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INQUIRY MANAGEMENT FOR HOSPITAL WEBSYSTEM USING SaaS

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Abstract:This paper will provide an Inquiry management service for various hospitals which will be working online to help people from various places. This system, targets every single user in the present Tech world. More specifically, the application will allow the users to enter a query and get the response from the hospital server. This is very useful in places like hospitals. The current system does not possess proper database and the importance for such queries is less. This single response to these queries will benefit them on mining these data after an interval of time. Responses are given by the system staff. Every time when it is done, the status is updated in the backend for the respective query. The system staff can escalate the query if it is not able to reply for the query generated. The key challenge achieved here is that every single query is dealt with properly. For this proper dealing, the system application is made User-friendly.

The inquiries are first dealt with matching algorithm from which the member in the bottom of the stack holder list will be able to forward the inquiries easily. Later the prioritization technique to split the inquiries will help the clients to be served as quickly as possible. The data mining is later performed on these pile of queries stored, and a result is produced which is going to benefit the Organization by increasing the client-base. The application can be operated on various tools like PCs, Laptops, palmtop. The user interface is created with HTML5, CSS and pHP. Apache tomcat is used to connect to the database and the database is accessed by MYSQL.

***Keywords*:** Saas, Integration, Scheduling.

I. INTRODUCTION

This application is mainly for connecting the client to the hospital system. This aims at solving the basic queries of the clients of hospitals like doubts on symptoms. The system has used two algorithms the Text matching algorithms and the prioritization algorithm to make the application user friendly.
This application requires only a form being filled from the client side. On the server side, i.e., the hospital system various process are dealt with. Once the form is submitted in the website of the hospital, it is saved in the cloud system and it reaches to the server based on the location that the client chooses.

At the server end, after the mail reaches the system it undergoes the text matching algorithms which can actually give an idea for anyone to understand what the inquiry actually it is. At this time, the inquiries are split into four stages and they are PENDING INQUIRIES, CLOSED INQUIRIES, PROGRESS INQUIRIES and REPLIED INQUIRIES. Every inquiry on reaching the system will first be in the Pending list. Once it is dealt and replied, it enters into the REPLIED list. If the client replies back, then the inquiry goes to the PROGRESS list and finally if the client does not reply for the reply for a particular amount of time or if the communication is over, the inquiry is put into the CLOSED list.

A. Abbreviations and Acronyms

SaaS - Software as a Service
CRM - Customer Relation Model

II. LITERATURE SURVEY

[1]In the world of sales and marketing, there is a never ending quest for improved results which range from finding new, more cost effective ways to fill the funnel with qualified leads, to developing strategic processes to move prospects through the funnel quickly to close more deals. Finding the perfect formula to get leads into, and move leads through the funnel to improve your bottom line is a challenge that takes discipline and structure, and starts with strategiesfocused at the top level of the funnel—strategies for new leads. While inbound inquiries can come from various sources, according to a recent benchmark survey conducted, the web is a significant source of inquiries. In fact, the survey showed that on average, web inquiries represent 43% of the total inbound inquiries each company receives. With the growth in social media and online marketing activities driving the continuous increase in online inquires, the remainder of this report will focus on inbound web inquiries. It will highlight our findings around web inquiry management as well as industry best practices.

Figure1- Report generated from 50 different companies that use the inquiry management system

So, based on the statistics provided, where do you stand. Do you follow up on web inquiries within the first hour, or even better, within the first 5 minutes. Do you perform thorough prequalification on all Inquiries to identify budget, authority, need and timeframe before passing to sales closers. What about those leads that are qualified, but not quite sales ready. Are you executing consistent nurturing programs and campaigns to ensure your products and services staying on top of mind?

If answered yes to all of those questions, congratulations, you are on the right track. However, as revealed by the recent survey conducted by Invenio, many of you have areas where improvements may be needed. No matter where you stand, the information provided can be used as a guide to ensure you are headed in the right direction. Following the best practices outlined in this report will help you to shape your web inquiry management practices for maximized effectiveness, driving more leads through the funnel to improve your overall bottom line results.

[2]There is big amount of work on discovering duplicates in relational data; merely elite findings concentrate on duplication in additional multifaceted hierarchical structures. Electronic information is one of the key factors in several business operations, applications, and determinations, at the same time as an outcome, guarantee its superiority is necessary. Data superiority, on the other hand, can be adjusted by different kind of errors from the heterogeneous domains. Duplicates are several delegacy of the identical real world thing which is dissimilar from each other. Duplicate finding a little assignment because of the actuality that duplicates are not accurately equivalent, frequently because of the errors in the information. Accordingly, many data processing techniques never apply widespread assessment algorithms which identify precise duplicates. As an alternative, evaluate all objective representations, by means of a probably compound identical approach, to identifying that the object is real world or not. In this paper is a given detailed survey analysis and groundwork on duplicate detection in hierarchical data. Also this paper proposes a new idea i.e. use of pruning algorithm to detect similarity between the objects. This survey paper is useful to the persons who are doing research in Duplicate Detection in XML data or Hierarchical Data.

