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E-Healthcare System in Cloud Computing

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ABSTRACT

Electronic healthcare System is arising in terms of new applications in medical industry in various research application. An e-healthcare dataset is having its important to provide the data from various source .This paper aims to giving over view of the procedure of online healthcare system by the usage of cloud computing and also provide the effective information to the patients about the disease and the solution procedure aspects. This paper may also give information about the healthcare system dataset how could be access in cloud storage.

Keywords: Web Application, Cloud Storage, Health Care System.

I. INTRODUCTION

Electronic healthcare system is a website preparation, thus the functionality of the application is to provide medical experts and patients with a user interface for managing healthcare information more securely. The latter interprets into storing, querying and retrieving patient health records and patient-related medical data. This project provide efficient and effective access to the user.by use of this concept user can have easy and fast of access and result in health issues. This project may resolve the user prospect of health issues via this perception of cloud technics because of all these data may reside at a distributed Cloud Storage facility.

Cloud computing is on the rise in healthcare as medicine, Doctors, healthcare administrator , patients , access to information and security .The most of 73% of industrial professionals were suggest to Cloud computing on healthcare . Research people will say that 3.73 billion in healthcare spend cloud computing, it may be 9.5 billion by 2020.Cloud Computing provides facilities for storage, management, processing, and accessing information and other data stored in several system, platforms, and applications. The above work represents the implementation of electronic health care system which enables date storage, update, retrieval, modification through cloud using the virtual private network which enhances the security of the data.

Cloud Computing

Cloud computing is internet based computing ,whereby software and hardware resources are provided to users on-demand .It is by-product and consequence of the ease of access to remote computing sites provided by the Internet.

Principles of Cloud Computing:

Resource pooling:

Cloud computing providers harness large economies of scale through resource pooling.

Virtualization:

Users do not have to care about the physical states of their hardware or worry about hardware compatibility.

Elasticity:

Addition of more hard disk space or server bandwidth can be done with just a few clicks of the mouse on demand.

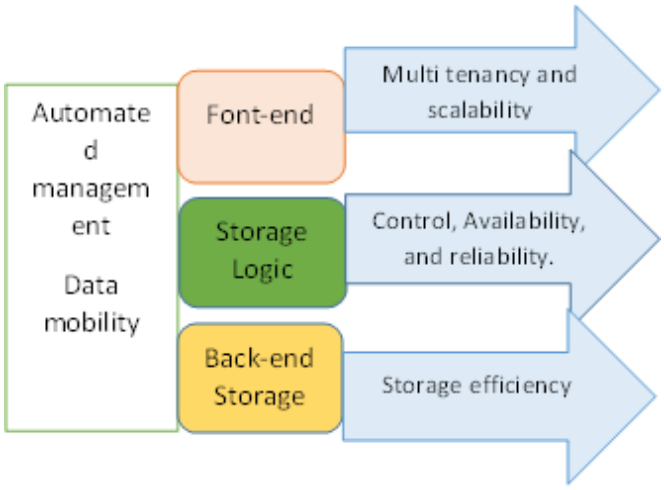
Automatic deployment:

The user only needs to choose the types and specification of the resources he require and the cloud

computing provider will configure and set them up automatically.

Metered billing: Users are charged for only what they are used.

File storage in Cloud:
General architecture:



II. METHODS AND MATERIAL

1. Literature Survey

This project is about generating an enterprise Hospital Management System (HMS) CRM application which provides the benefits of streamlined operations, enhanced Administration and control, superior patient care, strict cost control and improved profitability.

This HMS provides Patient Administration, Billing and Pharmacy Management functions for the hospital. The major functions of Patient Administration module included Allocating Registrations, Recording Personal Details, Handling Hospital Admissions, Assigning Insurance Details, and Recording Transfers within the hospital and Creation of Discharge Summary. The Billing module allowed Billing and receivables, looked into multiple modes of Payment and Rates Definition for Services. Pharmacy module included Consumables management, Maintenance of Drug Composition, Batch-wise Stock of Drugs, and Drug Categorization for Reporting.

This section discusses the main features of the application and presents implementation details. The prevalent functionality of the application is to provide medical experts and patients with a mobile user interface for managing healthcare information more securely. The latter interprets into storing, querying and retrieving patient health records and patient-related medical data (e.g., bio signals). The data may reside at a distributed Cloud Storage facility, initially uploaded/stored by medical personnel through a Hospital Information System (HIS).

Managing huge amount of clinical data and the massive capital required by EHRs for sourcing and maintaining IT infrastructure needed to store, transfer, modify or print data and reports transfer to a national level can be done efficiently and at minimum costs moving data into the Cloud.

