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A Survey of Telemedicine Services using Datamining

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ABSTRACT

The transfer of the medical care services to the patient, rather than the transport of the patient to the medical services providers is aim of the project. This is achieved by using web-based applications including Modern Medical Informatics Services which is easier, faster and less expensive. The required system implements the suitable informatics and electronics solutions efficiently for the Tele-medicine care. We proposed an approach to manage different multimedia medical databases in the telemedicine system. In order to be efficiently and effectively manage, search, and display database information, we define an information package for both of doctor and patient as a concise data set of their medical information from each visit. The methodology for accessing various types of medical records will be provided, also we will design two web-based interfaces, high-quality data and display for many medical service purposes.

Keywords: Datamining, Telemedicine, Medical Services, Databases.

I. INTRODUCTION

There are shortages of medical resources in rural areas or geographically isolated regions, so many physicians may be reluctant to serve in these areas. Therefore, people who live there will receive lower medical care than those who live in urban areas. There is an important need to develop a telemedicine system to improve the quality of medical services there and provide more educational opportunities to the physicians in these areas [1] [4].Telemedicine can be defined as the providing of medical services over a distance. The Archiving and Communication System (PACS) will be used in the telemedicine process as this service requires patient history, medical images, and related information. By using PACS [5] [11], we can find that the integrated telemedicine system consists of the following five subsystems:

1) Acquisition subsystem;
2) Viewing subsystem;
3) Teleconferencing subsystem;
4) Communication subsystem;
5) Database management subsystem.

The first subsystem is the acquisition subsystem which collects multimedia information [12] then converts it to a standard format (e.g., DICOM 3.0 [13]). The second one isthe viewing subsystem which displays and manipulates the images and other medical information [14] [15]. The third one is the teleconferencing subsystem which allows face-to-face interactive conference between physicians in

rural areas and medical centers [16][18],this subsystem is not included in a PACS.

II. LITERATURE SURVEY

Recently, many researchers have focused on designing web medical database management systems that satisfy certain performance levels. Such performance is evaluated by measuring the amount of relevant and irrelevant data accessed and the amount of transferred medical data during transactions processing time. The medication reminder synchronization system provides a patient with medications as prescribed by medical staff. In addition, medical staff can remotely send messages to the system in order to change the medication schedules or device configuration settings embedded in the medication reminder. The proposed system supports the OMA (open mobile alliance) DS (data synchronization) protocol, which was originally proposed as a DS standard protocol that synchronizes data between mobile devices and a central server. In this study, the OMA DS protocol is redefined and extended to transmit the patient s medication status data and the device configuration data.

III. EXISTING PROCESS

Recently, many researchers have focused on designing web medical database management systems that satisfy certain performance levels. Such performance is evaluated by measuring the amount of relevant and irrelevant data accessed and the amount of transferred medical data during transactions processing time.

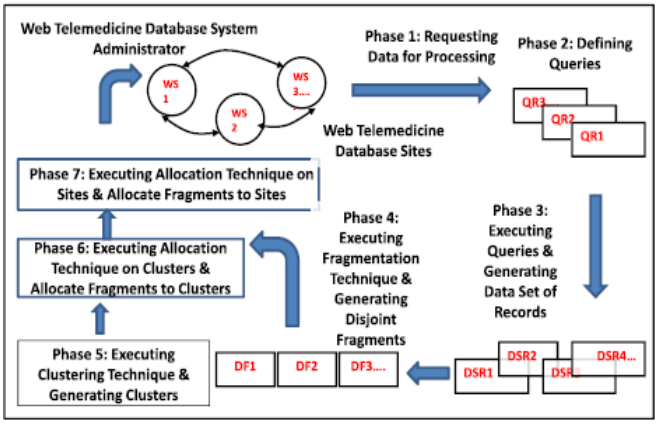
Several techniques have been proposed in order to improve telemedicine database performance, optimize medical data distribution, and control medical data proliferation. These techniques believed that high performance for such systems can be achieved by improving at least one of the database web management services, namely database fragmentation, data distribution, websites clustering, distributed caching, and database scalability.

IV. PROPOSED METHODOLOGY

Our approach integrates three enhanced computing services techniques namely, database fragmentation, network sites clustering and fragments allocation. We propose an estimation model to compute communications cost which helps in finding cost-effective data allocation solutions. We perform both external and internal evaluation of our integrated approach.

In our proposed system we develop a fragmentation computing service technique by splitting telemedicine database relations into small disjoint fragments. This technique generates the minimum number of disjoint fragments that would be allocated to the web servers in the data distribution phase. This in turn reduces the data transferred and accessed through different websites and accordingly reduces the communications cost.

V. IMPLEMENTATION RESULTS



- Doctor Registration
- Patient Registration
- Telemedicine services Activation
- Doctor Manage telemedicine services & their setting

- Doctor Manage booking requests
- Patient add basic information & medical history
- Patient makes booking &reviews his booking list

VI. CONCLUSION

We perform both external and internal evaluation of our integrated approach. In the internal evaluation, we measure the impact of using our techniques on WTDS and web service performance measures like communications cost, response time and throughput. In the external evaluation, we compare the performance of our approach to that of other techniques in the literature. The results show that our integrated approach significantly improves services requirement satisfaction in web systems. This conclusion requires more investigation and experiments.

VII. FUTURE ENHANCEMENT

As future work we plan to investigate our approach on larger scale networks involving large number of sites over the cloud. We will consider applying different types of clustering and introduce search based technique to perform more intelligent data redistribution. Finally, we intend to introduce security concerns that need to be addressed over data fragments.

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