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Survey on - SaaS Based Integrated Clinical Management System

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ABSTRACT: Clinic Management System is a SaaS based model. The software and its associated data are hosted centrally (in the (Internet) cloud) and are accessed by users using a thin client, normally using a web browser over the Internet. Outpatient and Inpatient Billing modules with collection reports effectively control the flow of money. Patient data is stored in a single repository for better analysis. EMR (Electronic Medical Record) facilitate retrieving data quickly and accurately. Maintaining Medical records has never been so easy.e-Prescription facilitates tracking of patient's past medication history and reduce patient and pharmacy callback. Our System is Health Level 7 (HL7) Compliant. The quantified benefits of the clinic management system will be so effective performance to the management and the user by on screen access.

KEYWORDS: SaaS Model, Integration, Authorization

I. INTRODUCTION

Clinical Management system is a Cloud Based approach, using thin client the data is accessed by web browser over the internet. All functional operations are performed to implement this approach. Maintaining Medical record is very complicated in traditional approach, so we are implementing a cloud based approach for accessing and operation. An user authenticated login access is required to access the SaaS based clinical Management System. Every user have their individual login access, based on constraint departments. Here the modules are created to reduce the complexity in department wise operations. Every individual department are restricted through an on screen access. Only an authenticated user can able to access the screen and other restricted.

The motivation of integration of other branch database is to minimize the data loss of patient, and avoiding physical data loss. Every branch has a single repository at the same time a centralized data repository is maintained for avoiding crash in database. When branch repository is crashed/destroy it saves its backup in centralized repository. Each data is very important to the hospital, even a single loss degrade the repetition of hospital.

Authorization or roles and management is provided by system administrators, assigning roles, tasks etc. Onscreen access is implemented for restricting the user to not view other modules and operations.

II. RELATED WORKS

“Clinical Management System”

Author/year : Lingli Fu1 Hebei University., Sheng Ding2,; Rayse Information Technology/ 2010

Description:

Increasingly adopting electronic systems for acquisition, storage, and retrieval of medical information has been stimulated by the growing complexity of medical care, and the needs for standardization, quality control, and retrievability of clinical data. Clinical data management becomes demanding profession as high quality data is being requested and stressed by both government agent and commercial organization on pharmaceutical research and development [1-2].

CDMS (clinical data management system) is the system used in clinical research to manage the data of a clinical trial. The clinical trial data gathered at the investigator site in the case report form are stored in the CDMS. According to reports, the United States no longer accept paper-based data submission unless special permission. Similarly, there are many government funds supporting electronic clinical data. Here the drawbacks of this paper Data modules are



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verified by data director, It consumes time for accessing and providing data, No document management system, No data mining tools for fast retrieval of data, Level of security issues.

“Evolving Intelligent Agents for Hospital Management System”

Author/year: Chao-Tung, Yang Lung-Teng Chen Tunghai University/ 2010

Description:

. Large scale cluster based on cloud technologies has been widely used in many areas, including the data center and cloud computing environment. The purpose of presenting the research paper in this field was to solve the challenge in Medical Image exchanging, storing and sharing issues of EMR (Electronic Medical Record). In recent years, many countries invested significant resources on the projects of EMR topics. The benefit of the EMR included: Patient-centered Care, Collaborative Teams, Evidence-based Care, Redesigned Business Processes, Relevant Data Capture and Analysis and Timely Feedback and Education. For instance, the ARRAHIT project in United States (2011 - 2015), Health Info way project in Canada (2001 - 2015) and NHIP project in Taiwan, etc. Aim to the topic of EMR, we presented a system called MIFAS (Medical Image File Accessing System) to solve the exchanging, storing and sharing on Medical Images of crossing the different hospitals issues.

Through this system we can enhance efficiency of sharing information between patients and their caregivers. Furthermore, the system can make the best possible patient-care decisions. Here the drawback of this paper The intelligent system can taken the requirement but gathered requirement is right or wrong will decided by the human factors. Here the drawback of this paper has the intelligent system can take the requirement but gathered requirement is right or wrong will decided by the human factors, The four agents should communicate each other is mandatory it leads to failure of information, it does not collect the requirement of the particular user, user need to perform the same task again and again, there is very less work done in the field of gathering user requirement after software deployment.

