement and effectiveness and extend access to care in rural areas. The main benefit of implementing such a solution is the availability of the Specialist across a distance at many e-clinics within the shortest possible time frame. Patient's travel expenditure, travelling time are drastically reduced. Specialists can treat patients in any part of the country giving wider access to patients all over the country. Decision making is easier since a holistic view of the patient's medical information is available through the system. Medical reports serve the administrative purposes of the hospital. Knowledge transferring could happen between the AryogyaVibhag (Jr. Doctor) and Doctor where the AryogyaVibhag (Jr. Doctor) can provide his ideas and suggestions to the Doctor while there is also a great potential for clinical research as data is stored electronically. The AryogyaVibhag (Jr. Doctor) decides whether a patient is eligible to be reviewed in the system for consultation based on the criticality of the patient's state. The patient needs to get themselves registered and give symptoms.

II. LITERATURE SURVEY

1) S. Vijaya Shetty, G. A. Karthik and M. Ashwin, "Symptom Based Health Prediction using Data Mining," Taking certain prominent symptoms and their diseases to build a Machine learning model to predict common diseases based on real symptoms is the objective of this research. With the dataset of the most commonly exhibited diseases, the authors built a relation to predicting the possible disease based on the input of symptoms. The proposed model utilizes the capability of different Machine learning algorithms combined with text processing to achieve accurate prediction.

2) G. G. Warsi, K. Hans and S. K. Khatri, "IOT Based Remote Patient Health Monitoring System," Remote patient health monitoring system is an IoT device which could be used with patients or elderly at our homes whose real time health readings such as temperature, blood pressure and electro-cardiogram could be monitored remotely on a hand-held device. This IoT device will automatically send an alert to the users in case of an emergency which in this case would be fluctuation of the readings of the sensors beyond the normal range. This device is built using a thermometer, electro-cardiogram sensor and sphygmomanometer attached to an Arduino which transfer its data to servers using a Wi-Fi-module. The servers then compute the data which can be displayed on handheld devices. In case the values received from the sensors are outside the normal range then an alert will be sent to the user from the server.

3) Authors Madhu J. and Narasimha Raoin this project have attempted to solve a healthcare problem currently society is facing. The main objective of the project was to design a remote healthcare system. It comprises three main parts. The first part being, detection of patient's vitals using sensors, second data to cloud storage and the last part was providing the detected data for remote viewing. Remote viewing of the data enables a doctor or guardian to monitor a patient's health progress away from hospital premises.

4) In this paper, a portable physiological checking framework is displayed, which can constantly screen the patient's heartbeat, temperature and other basic parameters of the room. We proposed a nonstop checking and control instrument to screen the patient condition and store the patient information in a server utilizing Wi-Fi Module based remote correspondence. A remote health monitoring system using IoT is proposed where the authorized personnel can access these data stored using any IoT platform and based on these values received, the diseases are diagnosed by the doctors from a distance.

5) Authors Fraser HS, Biondich P, Moodley D, Choi S, Mamlin BW, Szolovits discuss pilot projects demonstrating that such systems are possible and can expand to manage hundreds of thousands of patients. We also pass on the most important practical lessonsin design and implementation from our experience in doing this work. Finally, we discuss the importance of collaboration between projects in the development of electronic medical record systems rather than reinventing systems in isolation, and the use of open standards and open-source software.

III.   PROBLEM STATEMENT

Local pharmacies are selling medicine with or without prescription from the doctors. So the abuse of selling medicine that affects the general people suffering different diseases and young generations getting addicted which spread out over the country.

Most of the doctors prescribe medicine on a hand written prescription paper and giving suggestion to make the laboratory test to the patients to verify their diseases.

Mostly, patients lose their previous prescription and also the laboratory test report which will create problem to doctors to verify their previous diseases and to make decisions.

