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Ubiquitous Life Care Integrates Wireless Sensor Network And Cloud Computing With Security

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Abstract - The world we are living today is surrounded with different types of diseases so people started showing a great care for their health. This makes a rapid growth in healthcare systems. Ubiquitous life cares are attracted by people as they monitor patient health at home and at any time. In our proposed system Ubiquitous life care integrates wireless sensor networks with cloud computing and they also provide security to the data's on cloud. So it provides users with good care, reduces the cost and assures security.

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Ubiquitous Life Care Integrates Wireless Sensor Network And Cloud Computing With Security

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I. INTRODUCTION

Now a day's people are showing more care and interest in their health and how to lead a healthy life with good life style. That is why there is a rapid increase in healthcare systems. Cost spend on healthcare is a big topic in all people in all countries.

Ubiquitous life care i.e. U Life Care are becoming more famous, interesting and attracted for researchers as they provide less cost with high quality at anywhere and at anytime. They monitor health at home. U Life Care are used for monitoring health of human and their activities and they share these details i.e. information among doctors. The quality and coverage they provide are really good.

Wireless sensor network is an emerging field and now becoming very attractive. They combine sensing, computation, and communication. Now a days these sensors come in many forms. They are very tiny so that these sensors can be inserted into a hand ring that these type of sensors are known as ring sensors and if they are inserted into a belt they are known as belt sensors and these sensors are prepared with less cost. Wireless sensors use Mesh networking protocol so that the connectivity they provide is really huge. The power of these sensor networks lies in the skill to organize large numbers of tiny nodes that assemble and configure themselves. In this project we use these sensors to monitor the health of patients.

Cloud computing technology has been derived from many different technologies like grid, virtualization and IT management. Cloud computing is becoming more concerned and they will definitely modify the future. They have really attracted the clients. A small and medium enterprise gets benefited because there is no necessary to employ any special IT team. Cloud computing is concerned with resource sharing in distributed organization. There can be any number of

users i.e. participants who are really interested in participating in cloud and users are allowed to join and leave dynamically. These clouds offer many good benefits to the users. Cloud computing is considered very important as they provide dynamic resource sharing over internet. They also provide cloud computing infrastructure such as CPU capabilities, network and storage, they provide good infrastructure for many services and life care services are becoming very powerful through cloud computing. Cloud computing provides life care with a high throughput and by reducing the cost. But the main drawback comes in the form of threat to privacy and security issues. There is also a fear of control loss of data. So security is now a very big issue in cloud computing. Through this paper, we present and pay attention to this problem and use some sort of security which are used to work for the protection of cloud i.e. protecting the data or information on cloud.

II. RELATED WORKS

Author in [1] has focused on Human Activity Recognition Engine (HARE). HARE is a component which are used to provide real time data management, to human activities are detected and to manipulate the detected activities using ontologies. Here they have used Context information. HARE has been deployed for an Alzheimer's disease patient and they have made this with five different modules for activity recognition. HARE is made up of various components like Location Tracking, Activity Recognizer, Schema Mapping and XML Transformer and Activity Manipulation Engine which are used for tracking, recognizing, to transform the activities and to make decision. The experimental results were made and they have given achieved. But they have used this HARE only for Alzheimer's disease patients that is they have practiced only in this domain.

Author in [2][3] has presented an integration of wireless sensor networks and cloud computing for U-life care. Where the sensors monitor the health of the patient and the also the activities of the patient. These information are given to cloud and these information's are being shared by the doctors in cloud. The author has added some benefits by integrating the sensors and cloud computing. He has also explained about the existing system where the monitored data are not maintained in cloud instead in a centralized server and that is considered to be unsafe. So here the

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authentication and access control are being used. Even here they have restricted this project to some domains only.

