Big Data for Healthcare in Heart Disease

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ABSTRACT: Recently, the massification of new technologies, which has been adopted by a large majority of the world population, has accumulated a tremendous amount of data, including clinical data. This clinical data have been gathered up and interpreted by medical organizations in order to gain insights and knowledge useful for clinical decisions, drug recommendations, and better diagnoses, among many other uses. This paper highlights the enormous impacts of big data on medical stakeholders, patients, physicians, pharmaceutical and medical operators, and healthcare insurers, and also reviews the different challenges that must be taken into account to get the best benefits from all this big data and the available applications.
KEYWORDS: KNN, Map Reduce, Hadoop, SVM

I.   INTRODUCTION

The massification of new technologies, which has been adopted by a large majority of the world population, has accumulated a tremendous amount of data, including clinical data. This clinical data have been gathered up and interpreted by medical organizations in order to gain insights and knowledge useful for clinical decisions, drug recommendations, and better diagnoses, among many other uses. This highlights the enormous impacts of big data on medical stakeholders, patients, physicians, pharmaceutical and medical operators and healthcare insurers, and also reviews the different challenges that must be taken into account to get the best benefits from all this big data and the available applications. Big data in healthcare is a term used to describe massive volumes of information created by the adoption of digital technologies that collect patients' records and help in managing hospital performance. The application of big data analytics in healthcare has a lot of positive and also life-saving outcomes it will use specific health data of a population (or of a particular individual) and potentially help to prevent epidemics, cure disease, cut down costs, etc. Big Data has been used by many researchers in

diverse fields to support their conclusions and findings. For example, in the transport sector, Big Data Analytics technologies were used in order to improve the service quality, traveler satisfaction and management process, and can suggest ways to optimize customer complaints services [28]. In [29] the effectiveness of Big Data for monitoring smart grid operations is emphasized. The work in [48] is focused on the impact of Big Data Analytics in optimizing airline routes. Also, Big Data has been used in the field of education, where it can play a role in influencing student engagement and behavior.

Section 2 we have going to explain the Existing System what are the disadvantages of the Existing System. Section 3 we have explained the Proposed System and how we have overcome the Existing System disadvantages, Section **4 we have ecplained which Methodology have been used , Section 5 how we have implemented our project by using Map Reduce, Hadoop, KNN and SVM algorithms, Section 6 we have explained our code Section 7 Conclusion and Section 8 References**

II. EXISTING SYSTEM

During this last decade, data has been growing exponentially in an unexpected way.. Formerly, data was presented in structured formats and stored in relational databases arranged in rows and columns, with limited sources related to internal operations. However,, many researchers believe that most of this data is unstructured and the use of non-relational (NoSQL) databases is necessary for its management**.**

DISADVANTAGES:
Poor accuracy
Complex system Costly
Poor performance
III PROPOSED SYTEM

The notable evolution in the growth of data has given arise to this new concept called:

''Big Data''. Big Data is the Information asset characterized by such a High Volume, Velocity and Variety to acquire specific technology and analytical methods for its transformation into Value''. Accordingly, a low density set of raw data is processed and analyzed to assist decision maker in their decisions and projects. Big Data Technologies involve commercial and open source software and services for storage, analyzing, querying, access, management and processing of data. Currently, in the healthcare sector, recommendation systems are increasingly used in order to provide medical recommendations for drugs, diagnoses, and treatment plans.

Advantages:
•   Complexity is decreased
•   Accuracy is increased

learning store provided by the suggested architecture. The results of batch processing will be stored into model store.

High Level Design

High level software design which is also known as software architecture is the first step to analyses and consider all requirements for a software and attempt to define a structure which is able to fulfill them. For this, the Non-Functional Requirements has to be considered such as scalability, portability and maintainability. This first design step has to be more or less independent of the programming language big picture. The highest level solution design should briefly describe all platforms, systems, products, services and processes that it depends upon and include any important changes that need to be made to them. A high-level design document will usually include a high-level architecture diagram depicting the components, interfaces and networks that need to be further specified or developed.
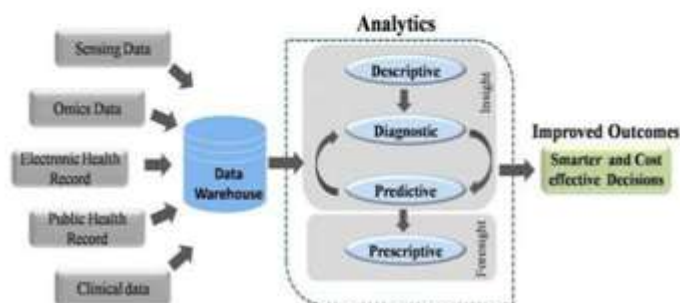
IV. SYSTEM ARCHITECTURE