IV.   PROJECT REQUIREMENTS

4.1 SYSTEM ARCITECTURE:

The rural e-health system is a web app which can be helpful for people in rural areas, as they do not have access to good medical facilities. In this age of digitalization, this means is put to use and can save lives. For detection of disease data mining technique is used. SVM algorithm is used. In the system, the admin can add doctors including specialty's view and delete doctors. He can add, view and delete Aarogyavibhag. The AarogyaVibhag Jr. Doctor can add patient and their details like their symptoms. He can search for specialist doctor and detect disease, view allocated doctor and chat with him and view the prescription. The Senior Doctor will be in contact with the AarogyaVibhag Doctor. He can view the allocated patients, view their symptoms and system detected diseases. He can chat and submit the prescription to the Aarogya Vibhag Doctor. The patients of rural area will be heavily benefited by the rural e-health system.
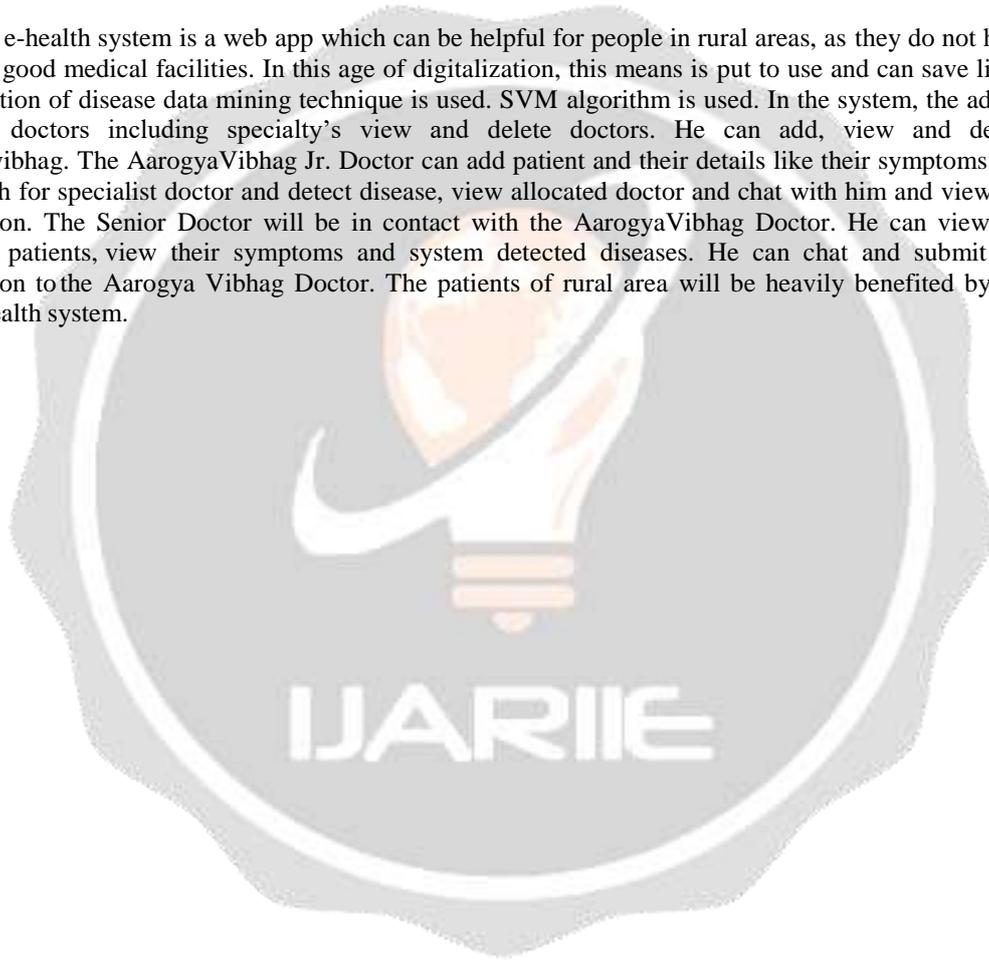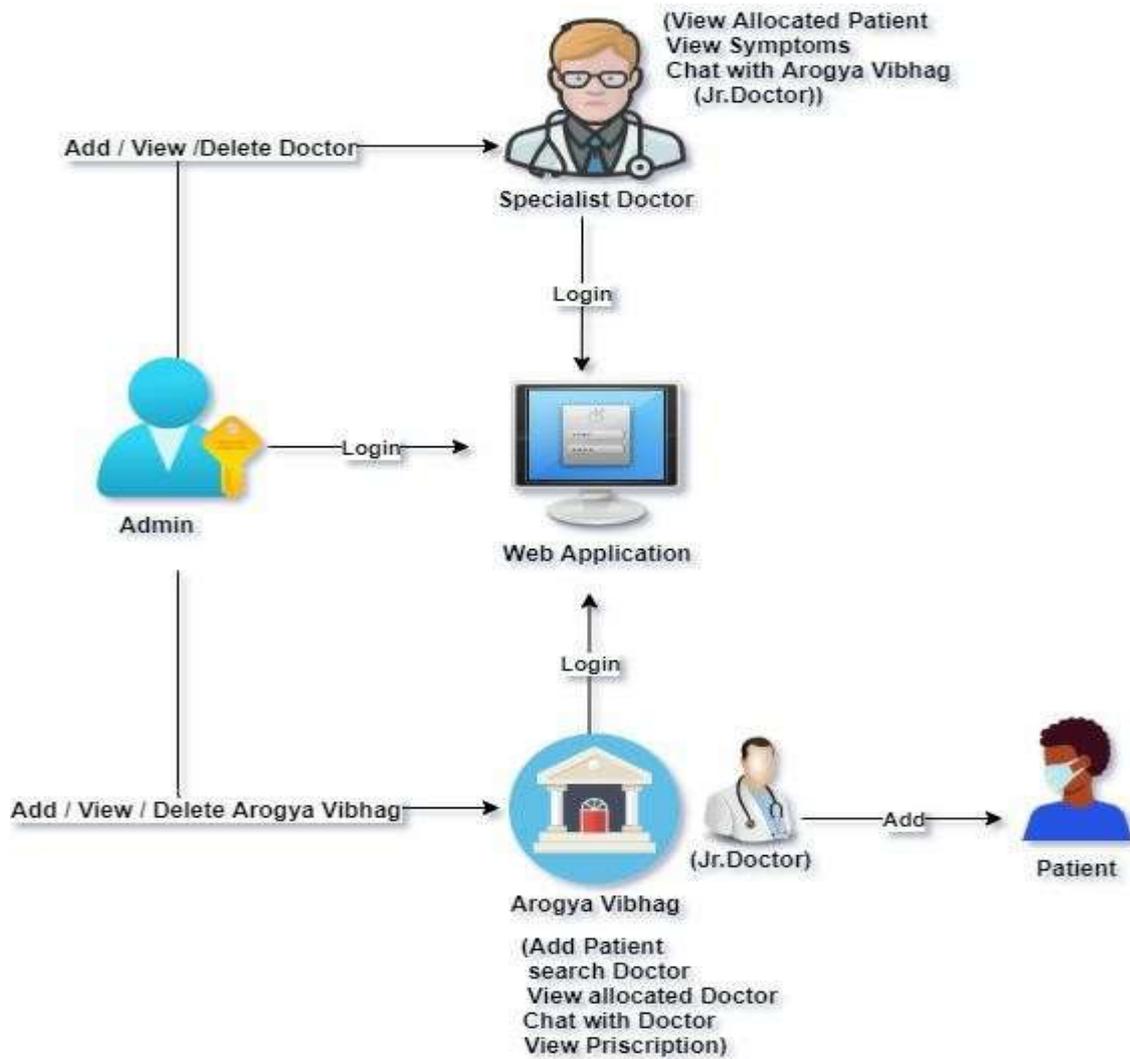
(Fig 4.1 System Architecture)