The scope of this project is to propose and describe a solution to fully integrate healthcare clinical and administrative processes within cloud infrastructure based on service oriented architecture using existent information systems, focusing on radiology specialized units. The proposed platform is to be used by several units (hospitals) and entities (third parties) at large scale, geographically distributed over a large area.

The above system architecture explains the use of the smart card in different module of Hospital Management. Where the reader device known as RFID will be installed in each clinic, which will manage all the records, schedules, appointments, availability of doctors and such many other modules. Here in this system architecture client can be a patient or employee uses his/her smart card for the accessing the services. The client uses smart card by just giving a tag to the RFID reader and gains the access to the particular service. The service for which client has to gain access is stored on the central server in from of database. Which will help the client to track the data easily from anywhere provided it has RFID reader and rights to access it. The central server will store all the information related to the patient medical records, past history, last visited, Doctor records, attendance etc.
This system will be helpful for dealing with all kinds of health related issues.An integrated system to have your health checkups done quickly at best price via nearest path labs and access your reports anywhere anytime on your phone. Based on reports get symptoms and preventive measures on your phone. If in doubts you can contact specialized doctors in your locality from your phone. If you ever need blood it's just tap away. Application will broadcast your need to people with

same blood group in your locality (city) so that if rare blood groups it will be savior for you and will save your blood bank expenses.

2. Existing System

It is a very limited access to patient-related information in hospital system which is available, during decision-making and the communication among patient observation team members are usual causes of medical errors in healthcare.

Prevention of spoofing attack.
High efficiency password verification
Prevention of replay attack

Prevention of denial of service attack

Proper maintenance of data required

Cloud Computing is a model for enabling convenient, on-demand network access to a shared group of configurable computing resources (networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction.

3. Proposed System

To overcome all the problem of existing system this project will satisfies the valuable solution. The main components of a Cloud Computing Service usually are the platform front-end interface that communicates directly with users and allows the management of the storage content. The interface can be a web client or a standalone application.

The Cloud Storage Facilities manages the physical infrastructure (storage elements) and is also responsible for performing maintaining operations backing up data. The Cloud Platform interface is also connected to the Cloud Service module, which handles and queues user requests. Finally, the Cloud Infrastructure module manages user account, accessibility and billing issues.
This work has been now extended to include the functionality of communicating with Cloud Computing platforms and support communication through Web Services.

4. Scope And Objectives

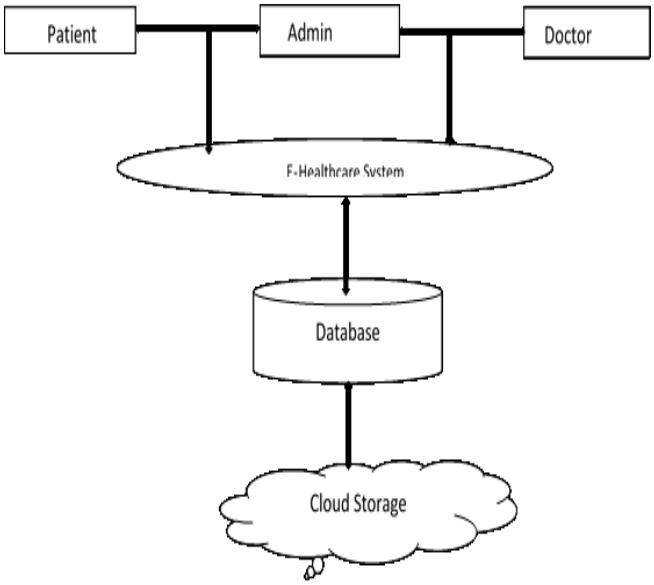
The scope of the project is to prepare a web service for a patients who need the doctor advice and treatment for the affected disease. This project can helps the users to given proper information and may suggest the consultant experts of the disease and offer the appointments to the doctors.

This project can offer the users to know the new specialist equipment in the medical industry and the hospital details.

- ✓ On Line Appointments for the Patients
- ✓ Free Medical Advice for the Patients
- ✓ Doctor Assigning related to Patients Disease.

Hence to overcome all the drawbacks of the existing systems we are introducing and implementing the online healthcare system using cloud computing concepts which will be efficient for providing online health check-ups booking facilities with discounted rates, to get information about preventive measures and tips to avoid contagious diseases, provide different path labs and System will be able to keep track of user's health check-ups records.

