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Smart Hospital Management System

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Abstract: ***Information and Communication Technologies (ICTs) are commonly using in healthcare organizations worldwide. There are different kinds of healthcare applications developed in android Smartphone's which help patients and their caregivers to reduce time and cost efficiency. Hospitals are the largest and most complex organizations where health care is provided. Safe and effective patient care services in hospitals depend on the efficient decisions made by hospital executives. The main task of hospital executives is to ensure the hospital can provide high quality patient care and services. This Android application used for displaying hospital performance metrics on a daily basis. This application allows hospital executives to review and monitor hospital operational data with ease of access and in a portable manner. Thus, reducing the effort of the hospital executives to perform their tasks. In this research work, an application is developed that locates the nearest hospital. The System is designed for Any Hospital to replace their existing manual, paper-based system. The new system is to control the following information; List of Hospitals, bed availability, Book Appointment, List of Doctors, Facilities and Book Ambulance. With the help of this application, a patient can find the nearest hospital according to specialized consultant availability.***
Keywords: Android application, List of hospital, Bed Booking, Bed Availability, Book Ambulance

I. INTRODUCTION

In our daily life we face a lot of problems. Disease is one of most common issues for a person's life. If anybody is ill and wants to visit a doctor for check-up, he or she needs to visit the hospital and waits until the doctor is available. The patient also waits in a queue while getting appointment. If the doctor cancels the appointment for some emergency reason, then the patient is not able to know about the cancelation of the appointment unless or until he or she visits the hospital. So, it's necessary to get a consultation with Doctors whenever we got affected with various diseases. As the internet is now available for everyone therefore anyone can use the online appointment system to overcome such problems and inconvenience for the patients. Vision of this project is to create doctor patient handling management system that will help patients to book doctor appointment and fulfil their prospects. In this system doctors are allowed to manage their booking slots in online, patients
can make their appointment to book empty slots too. This is the system of reservation for counselling by patient's name. This system manages different kinds of doctors at a time and patients can choose their expected one for booking. The system also manages the ambulance Booking, Bed Booking One of the major problems within a hospital environment is dealing with the bottleneck of patient allocation and the availability of beds (Wards). Through increased public scrutiny there is also a greater degree of accountability required from health care professionals with regard to facilities management and information administration. There is a critical need to develop a more efficient and suitable universal technique, compatible with existing data systems, to manage the bed allocation issues affecting hospital staff on a daily basis. Hospitals are the largest and most complex organizations where health care is provided. Safe and effective patient care services in hospitals depend on the efficient decisions made by hospital executives. The main task of hospital executives is to ensure the hospital can provide high quality patient care and services. This Android application used for displaying hospital performance metrics on a daily basis. This application allows hospital executives to review and monitor hospital operational data with ease of access and in a portable manner. Thus, reducing the effort of the hospital executives to perform their tasks. The purpose of the project entitled as to computerize the Front Office Management of Hospital to develop software which is user friendly simple, fast, and cost effective. It deals with the collection of patient's information, diagnosis details, etc. Traditionally, it was done manually. The main function of the system is register and store patient details and doctor details and retrieve these details as and when required, and also to manipulate these details meaningfully System input contains patient details, diagnosis details, while system output is to get these details on to the screen. The Hospital System can be entered using a username and password. It is accessible either by an administrator or receptionist. Only they can add data into the database. The data can be retrieved easily. The data are well protected for personal use and makes the data processing very fast. Hospitals currently use a manual system for the management and maintenance of critical information. The current system requires numerous paper forms, with data stores spread throughout the hospital management infrastructure. Often information (on forms) is incomplete, or does not follow management standards.

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Forms are often lost in transit between departments requiring a comprehensive auditing process to ensure that no vital information is lost. Multiple copies of the same information exist in the hospital and may lead to inconsistencies in data in various data stores. A significant part of the operation of any hospital involves the acquisition, management and timely retrieval of great volumes of information. This information typically involves; patient personal information and medical history, staff information, room and ward scheduling, Bed availability, Doctor appointment, Ambulance Booking, staff Availability, Operating theatre scheduling and various facilities waiting lists. All of this information must be managed in an efficient and cost wise fashion so that an institution's resources may be effectively utilized this system will automate the management of the hospital making it more efficient and error free. It aims at standardizing data, consolidating data ensuring data integrity and reducing inconsistencies.

II. OBJECTIVES

The objectives are as follows:

A. To provide quick guidance for the users who are in need of doctor (general medicine or specialist) and the medicines in nearby locations.
B. Helping people to search for doctors and get appointment is our main objectives. User can search doctors which can make sure to find specific doctor an easy task. A platform where doctors can check patient previous medical history for better check-up.
C. The purpose of the project is to build a hybrid android application program to reduce the manual work for managing the user details, hospital and pharmaceutical details.
D. Easily take doctor appointment
E. Hire ambulances
F. View doctors list.