The most creative and challenging face of the system development is System Design. It provides the understanding and procedural details necessary for implementing the system recommended in the feasibility study. Design goes through the logical and physical stages of development. In designing a new system, the system analyst must have a clear understanding of the objectives, which the design is aiming to fulfill. The first step is to determine how the output is to be produced and in what format. Second, input data and master files have to be designed to meet the requirements of the proposed output. Design of a

system can be defined as a process of applying various techniques and principles for the purpose of defining a device, a process or a system in sufficient detail to permit its physical realization. Thus system design is a solution to "how to" approach to the creation of a new system. Thus important phase provides the understanding and the procedural details necessary for implementing the system recommended in the feasibility study. The design step provides a data design, architectural design, and a procedural design The objective of this component is to build a model capable of producing predictions for new observations based on the previous data. The quality of a given predictive model is evaluated by its accuracy. Those models are developed based on tools available in the statistical and machine

A deep analysis of the healthcare data can help care providers manage symptoms of patients online and adjust prescriptions.

For instance, with the development of wearable sensor devices, like Apple Watch and Sports bracelets, information related to physical health checkups, including blood pressure, height, weight, blood-glucose levels and blood-calcium levels, can be constantly monitored in order to give a detailed vision about the condition of the patient's health.

These indicators help physicians monitor patients and consequently unnecessary visits to the doctor can be avoided and at the same time.

Big Data analytics help physicians to avoid medication errors due to drug interactions or incorrect dosages, which could easily lead to a critical situation. The Big Data allows the physicians to assess a patient's records in full including the recommended medications.

V METHODOLOGY
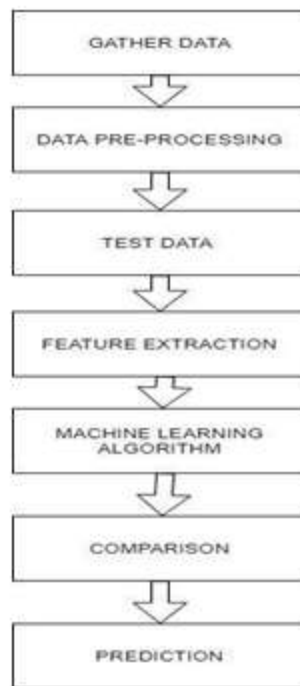
VI IMPLEMENTAION
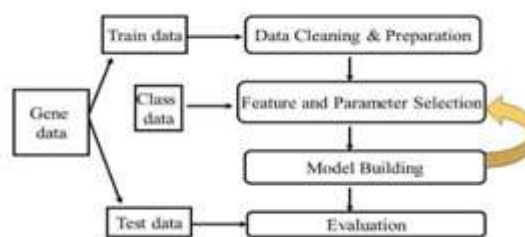
Here we have collected the data from the hospital and then train those data by cleaning and extracting the features and by using KNN and SVM algorithms for classification and for high accuracy of data. Then by building the model and then we will compare those data's with user input data's and evaluate the results and display the data to the users of their stage of the heart disease .

VI. CONCULSSION

This Project aimed to emphasize the enormous implications of Big Data Techniques and Technologies on the performance and outcomes of Healthcare organizations. Based on the reviewed cases, one can confirm the countless opportunities offered by Big Data and its analysis. The analytical capabilities of Big data techniques and technologies as well as the consistent knowledge and valuable insights that can be derived from stored Big Data are useful for making predictions, recommendations, medicaldiagnosis, resource allocations and personalized treatment plans. This ability may have a positive effect on the quality of healthcare and its outcomes. Here, Big Data Analytics was classified into four types: Descriptive Analytics, Prescriptive Analytics,Predictive Analytics and Discovery Analytics. Finally, based on the Big Data features identified, along with Big Data Chain Value, many of the challenges that must be tackled, wereidentified.

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