Wireless Interactive System for Patient Healthcare Monitoring using Android Mobile

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Abstract: Recently there has been a need to incorporate the use of mobile computing devices in hospital or clinical applications, to enhance patient care. The advancement of wireless technology has created unique mechanisms of interaction that can meet the needs of e-health system robustness, reliability and accuracy requirements.Earlier, many healthcare organisations still record and distributed instrument output data and patient records in paper form, which can lead to errors in interpreting records and ultimately to misdiagnosis. So, the product is mainly for doctors for viewing patient details and ECG reports on MCDs. The project will deliver wireless monitoring system for patients (e-health).As the product involves new technology; it will last till new version with better interface comes. Medical organisations are involved for providing ECG**.**

Keywords: e-health system, medical information system, patient healthcare monitoring, Wireless interactive system, interactive devices.

I. INTRODUCTION

The purpose of this document is to determine the feasibility of enhancing a Wireless Interactive system .This study also aims at analyzing the various issues that are expected to arise during development of this application as software system concerning its hardware implementation, interaction and integration with other systems and potentially competing alternatives to the proposed system.The aim is to obtain general information about current system and processes, system objectives, assumptions & constraints. This document also supplies the comparison of alternatives.

II.   GOALS AND SCOPE

A. Project Goals

Project Goal	Priority	Comment/Description/ Reference
Functional Goals:		
Perform database operation.	High	User can upload database, insert or update entities and use it for analysis.
Authenticate doctor.	High	The Doctor will be assigning unique ID and password to access the patient database.
Show all patient record.	High	The patient record is shown in tabular format.
Show ECG of desired patient.	High	ECG of desired patient is shown.
Business Goals:		
Cost-effective	High	Since the resources required are cheap, the organization doesn't have to spend capital on it.

Project Goal	Priority	Comment/Description/ Reference
development cost		freeware development tools development cost can be reduced.
Technological Goals:		
Implementation simplicity		Customization of product according to hospital's need.
Reliability	High	The product should be reliable to ensure correct Info. Of patient.
Quality Goals:		
Performance	High	The optimization of operational speed.
Usability	High	The ease of using the system
Constraints:		
Resource Constraints	High	Internet connectivity and mobile phone with Android OS are required.

The project will deliver a system which will consist of an android application and an online service which will work together. It will help the doctor to check the patient record when he is out of station. The customer may expect system to support different platforms such as symbian, java, iOS etc but the system will provide support only for Android OS. A team of four people are involved in delivering the project.

B. Project Scope
Included
The project will deliver a system which will consist of an android application on   client side and an online service which will manage the server related operations.
**Excluded**
The customer may expect system to support different platforms such as symbian, java, iOS etc but system will provide support only for Android OS.

III.   SYSTEM FUNCTIONALITY

C. Problem Statement

The problem of	Patient record updation. Inaccessible data.
Affects	User switching from one handset to another(of same or different company)
The impact of which is	Handset loss and Connectivity problem
A successful solution would	Cross Platform Support. Increased Security.

D. Project Perpspective
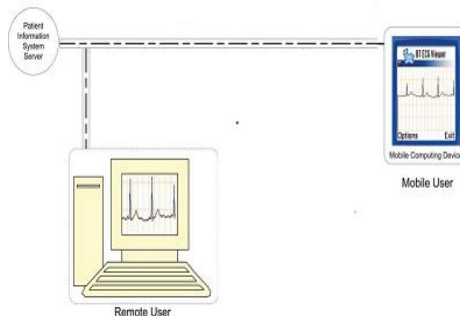
IV.   SOFTWARE AND HARDWARE REQUIREMENTS

F.System Interfaces

System Environment   : Windows operating system
Platform   : Android 2.2 and above
Front End   : JSP
Back End   : MySQL

G.User Interfaces

All functionalities provided in our system will be bounded to each other with the help of software interfaces. The system as a whole will be realized by user with the help of user interface. Thus it is nothing but connecting link between our well bounded system and its user.

Login: The authenticate doctor should prove his identification at the start for using the system and the new users should register to access the system.

Menu: The system gives three options to the user after successful login:
* View Patient record.
* View ECG Report.

H.Software Interfaces
* Windows XP or higher.
* MySQL 4.1.x and higher.

I.Hardware Requirements
* Intel Pentium 4 1.6 GHz CPU
* Minimum 4 GB of disk space.
* Android Device with Wi-Fi.
* Ram: 1 GB
* Hard Drive: 4 GB

External Interfaces
* ECG machine.

J.Logical Database Requirements
Doctor database
This database will consist of account information of each doctor such as   username, password.
Patient database
This database will consist of patient details including ECG images. It include attributes such as name, age, blood group, sex, description Of diseases.
Project Functions
1. Allowing existing doctor to sign in.
2. Checking availability of user-id for new doctor.
3. Accepting username and password for existent users.
4. Storing information of the new doctor in the database.
5. Allowing doctor to check the record information on current platform.
6. Displaying list of patient record.
7. Displaying desired patient ECG report.

V.   RECOMENDATIONS AND CONCLUSION

The recommended approach is to develop a system which will enable the user to update and monitor the patient data is best for the project needs of the organization and its requirements. The user will require basic knowledge of the system and how to operate it. Also, the system is user friendly can be modified and customized as per needed. Overall, the system will reduce manual and repetitive tasks and automate a lot of tasks.

The other alternatives are not efficient in terms of time and available features as compared to this system.

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