“Criteria for the Evaluation of a Cloud-Based Hospital Information System Outsourcing Provider”

Author / year: Chinyao Low & Ya Hsueh Chen / 2011

Description:

As cloud computing technology has proliferated rapidly worldwide, there has been a trend toward adopting cloud-based hospital information systems (CHISs). This study examines the critical criteria for selecting the CHISs outsourcing provider. The fuzzy Delphi method (FDM) is used to evaluate the primary indicator collected from 188 useable responses at a working hospital in Taiwan. Moreover, the fuzzy analytic hierarchy process (FAHP) is employed to calculate the weights of these criteria and establish a fuzzy multi-criteria model of CHISs outsourcing provider selection from 42 experts. The results indicate that the five most critical criteria related to CHISs outsourcing provider selection are (1) system function, (2) service quality, (3) integration, (4) professionalism, and (5) economics. This study may contribute to understanding how cloud based hospital systems can reinforce content design and offer a way to compete in the field by developing more appropriate systems.

“Robotics and Computer – Integrated Manufacturing”

Author / year: Xun Xu*/2011

Description:

Cloud computing is changing the way industries and enterprises do their businesses in that dynamically scalable and virtualized resources are provided as a service over the Internet. This model creates a brand new opportunity for enterprises. In this paper, some of the essential features of cloud computing are briefly discussed with regard to the end-users, enterprises that use the cloud as a platform, and cloud providers themselves. Cloud computing is emerging as one of the major enablers for the manufacturing industry; it can transform the traditional manufacturing business model, help it to align product innovation with business strategy, and create intelligent factory networks that encourage effective collaboration. Two types of cloud computing adoptions in the manufacturing sector have been suggested, manufacturing with direct adoption of cloud computing technologies and cloud manufacturing—the manufacturing version of cloud computing. Cloud computing has been in some of key areas of manufacturing such as IT, pay-as-you-go business models, production scaling up and down per demand, and flexibility in deploying and customizing solutions. In cloud manufacturing, distributed resources are encapsulated into cloud services and managed



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in a centralized way. Clients can use cloud services according to their requirements. Cloud users can request services ranging from product design, manufacturing, testing, management, and all other stages of a product life cycle.

“Designing and Deploying a Hospital Management Application in Google cloud and Performance Study of the application”

Author / year: Siva Manaswini Malladi, S. Vadivel/2012

Description:

Web Services are internet enabled software components. By composing web services we can provide integration of Enterprise applications. Web Services are being used extensively by many enterprises like IBM, Microsoft and oracle every day. SOAP and REST are very popular types of web services. A Hospital Management Application is implemented as a web service that can perform functions like online appointment booking, preparing a prescription online, online room reservation, storing patient's medical history etc. The login forms of this application are made secured by computing the digest of the login details. The application is designed and developed using Eclipse, Google SQL cloud and Google App Engine. The application designed and developed is deployed to the Google App Engine to make it available online and to facilitate online transactions via the internet. The scalability test of the cloud enabled hospital management system has also been done using a custom developed software tool.

“Cloud Service Platform - Hospital Information eXchange”

Author / year: Zhou Fang, Cheng Fang, Wei Li, Fang Zhiyuan/2011

Description:

Health Information eXchange (HIX) is a part of Happiness Cloud Service Platform of Happiness Guangdong in Guangdong Province of China based on innovation of cloud-based business model. This article illustrates the hospital health care business services system based on cloud computing. major business functions of HIX includes integrated mobile medical information services, and mobile health information services. Key cloud service platform capabilities include appointment of HIX registration, doctor-patient interaction and Health Manager System, medical statistical analysis, and the other integrated support module including service platform and platform management provided by two major cloud computing technologies of SaaS and PaaS. Medical cloud services of HIX is an innovative business model for cloud computing, that is, the medical and health services provided to the public going through by cloud computing

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