ACCOMPLISHMENT OF HOSPITAL QUEUE PROPOSITION SYSTEM USING PARALLEL PATIENT TREATMENT MECHANISM WITH RANDOM FOREST ALGORITHM

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Abstract: Now a day's hospitals having large number of patient so victorious queue management is unsupportable in different methodologies. In essential and annoying waits for long periods lead to substantial human resource and time wastage and increase the frustration endured by patients. for every patient within the queue, the entire treatment time of all the patients before him is that the time that he should wait. Patients wait delay and patient overcrowding is one of the major problems faced by hospital. A patient is usually required to undergo various examinations, inspection or tests according to his conditions. This waiting time increases the frustration on patients. Patient Queue Management and wait time prediction form challenging and complicated job because each patient might require different phases and operations such as check-up and various tests. Random Forest Algorithm(RFA) is used for Data mining of big data Furthermore, this implementation can also be applied to Time Prediction. Use of HBase will give historical data of patients. HQR and RF are parallelized on Hadoop Platform. Android Platform is used for providing Graphical User Interface.
KeyWords: Hospital Queue Recommendation(HQR), Random Forest algorithm.

I. INTRODUCTION

Currently, most hospitals are overcrowded and they are not efficient in providing proper queue management. Providing Patient queue management and waiting time prediction is challenging and tedious job as each patient vary in different operations such as checkup, different tests like X-ray, CT scan, blood tests, sugar level. Some of the tasks are independent whereas some tasks are waiting to complete other dependent tasks. Most patients must have to wait in different queues for different treatments. In order to complete required treatment in a shortest duration of time waiting time of each task is predicted in real time. PTTP algorithm is proposed as learning algorithm for calculating the waiting time[1].Patient Treatment Time Prediction(PTTP) uses RF algorithm for its implementation. Based on this Hospital Queue Recommendation(HQR) system is diagnosed. In the Computer System we have mainly three types of Resources, they are Software, Hardware and Data. Data is the most important resource of computer system, because whatever computing we are doing is just because of data. The massive unstructured data is called Big Data. Basically, The term big data not only means large volume of data but also other

features that differentiate it from the concepts of ''massive data or large volume of data''. [3] Now in present days very less amount of data is generated in structured form as compare to unstructured data e.g. Text files, sensor data, log data, web data, social networking data or different varieties of data. For Big Data management Hadoop is used. Hadoop is a framework that provides distributed processing of large data sets across cluster using a simple programming model. It is an open source data management which uses distributed processing.[3]

II. RELATED WORK

Quiet line administration and hold up time forecast shape a testing and complex employment in light of the fact that every patient may require distinctive operations, for example, a checkup, different tests, e.g., a sugar level or blood test, Xbeams or a CT filter amid treatment. So there are five noteworthy approachs utilized as a part of this framework Big Data administration with Historical Dataset, Preprocessing of information, Use Learning Algorithm PTTP (understanding Treatment Time prediction)with base of RF (Random Forest) Algorithm Calculate the Waiting Time in Hospital Queue Recommendation. An irregular timberland enhancement calculation is performed for the PTTP display. The line holding up time of every treatment assignment is anticipated utilizing the prepared PTTP demonstrate. A parallel HQR framework is presented, and a productive and helpful treatment plan is suggested for every patient. The patient may experience different treatment operations, for example, CT check, MR filter and an installment errand. These arrangement of treatment operations are submitted to leader and suggestion module by means of versatile interface or web application. The anticipated holding up Time of the greater part of the treatment assignments is ascertained by PTTP display. After this a treatment proposal with minimum holding up time is exhorted [1]. Healing facility Information for the most part contains a data framework, for example, Electronic Medical Records (EMR) and Picture chronicling And Communication System (PACS).Hospital information is focus for the most part stores the Structured and Unstructured Data. Most information utilized as a part of the EMR is Structured Data which incorporates data of a patient, data of a treatment, demonstrative data and the reports [3] .Hadoop is a system which gives disseminated handling of vast informational collections crosswise over bunch utilizing a straightforward programming model. Fundamentally Apache Hadoop Framework comprises MapReduce and

Hadoop dispersed document framework. Hadoop conveyed record framework, as Map decrease give a basic programming model well as other related activities e.g. Apache Hive, Apache HBase and so on. The essentially three vital parameters of hadoop's bunch; they are CPU, MEMORY and DISK. Every one of the hubs are devoted to work for the hadoop errands as it were. This can be helpful for proficient administration of bunch to give limit, versatility and execution of group with the end goal that provisioning of assets will be effective [4]. Arbitrary woodland is most prevalent information characterization and relapse calculation for machine learning. This framework presented a Scalable Random Forest Algorithm which depends on MapReduce Technique .The calculation is isolated into three phases: instating, producing and voting. SMRF calculation has primary goal of enhancing the conventional arbitrary woods calculation in light of MapReduce model. SMRF algorithm provide scalable performance, and it can negotiate with the distributed computing environments to decide its trees scale.[6]

III. PROPOSED WORK

Here in this paper we have proposed one calculation and a framework called HQR to lessen the disappointment of patients in the Hospital. The proposed calculation is PTTP with enhanced RF calculation as shown in Fig.1. The contribution for PTTP was memorable information gathered from different healing facilities. Before preparing the information with PTTP calculation we have to pre-handle the information like expelling undesirable information. Pre-handling assignments incorporate accumulate information from various medications errands, computing new component variable and expelling conflicting information. When we got reliable information we have to prepare the information by utilizing PTTP calculation. Based on the survey we have understood that the system will handle structured data including patient information, treatment information, diagnostic information and reports. For training purpose we use RF algorithm and we develop HQR system for patients. Patients can check their waiting time by using mobile phones and thus can reduce their frustration

IV. CONCLUSION

In this paper we have reviewed on the technologies which are being used for hospital queuing behavior. further we have introduced different techniques used to implement them. Present methods include hadoop, sql, Hbase, RF algorithm. Later on we have compared the different techniques used by researchers in their systems, such as extension in RF algorithm, storing of structure data into the database etc. This comparison will help us in building our system more convenient and useful. From the research we have proposed the system which will predict time required for particular task.

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