Author in [4] present detail about patient monitoring and the importance of that in current world. These monitoring are done under the cloud based telecare system. This type of system are really attracted by aged and people. People status are classified as static state and moving state. Strategy are classified as fully active, semi active and passive active. Medical Call Center(MCC) play a good role where it act as interface between the patient and medical staff and they are used for detecting the status of user continuously. the author has even added some of the clouds like hospital cloud and national cloud. The components related to this paper are E-house and mobile device and related software module. The added advantage to this is that they are applied to both fixed and mobile healthcare. The major drawback is that the author has not specified anything about the security of the data's.

III. PROPOSED SYSTEM

Lets consider a scenario where some XXX hospital has introduces a new medicine for some YYY disease and they have used this medicine to a ZZZ patient and this patient has been monitored continuously using wireless sensor which monitor the patient and sense his health condition and see whether that medicine is really working .the sensed data i.e the reports are being send to the hospital by uploading to the cloud.the hospital and the doctors doesn't want to

disclose about this medicine to the world.since these reports are now in the cloud some other hospital also have the chance of looking at these reports and even they can even try these to their patients .so inorder to avoid these kind of problems ,we propose an idea where the reports being uploaded by the patient on the cloud and the same reports being downloaded by the hospital or the doctor that is both the patient and the doctor who want to access the reports has to be authenticated.

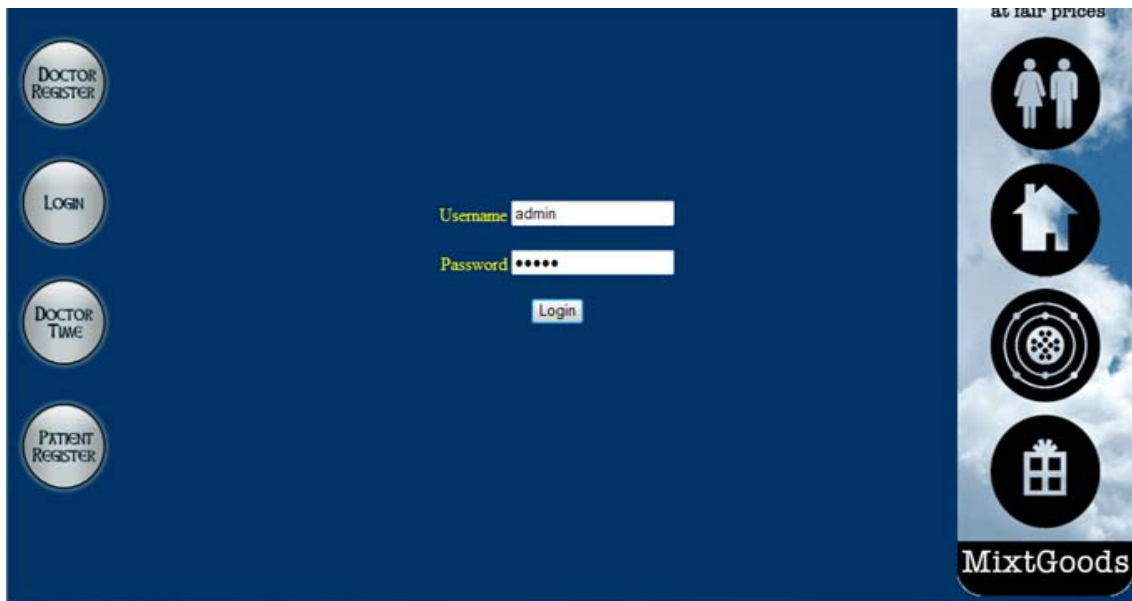
IV. METHODOLOGY

For proposing this idea the software requirements are Windows Operating System 7, JDK 1.6, JavaFX 1.3, XAMPP and MySQL.

A sensor captures all the activities of the patient and these datas or the reports are being transmitted to the cloud that is they upload these informations on cloud and if there is any noise data then they are filtered.now if the doctor want to access the data on cloud then he must be authenticate and permission must be granted so that he can access those reports being uploaded.

