Literature Survey

Date	20 September 2022
Team ID	PNT2022TMID03446
Project Name	ANALYTICS FOR HOSPITALS' HEALTH-CARE DATA
Maximum Marks	4 Marks

INTRODUCTION

"What other people think" has always been an important piece of information for most of us during the decision-making process. The Internet and the Web have now (among other things) made it possible to find out about the opinions and experiences of those in the vast pool of people that are neither our personal acquaintances nor well-known professional critics — that is, people we have never heard of.
And conversely, more and more people are making their opinions available to strangers via the Internet. The interest that individual users show in online opinions about products and services, and the potential influence such opinions wield, is something that is a driving force for this area of interest. And there are many challenges involved in this process that needs to be walked all over in order to attain proper outcomes. In this survey, we analyzed the basic methodology that usually happens in this process and measures that are to be taken to overcome the challenges being faced.

Healthcare analytics is the process of analyzing current and historical industry data to predict trends, improve outreach, and even better manage the spread of diseases. The field covers a broad range of businesses and offers insights on both the macro and micro level. It can reveal paths to improvement in patient care quality, clinical data, diagnosis, and business management.

When combined with business intelligence suites and data visualization tools, healthcare analytics help managers operate better by providing real-time information that can support decisions and deliver actionable insights.

For hospitals and healthcare managers, healthcare data analytics provide a combination of financial and administrative data alongside information that can aid patient care efforts, better services, and improve existing procedures.

Healthcare BI suites tend to emphasize broad categories of data for collection and parsing: costs and claims, research and development, clinical data alongside patient behavior and sentiment.

1.Analysis of Research in Healthcare Data Analytics

YEAR:June 2016

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Amir Ghapanchi

The main aim of this paper is to provide a deep analysis on the research field of healthcare data analytics. This paper is analyzing the previous studies and works in this research area, as well as highlighting some of guidelines and gaps. This study has used seven popular databases and selected most relevant papers, in order to conduct this paper.The paper has listed some data analytics tools and techniques that have been used to improve healthcare performance in many areas such as: medical operations, reports, decision making, and prediction and prevention system. Moreover, the systematic review has showed an interesting demographic of fields of publication, research approaches, as well as outlined some of the possible reasons and issues associated with healthcare data analytics, based on geographical distribution theme.
This paper aims to proof that healthcare data analytics techniques are not efficient enough and suitable anymore these days in order to manage big data issue and improve healthcare data analytics due to the rapid growth and evolution of technology. Moreover, it's also aims to promise professionals of a better quality of medical results, as well as reduce time needed to analyze healthcare data by keeping systems up to-date and sorting medical data in a logical structure along with accessing and retrieving patient's historical data fast and smoothly. In order to meet our goals, the proposed study is going to discuss critically weaknesses, disadvantages, problems and gaps of traditional healthcare data analytics techniques in order to manage healthcare big data. Also, it's going to develop a healthcare data analytic technique that will promise for a better medical practice and healthcare data predictive analytics based on filling gaps of traditional healthcare data analytics techniques and overcoming its problems.
As study in the area of healthcare data analytics, hospitals and clinics are looking for a new data mining techniques that will suite evolution of information technology and analyze a huge amount of complex data.
The proposed technique is recommended rather than offered, since it will facilitate and enhance healthcare practice, by enabling systems to use data and analyze it efficiently and smoothly, because it will ed technique,
since it will reduce their time and efforts, therefore this technique focused also on adding a true assistance to their job to run smoothly as its really stressful and valuable, so they need a technique that facilitates their job and save their efforts such as: retrieving historical and old data quickly, sorting data in a logical structure way and keep it up to date, which will help them to discover hidden patterns and extract information effortlessly and efficiently.This technique is promising a better results and more benefits if it's applied correctly and properly.

2.Big data in healthcare: management, analysis and future prospects

YEAR: June2019

AUTHORS:Sabyasachi Dash,
Sushil Kumar Shakyawar,
Mohit Sharma &
Sandeep Kaushik

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‘Big data’ is massive amounts of information that can work wonders. It has become a topic of special interest for the past two decades because of a great potential that is hidden in it. Various public and private sector industries generate, store, and analyze big data with an aim to improve the services they provide. In the healthcare industry, various sources for big data include hospital records, medical records of patients, results of medical examinations, and devices that are a part of internet of things. Biomedical research also generates a significant portion of big data relevant to public healthcare. This data requires proper management and analysis in order to derive meaningful information. Otherwise, seeking solution by analyzing big data quickly becomes comparable to finding a needle in the haystack. There are various challenges associated with each step of handling big data which can only be surpassed by using high-end computing solutions for big data analysis. That is why, to provide relevant solutions for improving public health, healthcare providers are required to be fully equipped with appropriate infrastructure to systematically generate and analyze big data. An efficient management, analysis, and interpretation of big data can change the game by opening new avenues for modern healthcare. That is exactly why various industries, including the healthcare industry, are taking vigorous steps to convert this potential into better services and financial advantages. With a strong integration of biomedical and healthcare data, modern healthcare organizations can possibly revolutionize the medical.Therapies and personalized medicine.

Additionally, with the availability of some of the most creative and meaningful ways to visualize big data post-analysis, it has become easier to understand the functioning of any complex system. As a large section of society is becoming aware of, and involved in generating big data, it has become necessary to define what big data is. Therefore, in this review, we attempt to provide details on the impact of big data in the transformation of global healthcare sector and its impact on our daily lives.

