Android Application for Health-care System with Data Warehouse

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Abstract

In proposed system we are developing the Android App for healthcare system which will help to automate all the manual work. The purpose of this system is, using android app Doctor can register the patient and if patient is already registered then Doctor can see the patient’s medical history. All the information will be served to device from cloud and will be saved on cloud. After processing on data, this data is stored in data warehouse. This will be helpful for medical analysis.

Keywords: ETL (Extraction, Transaction, Load), analytical report, Web services, Patient health, android

I. INTRODUCTION

Now days healthcare industry is fastly development system because of learn new technology and use this knowledge in practical life, to take appropriate decisions regarding patient’s health. Summarizing of all collected data it’s called as analysis of that data.

In our developing and technology dependent life we totally rely on gadgets especially smart phones. Today everyone has a smart phone. With this we get an opportunity to use technology in a better way so that it can be made useful to us. And it plays an important part in our daily life.

Storing all the history of patient disease information into the data warehouse. It is a system used for reporting and data analysis. They store current and historical data and are used for creating analytical reports. Data processors which can perform different operations on data like transformation, extraction, loading. Data is load onto the disk in data server that can store data onto the disk space. ETL (Extraction, Transaction, Load) tool which performs the important role to fetched and transform the information. The project aims at solving the problem of storing diagnosed information of a particular patient from a doctor. This diagnosed information will contain of various symptoms, causes as well as the diagnosed disease based on the symptoms. The system will not suggest the doctor of the disease but will just store the information provided by the doctor.

The doctors will longer have to write a receipt of medical prescription for the patients as once all the necessary information provided to the system, it will on itself generate a receipt of medical treatments suggested and also a list of all medical prescription suggested by the doctor for a single visit. All of the above information will store in cloud with help of web services. These web services will help provide the data to the application on demand basis because of which the information to the app will be available all the time whenever requested. So we are introducing an Android Application whose objective is to help and the ease the process of maintaining the patients’ medical record with doctor.. Using Application it can be easy to provide all the above functionalities and making the management of patients efficient.

II. LITERATURE SURVEY

With the Tablet and smart phone development, the development of mobile applications (mobile Apps) has become more desirable and diversified in users' perspective. In this study, an Android Apps was developed for an outpatient physical therapy clinic. The purpose of this handheld healthcare information system is to record medical processes and patient appointment. During the App development, the medical system's environment characteristics were observed and a scenario simulation method was used in the comparison of efficiency between traditional paper-based approach and App system. [1]
Active warehousing has emerged in order to meet the high user demands for fresh and up-to-date information. Online refreshment of the source updates introduces processing and disk overheads in the implementation of the warehouse transformations. This paper considers a frequently occurring operator in active warehousing which computes the join between a fast, time varying or bursty update stream $S$ and a persistent disk relation $R$, using a limited memory. Such a join operation is the crux of a number of common transformations (e.g., surrogate key assignment, duplicate detection etc) in an active data warehouse. We propose a partition-based join algorithm that minimizes the processing overhead, disk overhead and the delay in output tuples. The proposed algorithm exploits the spatio-temporal locality within the update stream, and improves the delays in output tuples by exploiting hot-spots in the range or domain of the joining attributes, and at the same time shares the I/O cost of accessing disk data of relation $R$ over a volume of tuples from update stream $S$. We present experimental results showing the effectiveness of the proposed algorithm.[2]

This paper aims to improve the quality and effectiveness of administrative management using both decision analysis and data warehouse technology. Firstly, the structure of the Administrative management system is organized by five modules, which are 1) Administrative management module, 2) Decision support module, 3) Personal management module, 4) Information elivery management module, and 5) System maintenance module. Secondly, the decision analysis system for administrative management is developed by four sub-systems, that is, 1) Database management system, 2) Model base management system, 3) Knowledge base management system, and 4) Method base management system. Afterwards, to build system for administrative management, a decision analysis algorithm combined with data warehouse is designed. Finally, to test the performance of our system, we implement an administrative management system. Experimental results show that utilizing the data warehouse technology, quality of administrative management is significantly improved in four aspects: 1) Administration efficiency evaluation, 2) Quality administration evaluation, 3) Administration management satisfaction evaluation, and 4) Administrative management coverage evaluation.[3]

III. SYSTEM ARCHITECTURE

![System Architecture Diagram]

Each time new patient visits to doctor, doctor will register the patient details through android device. The system will not suggest the doctor of the disease but will just store the information provided by the doctor. Each time the patient visits the doctor the doctor will be able to see all previous medical history of the patient which was diagnosed and treated by that particular doctor. This will enable maintaining secrecy of patients medical history and using that medical history for better medical examination. Along with billing the system will also store the treatment suggested by the doctor for the suspected disease as well as the any medical prescription that will be suggested by the doctor. The system will also help reduce the pain of maintain the billing information for the patient as it will also have an option for entering the consulting fee for the patient. All of this information will be stored on cloud so that any doctor can access the information on the go and also maintain a record any patient examination done even while travelling. This information from the cloud will then be populated in the data warehouse for further data processing.

Our system consists of following modules:
1) Patient Registration
2) Patients Processing
3) Bill Generation
4) Data migrator from OLTP to warehouse
5) Cloud Storage

A. Patient Registration:
When a new patient will visit a doctor for the first time, the doctor will register the patient through the Android app and store the patient's personal information, health-related information. Patients Processing: Each time the patient visits the doctor, the doctor will be able to see all previous medical history of the patient which was diagnosed and treated by that particular doctor. This will enable maintaining the secrecy of the patient's medical history and using that medical history for better medical examination.

B. Bill Generation:
Along with billing, the system will also store the treatment suggested by the doctor for the suspected disease as well as any medical prescription that will be suggested by the doctor. The system will also help reduce the pain of maintaining billing information for the patient as it will also have an option for entering the consulting fee for the patient.

C. Data migrator from OLTP to warehouse:
All of the above information will be stored in the cloud with the help of web services. These web services will help provide the data to the application on demand basis because of which the information to the app will be available all the time whenever requested. This information will then be populated in the data warehouse from the web server for further medical analysis.

D. Cloud Storage:
All of this information will be stored on cloud so that any doctor can access the information on the go and also maintain a record of any patient examination done even while travelling.

IV. Conclusion
In our system, we are developing the Android App for the healthcare system which will help to automate all the manual work. The purpose of this system is, using the Android app, a doctor can register the patient and if the patient is already registered then the doctor can see the patient's medical history. All the information will be served to the device from the cloud and will be saved on the cloud. After processing on data, this data is stored in the data warehouse. This will be helpful for medical analysis.

REFERENCES