To access data on the Cloud, the user must authenticate and granted access permissions. When doctors, nurses want to access data, they must authenticate themselves first. After successful authentication, the Access Control module makes decision whether his/her access permission is allowed or not. If yes, it allows him/her to access to the Cloud data. Data is forwarded to authentic nurses and doctors.

V. RESULTS AND DISCUSSION



In fig.1 the admin login by using his username and password



Fig.2 shows Doctor registration. Doctor register by using his name, password, gender, date of birth, address and mobile number

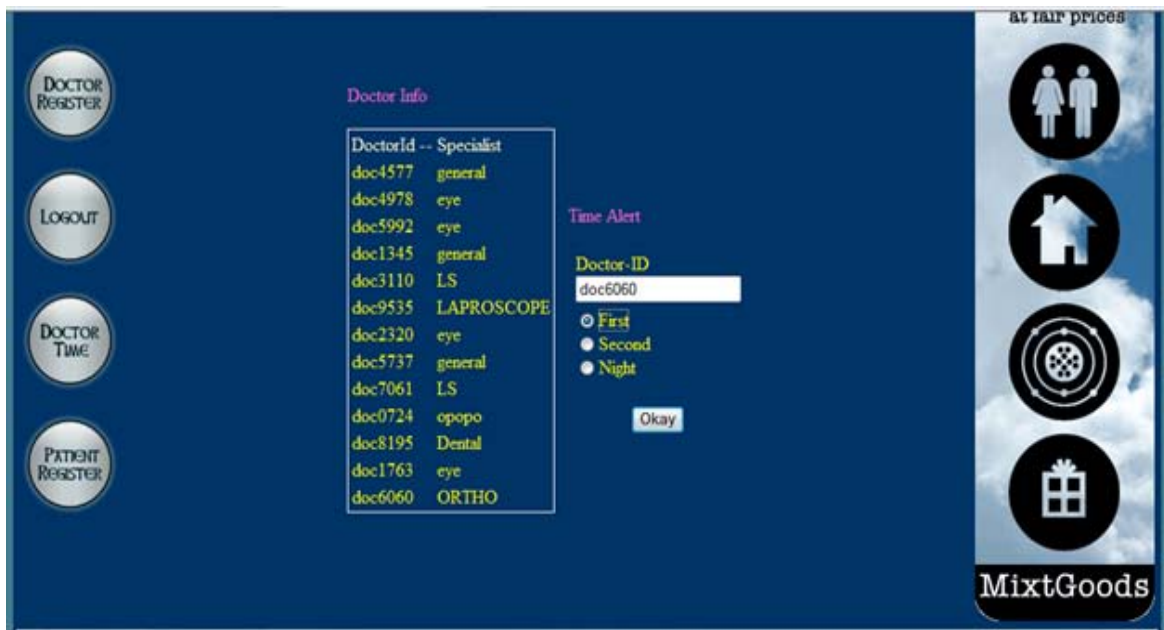


Fig.3 shows Doctor Information in which the doctors id and his specification are listed.the doctors time shift is also given.



Fig.4 here is the patient registration by having his name,password,gender,date of birth,address,contact number and his occupation.