3.Hospital Healthcare System

YEAR:2018

AUTHOR: Rubel Rana, Uttara University, Dhaka, Bangladesh

Hospital Management System provides the benefits of streamlined operations, enhanced administration & control, superior patient care, strict cost control and improved profitability. HMS is powerful, flexible, and easy to use and is designed and developed to deliver real conceivable benefits to hospitals. More importantly it is backed by reliable and dependable support.
The project 'Hospital Management System' is based on the database, object oriented and networking techniques. As there are many areas where we keep the records in database for which we are using MY SQL software which is one of the best and the easiest software to keep our information. This project uses JAVA as the front-end software which is an Object Oriented Programming and has connectivity with MY SQL. Hospital Management System is custom built to meet the specific requirement of the mid and large size hospitals across the globe. All the required modules and features have been particularly built to just fit in to your requirement. This package has been widely accepted by the clients in India and overseas. Not stopping only to this but they are highly satisfied and appreciating. Entire application is web based and built on 3 tier architecture using the latest technologies. The sound database of the application makes it more users friendly and expandable. The package is highly customizable and can be modified as per the needs and requirements of our clients. Prolonged study of the functionalities of the hospital and its specific requirement has given it a wonderful shape both technically and usability wise. It covers all the required modules right from Patient Registration, Medicine details, Doctor, Wards, , Admin, Store, Patient appointment, bill payment, record modification, discharge details etc.
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, staff scheduling, operating theater 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 HMS 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 inconsistency. The healthcare sector is widely considered as one of the most important industries in information technology (Wager 2005). More and more, information technology has been considered as a practice that facilitates healthcare performance through using data and information efficiently within the healthcare sectors. Therefore, Wager (2005) said that in order to understand the relation between information technologies and healthcare, we first need to understand what are the technologies used in healthcare.

4.Data Analytics in Healthcare Systems – Principles, Challenges, and Applications

YEAR: November 2019

DOI:10.13140/RG.2.2.35189.19686

AUTHORS:Sura abed Sarab,Universit of Baghdad

Hospital Management System provides the benefits of streamlined operations, enhanced administration, control, superior patient care, strict cost control and improved profitability.HMS is powerful, flexible, and easy to use and is designed and developed to deliver real conceivable benefits to hospitals. More importantly it is backed by reliable and dependable support. The project 'Hospital Management System' is based on the database, object oriented and networking techniques. As there are many areas where we keep the records in database for which we are using MY SQL software which is one of the best and the easiest software to keep our information. This project uses JAVA as the front-end software which is an Object Oriented Programming and has connectivity with MY SQL. Hospital Management System is custom built to meet the specific requirement of the mid and large size hospitals across the globe. All the required modules and features have been particularly built to just fit in to your requirement. This package has been widely accepted by the clients in India and overseas. Not stopping only to this but they are highly satisfied and appreciating. Entire application is web based and built on 3 tier architecture using the latest technologies. The sound database of the application makes it more users friendly and expandable. The package is highly customizable and can be modified as per the needs and requirements of our clients. Prolonged study of the functionalities of the hospital and its specific requirement has given it a wonderful shape both technically and usability wise. It covers all the required modules right from Patient Registration, Medicine details, Doctor, Wards, , Admin, Store, Patient appointment, bill payment, record modification, discharge details etc. Human Body is a very complex and sophisticated structure and comprises of millions of functions. All these complicated functions have been understood by man him, part-by-part their research and experiments. As science and technology progressed, medicine became an integral part of the research. Gradually, medical science became an entirely new branch of science. As of today, the Health Sector comprises of Medical institutions i.e. Hospitals, HOSPITALs etc. research and development institutions and medical colleges. Thus the Health sector aims at providing the best medical facilities to the common man. Problem Statement Since Hospital is associated with the lives of common people and their day-to-day routines so I decided to work on this project. The manual handling of the record is time consuming and highly prone to error. The purpose of this project is to automate or make online, the process of day to-day activities like Room activities; Admission of New Patient, Discharge of Patient, Assign a Doctor, and finally compute the bill etc. I have tried to design the software in such a way that user may not have any difficulty in using this package further expansion is possible without much efforts.

5.Hospital Management System

YEAR: 2014
AUTHORS: M.Sowmya
D.Anil Chandra Varma
M.Sailaja
M.Venugopalarao
T.Prasanth

The purpose of the project entitled as “HOSPITAL MANAGEMENT SYSTEM” is 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 Management 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.

The project Hospital Management system includes registration of patients, storing their details into the system, and also computerized billing in the pharmacy, and labs. The software has the facility to give a unique id for every patient and stores the details of every patient and the staff automatically. It includes a search facility to know the current status of each room. User can search availability of a doctor and the details of a patient using the id. The Hospital Management 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 interface is very user-friendly. The data are well protected for personal use and makes the data processing very fast. Hospital Management System is powerful, flexible, and easy to use and is designed and developed to deliver real conceivable benefits to hospitals. Hospital Management System is designed for multispeciality hospitals, to cover a wide range of hospital administration and management processes. It is an integrated end-to-end Hospital Management System that provides relevant information across the hospital to support effective decision making for patient care, hospital administration and critical financial accounting, in a seamless flow. Hospital Management System is a software product suite designed to improve the quality and management of hospital management in the areas of clinical process analysis and activity-based costing. Hospital Management System enables you to develop your organization and improve its effectiveness and quality of work. Managing the key processes efficiently is critical to the success of the hospital helps you manage your processes.

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