V. RESULTS

The main objective of Rural health system is to cross the geographical barriers and provide healthcare facilities to rural and remote areas (health for all), so it is beneficial for the population living in isolated communities.

Rural Health system VS another System
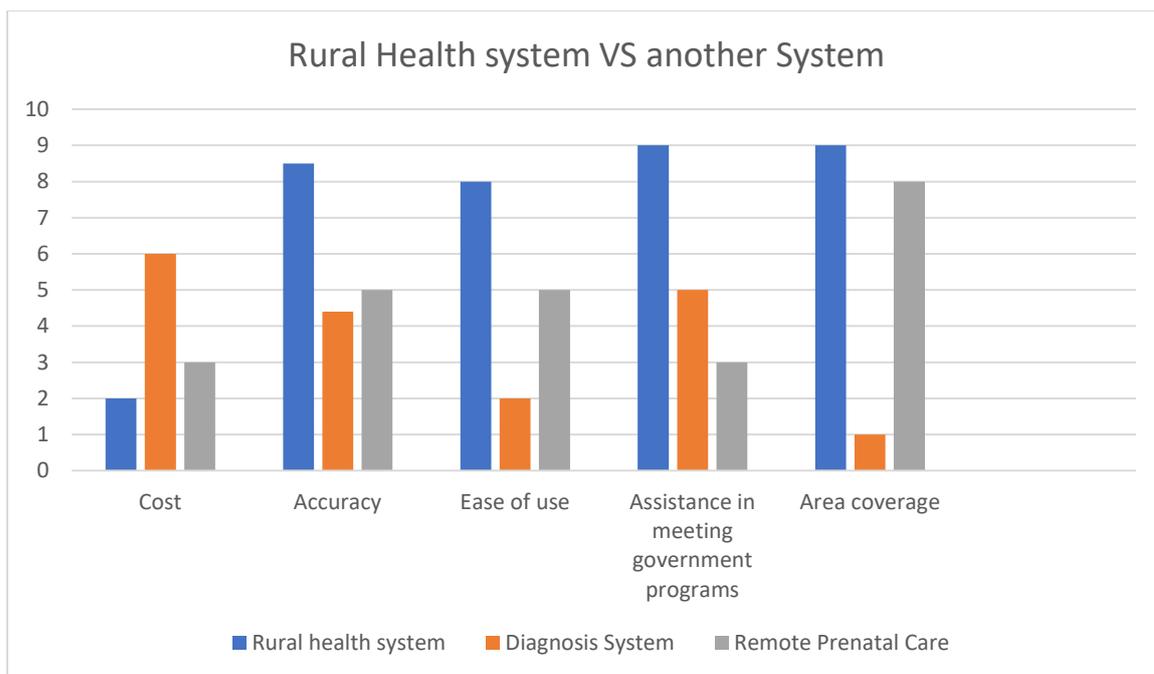
5.1 Experimental Setup Requirement for project

Sr.No.	Hardware Component	Component Description	Quantity
1	Personal Computer	Min 1GB RAM, 50 GB Hard Disk	1

Table 5.1.1: Hardware Requirement

Sr.No.	Software Component	Component Description	Quantity
1	MYSQL	IDE 8.0.1	1
2	Wamp	Server	1

Table 5.2.2: Software Requirement

Sr.No.	Client Component	Component Description	Quantity
1	Browser	Firefox, goggle chrome	1

Table 5.3.3: Client Requirement

5.3 Testing Strategy

Testing Strategy used for testing the system are as follows,

1. Unit Testing

2. Classification Testing

5.3.1 Unit Testing

In case of unit testing, each software component, software modules or software subsystem is tested independent of any other components involved in the whole software system.That is individual software modules or software components are tested in unit testing. The main agenda behind unit testing is to verify and validate each and every unit of the software system by checking its working

and performance and comparing it with the software specification. The significant control paths are tested and verified to discover errors within the boundary of the module and the component level design used for the same.

5.3.2 Classification Testing

Classification testing is testing in which we test the classification of data with the help of algorithm. After successful execution of unit testing, software subsystem will be collected together and combined together in order to build the whole software system as it is specified and define at high level design.