5. System Design



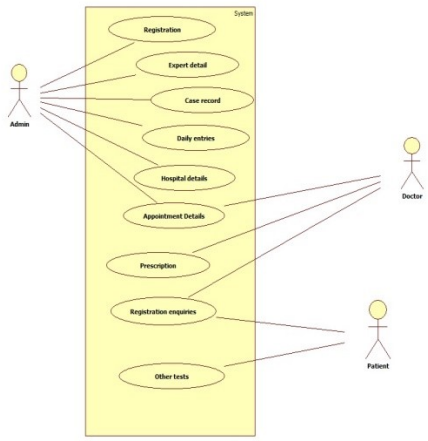
This system has perform the e-healthcare system process in cloud platform .This structure has express three modules as Patient, Doctor, Administrator those interact with healthcare application. These modules do the process of Store, retrieve, and update the data into

the system database .All these data has stored in cloud Storage. It helps manage these huge volume of Healthcare data as easy access.

III. RESULTS AND DISCUSSION

1. UML Diagram

Use case diagram:



2. Modules

This E-healthcare system project have a three specific Modules which shown below:

Patient
Administrator
Doctor

Patient: In this project patient modules have some of functions as follows:

Login.
Registration.
Edit profile.
Consult doctors.
Ask prescription.
Ask appointment.
View report.

Administrator:

Functions:
Login.
View Records.
Manage Health Information.
Assign appointment.

Doctor:

Functions:
Login.
Get the appointment.
Provide Medicine.
View report.

3. System Requirement

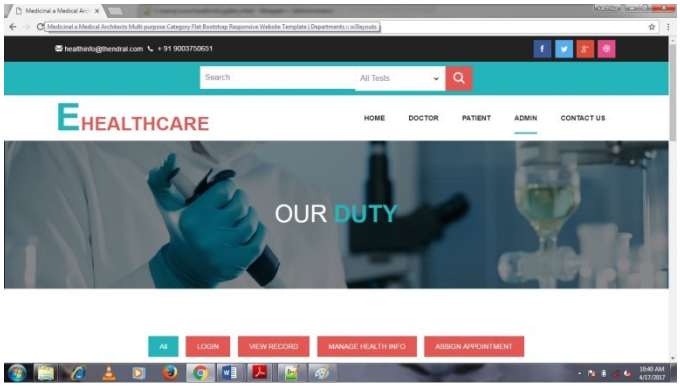
Software Requirements:

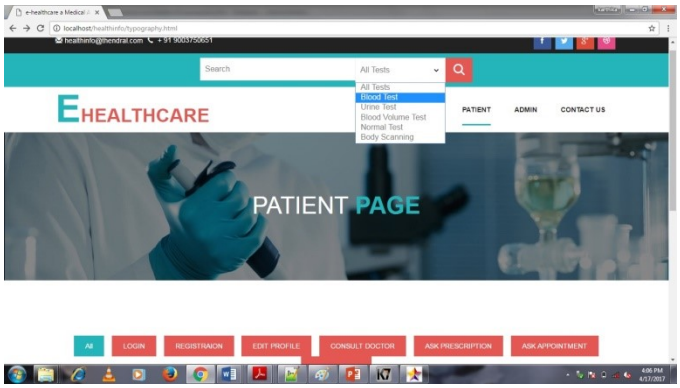
Operating System : Windows XP and above
Font end : html
Back end : PHP and Cloud
Scripting Language : Java

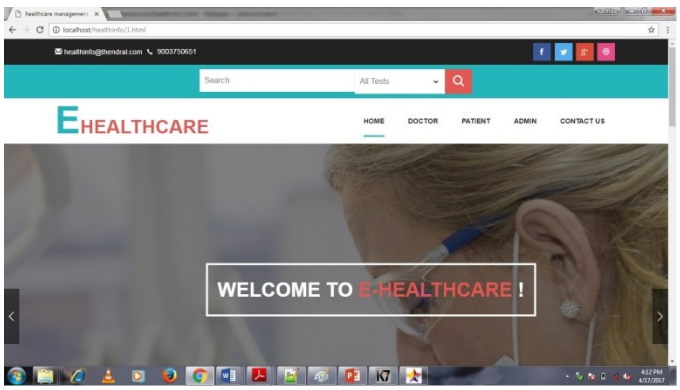
Hardware requirements:

Processor : Intel Duel Core
Hard disk : 60GB
Monitor : LCD Color
Mouse : optical Mouse
RAM : 512mb

RESULT







IV. CONCLUSION

Finally, it supports native multi-touch technology, which allows better manipulation of health care service and generally increases the application's usability. The Patient Health Record application acquires and displays patient records stored into the cloud. Data in Cloud are seamlessly stored and presented to the user as if they reside locally. This means that the Cloud repository is presented as a virtual folder and does not provide the features of a database scheme. In order to provide the user with data querying functionality, medical records and related data file.

V. ACKNOWLWDGEMENT

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