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SMART HOSPITAL MANAGEMENT USING IOT

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Abstract: *Medical data are an ever growing source of information generated from hospitals consisting of patient records in the form of hard copies which can be made easier and convenient by using QR code of the patient details. Our aim is to build a Health-care Portal system which will provide the features like hospital management, patient records, disease prediction and generate QR code for every patient as per there updated disease information. There is always need for efficient, time saving means of communication between doctors, hospitals, patient and all other concern persons.*

Keywords*:Internet of Things (IoT), security, privacy, access control, cloud computing.*

1. INTRODUCTION

We can enhance this system by building collaborative system comprised of smart phones/tablets, automated Sensor node which will be connected with a system at hospital and with all concern persons. In this system, We are using 4 types of sensors for detecting patient's health. They are as follows: weight sensor, temperature sensor, heart beat sensor. In this system the One sensor node is hang to saline bottle of patient and the weight of saline bottle is monitored , and when saline bottle is get empty the alert message will send to ward staff's mobile application or to admin .

Similarly, one heart rate sensor is mounting on patient's wrist, when the heart rate change to average heart rate the alert notification is send to ward staff mobile app. This heart rate is set according to patient's BP level, age criteria, and disease.Similarly, the Sensor node is use to monitoring the patient's temperature level. We can maintain the graph of temperature level by continuously monitoring them. We are measuring saline level of patient ,temperature of body , heartbeats of patients using this sensor and inform immediately to respective ward admin for his/her care.In this system, QR code is also generated at the time of registration.

All information stored at database. User captures all information of particular patient and gives proper treatment to that user. This may absolutely helpful to hospital's management system.

2. MODULE DESCRIPTION

1: When patient is hospitalized his saline bottle is hang to one sensor node. when bottle gets empty the notification is send to admin i.e our application.

2 : similarly ,the heart rate sensors is mount on patients finger or to their wrist ,when it found the heart rate is beyond the average heart rate then alert message is send to admin /ward staff application system .

3:Similarly, the temperature sensor is used to monitor the patients temperature. We can maintain the graph of temperature by continuously monitoring them.

Hardware Requirements:

- System: Pentium IV 2.4 GHz.
- Hard Disk :40 GB.
- Ram: 512 Mb.

Software Requirements:

- Operating system : Windows XP/7.
- Coding Language: JAVA/J2EE, Hibernate.
- IDE : Java eclipse, Android.
- Web server: Apache Tomcat 7.
- Front End: JSP, CSS etc.
- Back End: MySQL as database server.

3. SYSTEM MODEL

Fig 1. shows the architecture design of QR code generation. In this system, doctors are able to scan all the information of particular patient's information with the help of QR code to give proper treatment to the patient in less time.

Fig 2. shows the working of various sensors. Heartbeat sensor, temperature sensor and weight sensor are provides the status of patient's health to the admin of hospital.