III. METHODOLOGY

This research work was conducted in two steps. The first step was an informative survey and it conducted to gather the latest information about hospitals and doctors.
The second step was to implement an application for android Smartphones, so that it will be available to all android users. Later it will be implemented for another mobile operating system.

IV. SYSTEM REQUIREMENT

A. Hardware Requirement

The most common set of requirements defined by any operating system or software application is the physical computer resources, also known as hardware. A hardware requirements list is often accompanied by a hardware compatibility list (HCL), especially in case of operating systems. An HCL lists tested, compatibility and sometimes incompatible hardware devices for a particular operating system or application. The following sub-sections discuss the various aspects of hardware requirements.

Hardware Requirements for Present Project:

1) Processor – i3
2) Hard Disk – 5 GB
3) Memory – 1GB RAM
4) Smartphone

B. Software Requirement

Software Requirements deal with defining software resource requirements and pre-requisites that need to be installed on a computer to provide optimal functioning of an application. These requirements or pre-requisites are generally not included in the software installation package and need to be installed separately before the software is installed.

Software Requirements for Present Project:

1) Operating System: Windows XP and later versions
2) Programming Language: Java.
3) Database: MySQL.
4) Front End: HTML, CSS, XML

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V. SYSTEM ARCHITECTURE

In this proposed system -

A. Admin (Web App)

1) Login: Admin can login in his personal account using id and password.
2) Add Hospitals: Admin can add Hospitals.
3) Add Google Location: Admin can add new Locations.

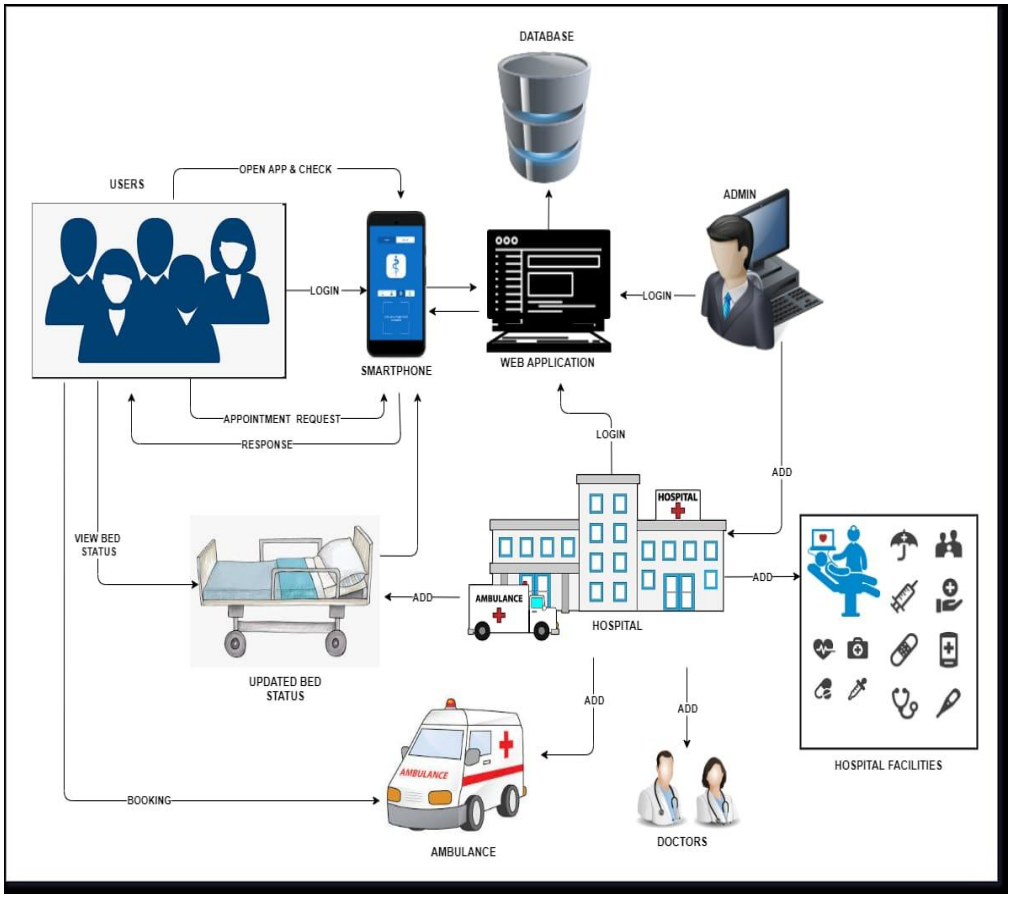


Fig. 1 System Architecture

B. Hospital (Web App)

1) Login**:** Hospital can login in his personal account using id and password.
2) Add Facilities.
3) Add Doctors with details
4) Doctor visit schedule
5) Doctor Appointment Scheduling
6) The Hospital module handles various enquiries about the patient's, bed availability, and the patient's movements within the hospital. The system can also handle patients as well as Doctor Consultation and Scheduling, Doctor Consultancy Fees and Time Allocation.