[3]In real-time data warehouses, data import is no longer implemented in the batched and periodic way during the idle time of data warehouses, but continuously ongoing. The updates of real-time data warehouses are conflict with queries against data warehouses. Thus the scheduling of updates and queries becomes a key issue. This paper proposes a priority-based balance scheduling algorithm (PBBS). Firstly, according to the response time requirements of queries and the different import levels of the data being updated, the algorithm gives different priorities to all tasks. Then it makes a parallel scheduling, considering the task priorities, the implementation conditions of task queues and the feedback of system resources. And it proposes a method that ensures data consistency for parallel tasks. Finally, the experiments show that the algorithm is not only able to adjust the resources allocation for updates and queries in accordance with user requirements, but also make rational use of system resources and ensure high-priority tasks are processed first. Thus it not only reduces the response time of the important queries, but enhances the data freshness of the important data.

[4]Based on a school's teaching resources and video-on-demand services in schools, through building a cloud environment and studying the storage layer's video data storage of the cloud storage and the management manner, this paper proposes a scheduling algorithm based on Priority(SAP). According to the priority of data block ,the algorithm schedules on mastering the supply and demand of data block comprehensively and accurately, and solves the system's launch delay and the continuity of streaming media player.

The system used NS2 as a simulator, and the output bandwidth of the user nodes is [200,600]Kb/s, access bandwidth is [400,1000] Kb/s, server output bandwidth is 100Mb/s. Streaming media file playback time is 30min in the data nodes of cloud store. Users join the network node shows Poisson distribution. Streaming media file playback speed is 400Kb/s. In order to compare the performance of SPA algorithm in the simulation experiment, Also implement the same strategy of the RF, Simulation results are Figure2 and Figure3 thoughtcomparing.

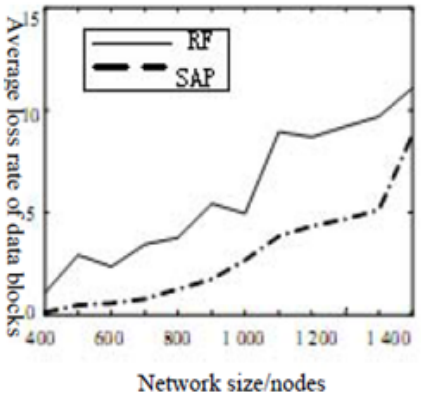

Figure 2- Average loss rate of data blocks

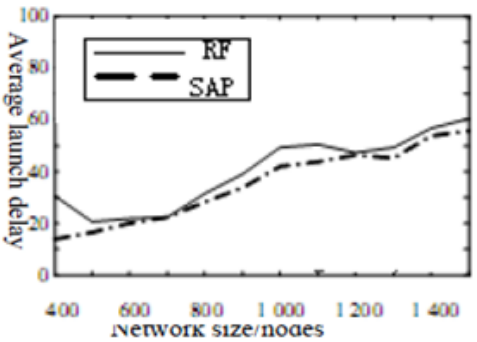

Figure 3- Average launch delay

It can be seen that indicators curve growth is slow and smooth from the above of the experimental, It is indicating that data of scarcity degrees and high urgent data blocks will be scheduling priority in the same bandwidth conditions, and can effectively reduce the loss rate, improve the system Continuous playback. System startup launch is correspondingly reduced.

III. PROPOSED SYSTEM

The proposed system will have an application that is going to be created in a user friendly manner. The queries submitted will be stored in a database. The queries will be forwarded to the respective stake holder.The system will make sure that the query is always replied to respective user.The system gives different access to different stake holders. After a time, the stored data is analyzed to produce a result benefitting the organization. This is done at regular intervals.

The existing system has the following issues. The sense of carelessness prevails as many organizations are not considering the queries as a part of their complete work.The queries are not forwarded to the respective people of the organization.The queries are not stored separately in case of proof checks. Count of the number of queries that are dealt with and number of properly responded queries.Details and status of the Queries.

The system architecture shown in Figure 4 defines the overall structure of the proposed system and functionalities of the entities involved in the system. It consists of a database server which is the cloud that stores all the information of the customer side who enters the details in the form present in the hospitals website. On submitting the form, the inquiry will reach the cloud server and from that it will reach into the server system. The server side(HOSPITAL) will react to the inquiry in very less time which is the aim of the project.