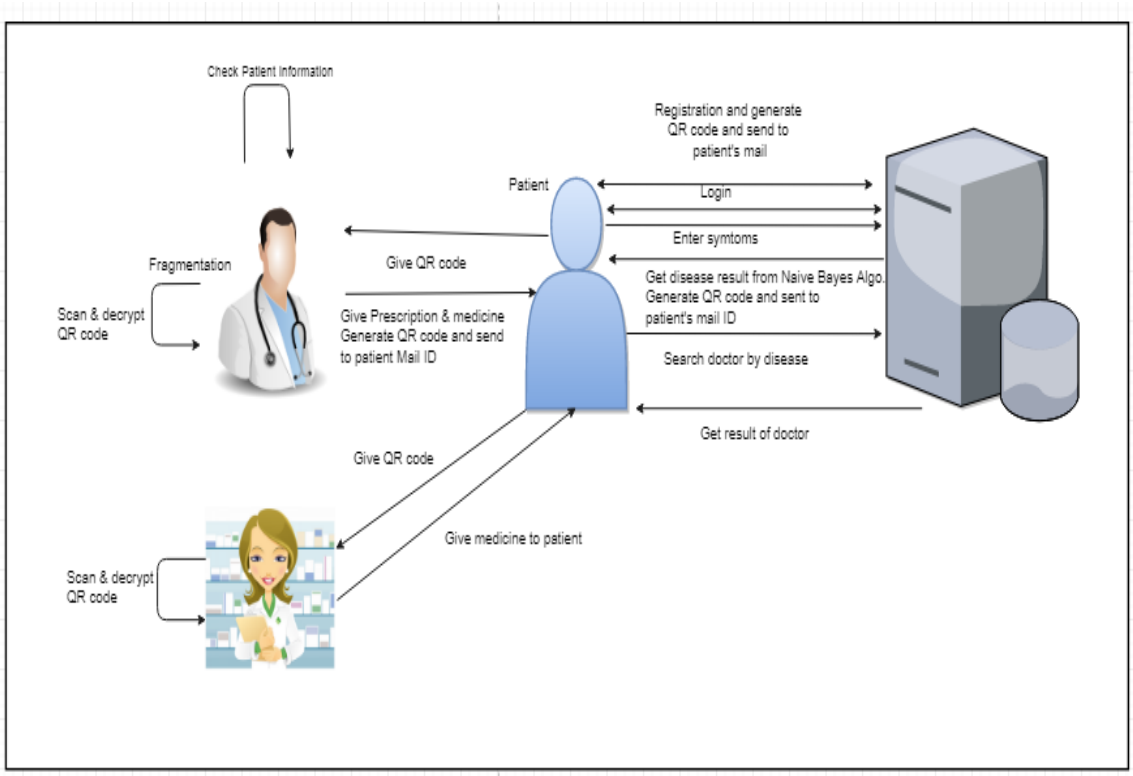

Fig. 1 : System Architecture QR sensor

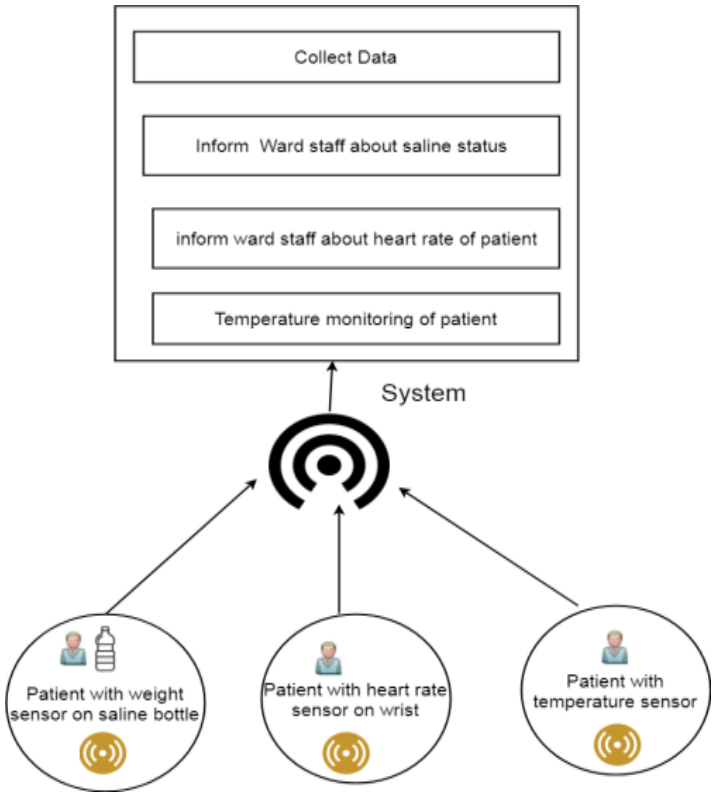

Fig. 2 : System Architecture of sensors

4. ADVANTAGES

- Reduce human interface.
- Automated system
- Improve costs control.
- It helps as a management system for the hospital authorities to develop comprehensive health care policies.
- By desegregation and streamlining your hospital advancement, it permits you to extend patient volumes while notincreasing staff.
- Automation of body tasks reduces errors and will increase productivity in the slightest degree levels.

5. RESULTS

Admin login into the system	Username and password
Saline bottle is empty	Alert notification to ward staff
Heart rate changes	Notification to ward staff
Temperature is change	Monitoring
QR code is generated	Show all information of patient.

6. CONCLUSION AND FUTURE SCOPE

This system presents an approach of automatic system to provide best management in hospitals. This System is capable of measuring saline level, body temperature, and heartbeats with the help of sensors and it is very helpful for doctors and patients.With advances in digital medical equipments, wireless sensors it is possible to gather data in less time and precisely. It is possible to create centralized system connecting each device in hospital further this system can be connected withsmart phones/tablets thus enabling more monitoring and control of operations even from remote location. Process of automation can be enhancing with reduced redundancy with help of centralized interconnected system.

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