Fig.5 shows Doctors administration



Fig.6 shows patient login through his username and password

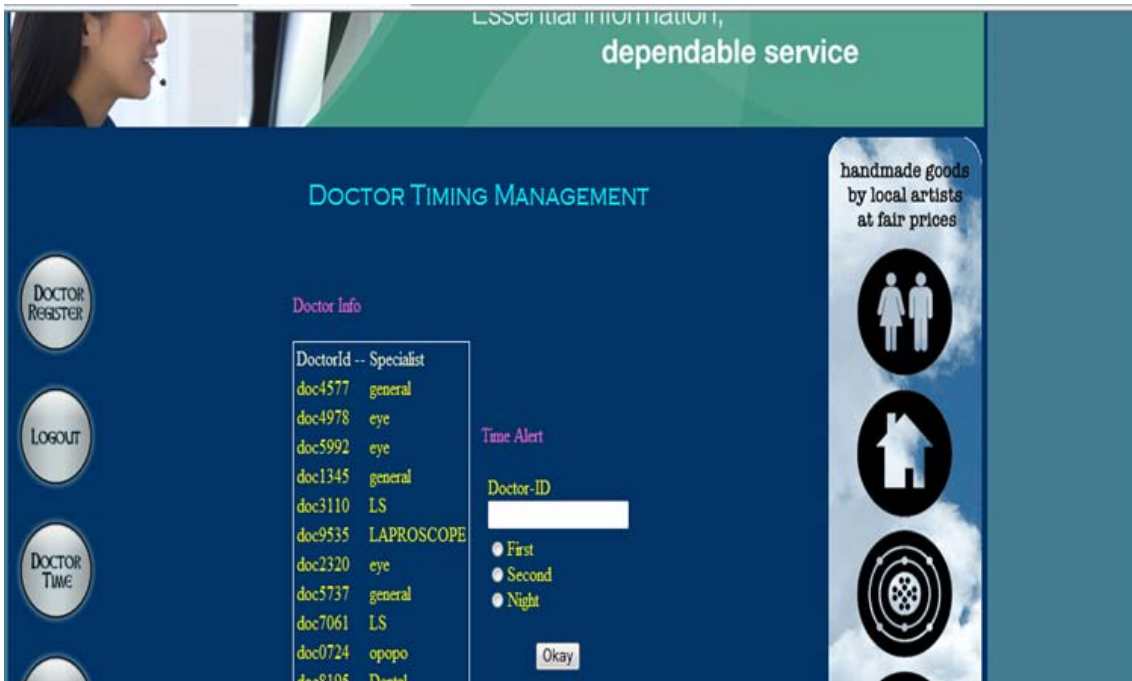


Fig.7 here is the Doctors time management which provides his id, specification and time