C. User (Android App):

1) Register (Name, Contact, Email, Address, City, Age, Gender)
2) Login
3) View Location: User can view the location
4) Search Hospitals.
5) Book Doctors appointment.

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VI. APPLICATIONS

A. To check the availability of doctors and their locations.
B. To reckon the hours of waiting for consultation.
C. Patient can easily find the hospitals and medicines
D. Data security and correct data retrieval made possible
E. Minimize the waiting time for patients during an emergency.
F. Reduces the waiting time for patients who need immediate surgery
G. Reduces the risk of Alternative patient placement due to overflow bed conditions.
H. Increased coordination resulting in better patient transfer and better pre-planning.

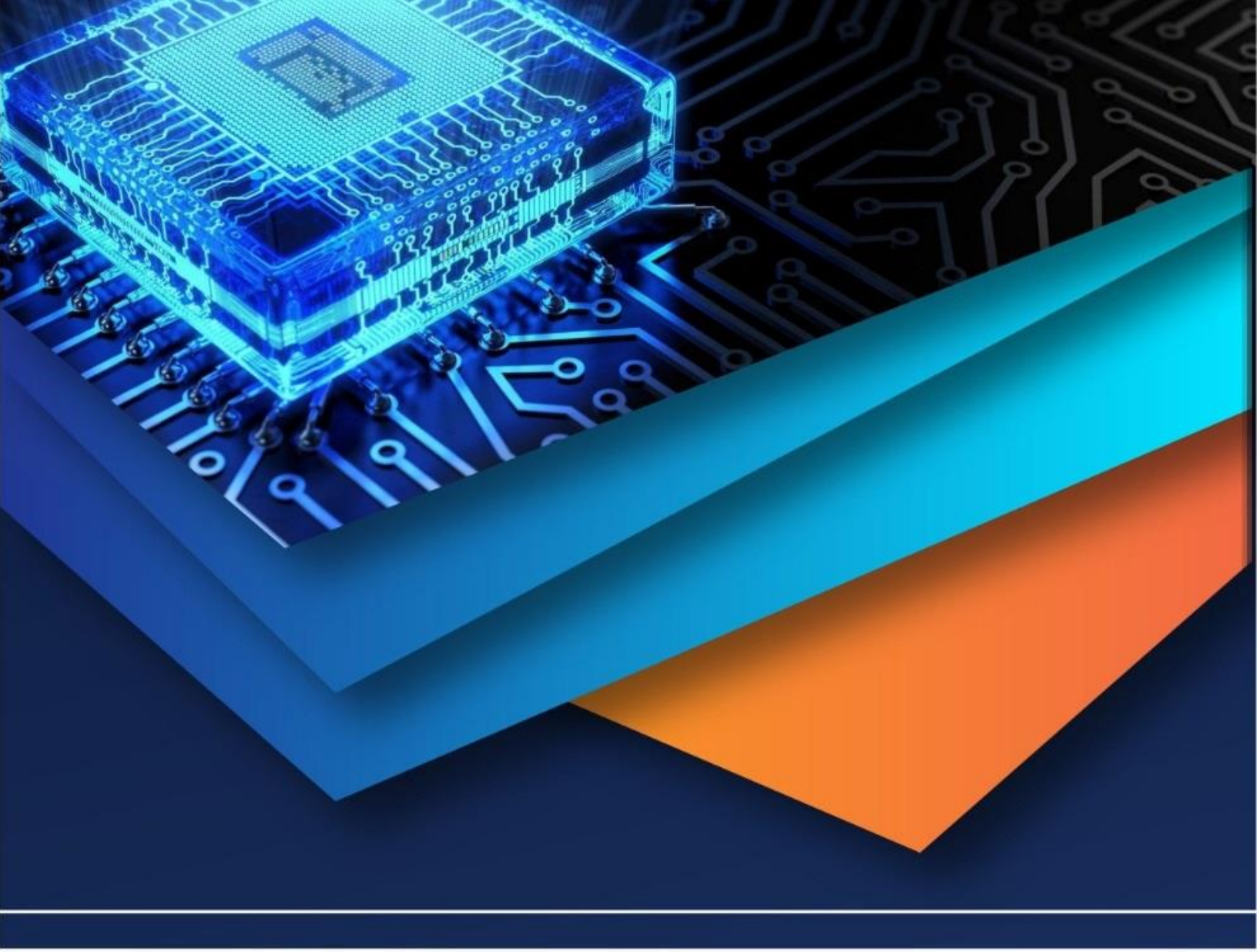
VII. CONCLUSION

Our application provides quick guidance to the users, in search of the doctor and hospital nearby with the current update. It will render details about the number of patients waiting to consult the particular specialist and the expected hours of waiting for consultation. This system is also designed to impart the availability of List of Hospitals, bed availability, Book Appointment, List of Doctors, Facilities and Book Ambulance. This will enable every individual to make use of the readily available details whenever there is a need or any emergency.

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