VI.   SCREENSHORT

6.1. Login Module

(Fig 6.1 Login Module)

6.2 Admin Login Page
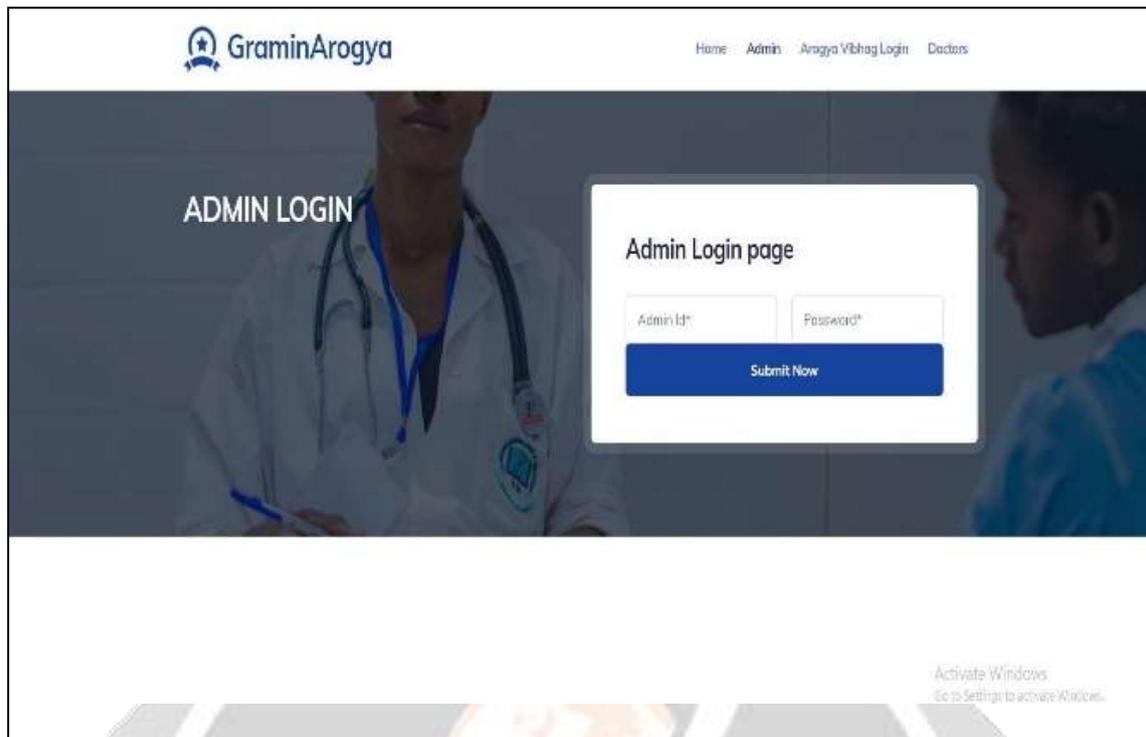
(Fig 6.2 Admin Login Page)

6.3 Admin Page
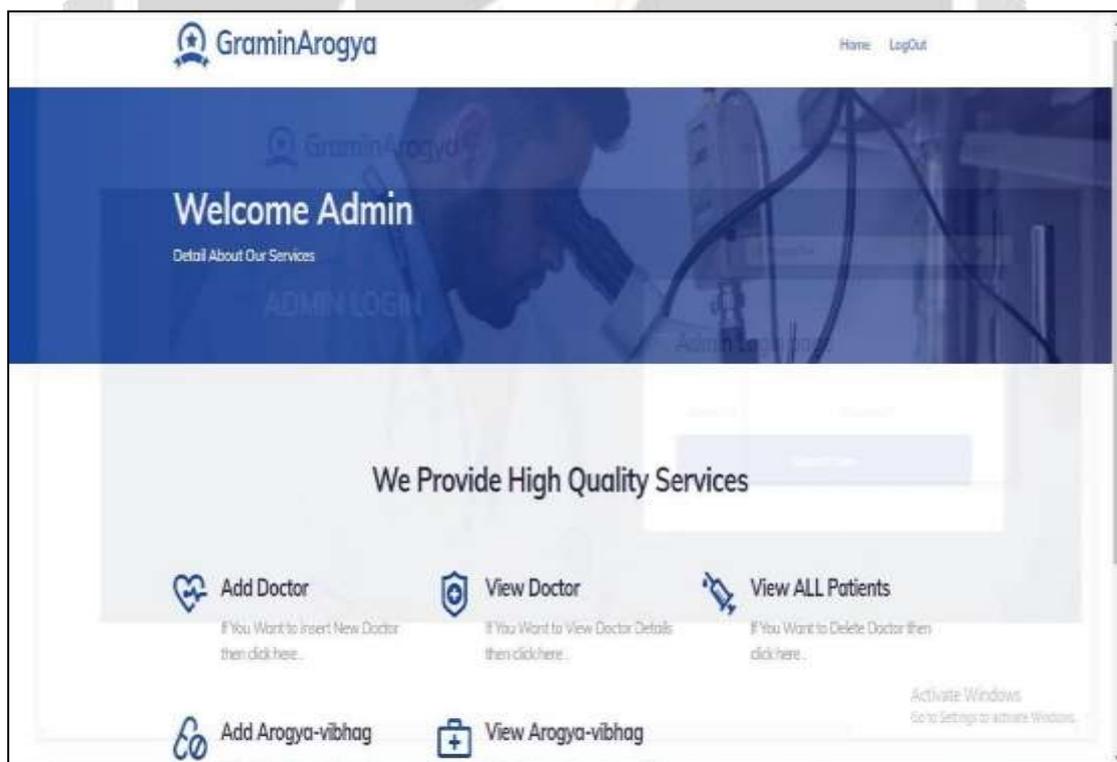
(Fig 6.3 Admin Page)

6.4 Admin Can Add Doctor
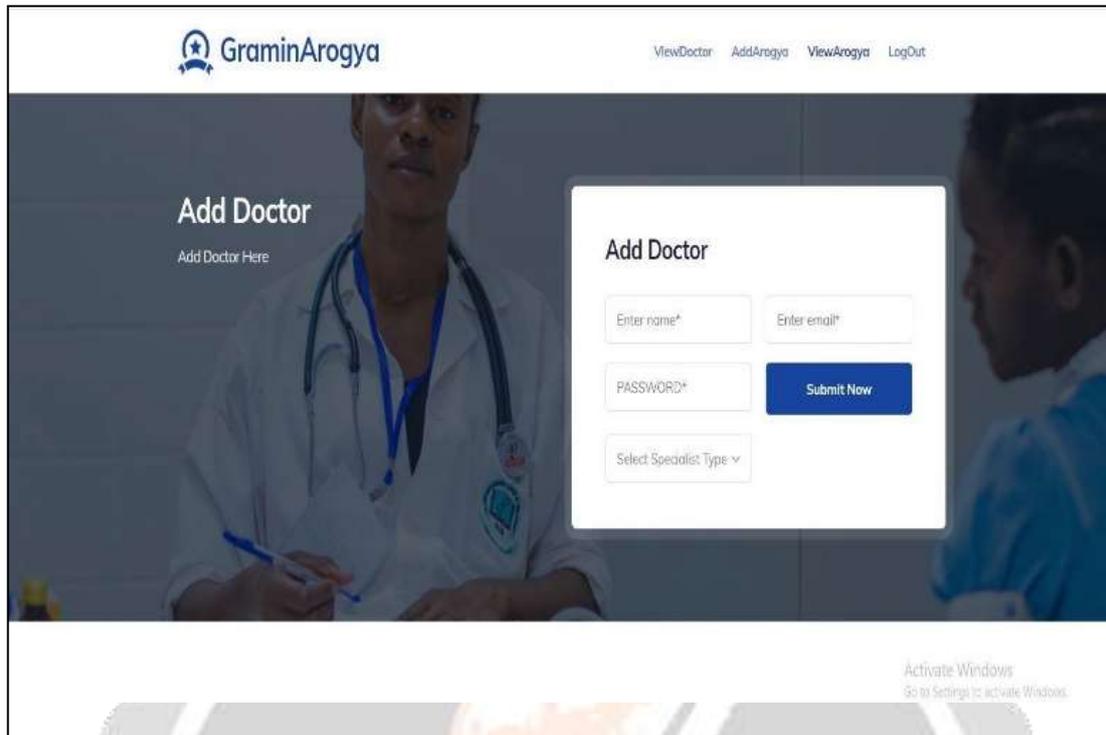
(fig 6.4 Admin Can Add Doctor)

6.5 Doctors Add Successfully
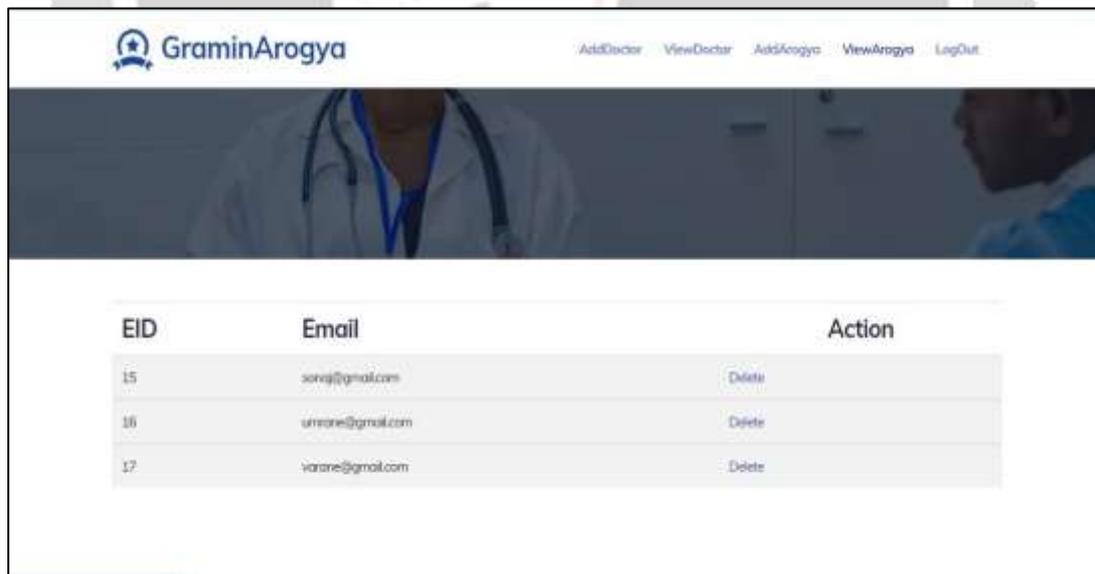
(Fig 6.5 Doctors Add Successfully)

6.6 Doctor Login Page

(Fig 6.6 Doctor Login Page)

6.7 Doctor See Allocated Patients

PID	NAME	Age	BP	Diabetes	Temp	Weight	Disease	PreDisease	Prescription	Comme
1	Yuvraj	23	120	diabetes	98	55	anemia	[anemia]	Add Prescription	Add Comment
2	samadhan	23	89	Yes	78	45	anemia	[anemia]	Add Prescription	Add Comment
4	Nilesh	45	56	Yes	78	90	anemia	[anemia]	Add Prescription	Add Comment

(Fig 6.7 Doctor See Allocated Patients)

6.8 Arogya-vibag Login

(Fig 6.8 Arogya-vibag Login)

6.9 Arogya-vibag Add Patient Successfully

(Fig 8.7 Arogya-vibag Add Patient Successfully)

VII.   CONCLUSION

A detail description of the E-Solution as a proof of technology which was developed to support the problems prevailing in the current healthcare settings in rural areas. It shows the significance of implementing an Electronic Medical System and about the system architecture, application design, technologies used and how the system model should be optimized to suit the conditions considering the critical issues, challenges and security constraints as well. It is concluded that this is a promising solution that facilitates health consultations in rural communities of developing Countries with less Cost, Travel Time and Travel Distance making a healthy population that will in turn catalyze the global development process.

VIII.　　REFERENCES

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