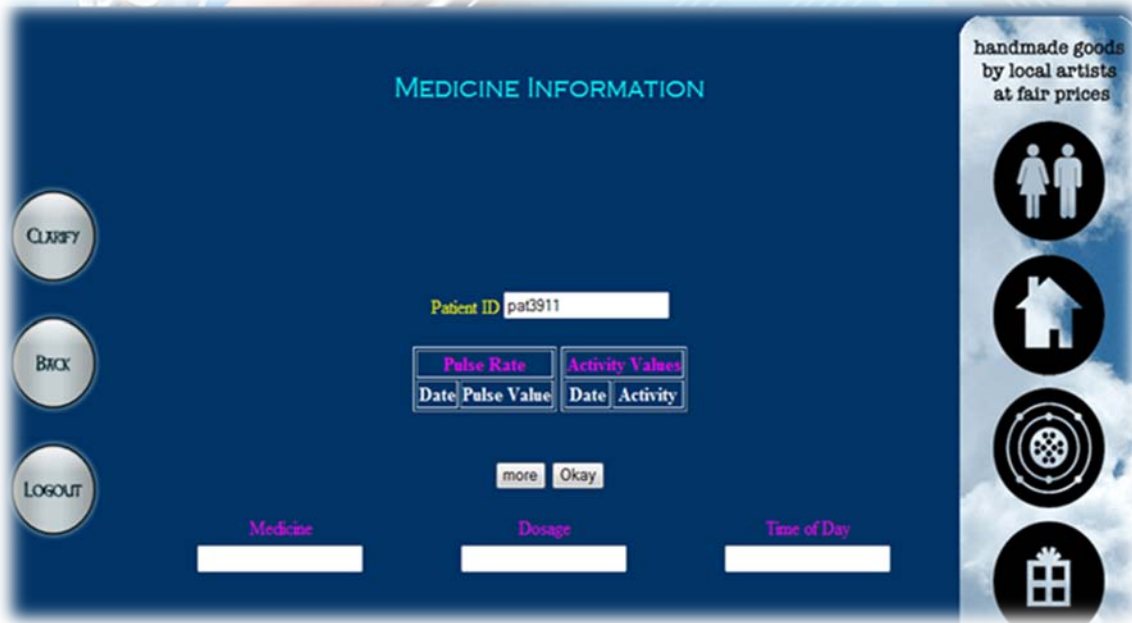


Fig.8 gives the details about the medicine information.it tells about the medicine,how much dosage to use and time of day.

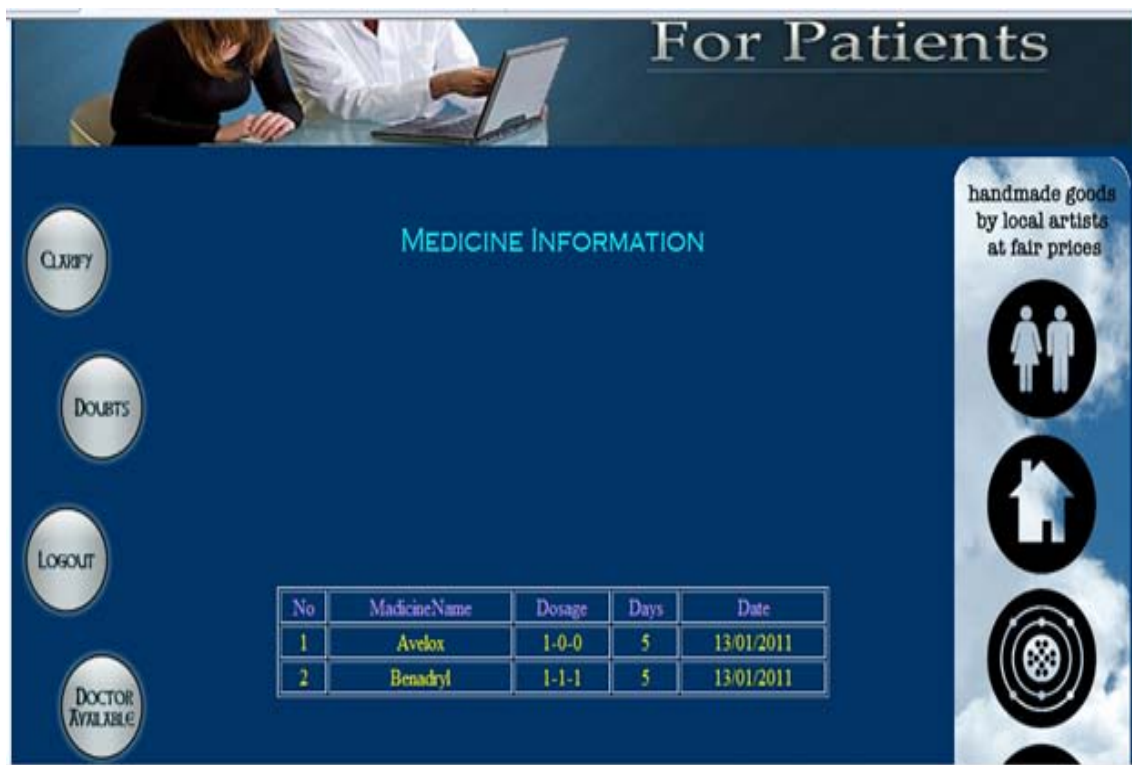


Fig.9 also provide some information about the medicine that is name of the medicine, dosage, for how many days they have to be used and date.

VI. CONCLUSION

Through this paper we have proposed that security can be provided to cloud which is integrated with sensor with U-life care. Both the patient and the doctor has to be authenticated before accessing the reports available on cloud. And in future new security measures can be introduces to make cloud more secured and this cloud security can be applied to many domains.

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