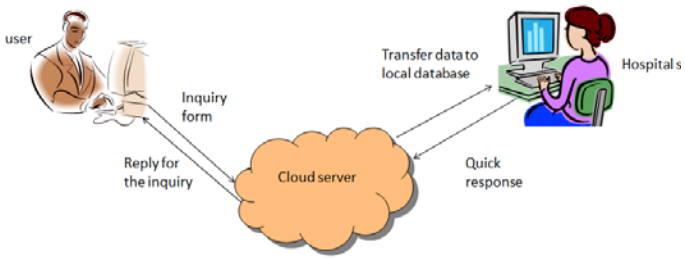

Figure 4 - System Architecture of the proposed system

Functional architecture is an architectural model that identifies the functions and their interactions for the corresponding system needs. The functional architecture for the proposed system is shown in Figure 5. The major modules of the system are: FORM-CRM INTEGRATION, INQUIRY SCHEDULING and FOLLOWUP GENERATION

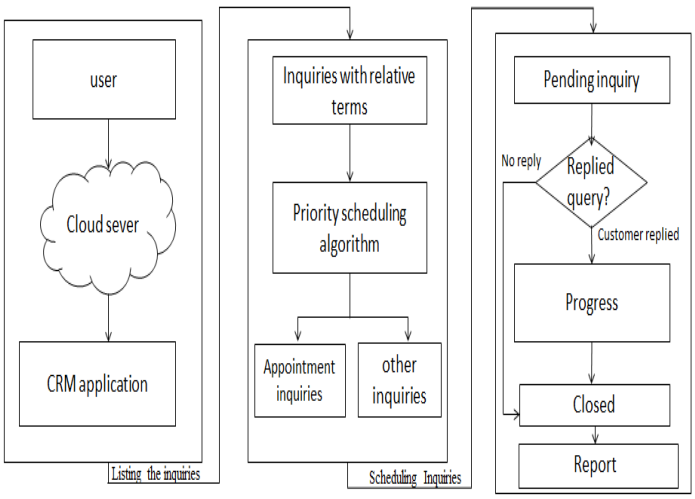

Figure 5- Functional Architecture

This system will cover the main problems of managing the amount of emails generated. This will help in segregating the important mails from the spams. The application will send the query to the mail only if needed. The other problem addressed here is having the data stored of the closed queries. The database will have all the queries that have come in as it is stored in the cloud.

The application uses text matching algorithm that will have related terms in application itself. This will help the system staff to navigate the mail to the related department in the hospital. This is shown in the figure 6

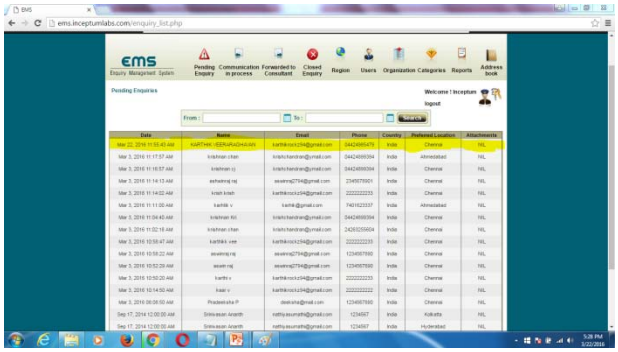

Figure 6- Output after text matching

The application will have prioritization scheduling. This helps in replying to all the easily solvable queries quickly. Our application will have the star concatenated aside which symbolizes the priority. It is shown in the fig 7

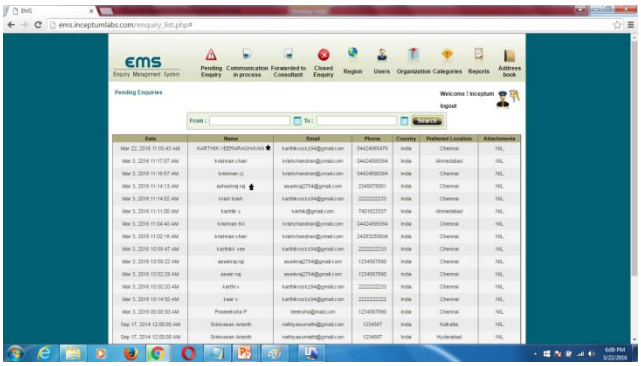

Figure 7 Inquiry Scheduling

The application will produce reports for every query.

IV. EXPERIMENTAL RESULTS

The time limit varies for different methods. The first curve symbolizes the email method. Every query is sent to the email separately. This makes it tough for the server system to respond as the amount of spam mails will also be high. The response time for each email will be very high here. By using our method, this has reduced the time, as every query is put into the application and forwarded to mail only when it is required. This will reduce the complexity of spam mails and ultimately increase the response time as only important queries are dealt with which is shown in Figure 8.

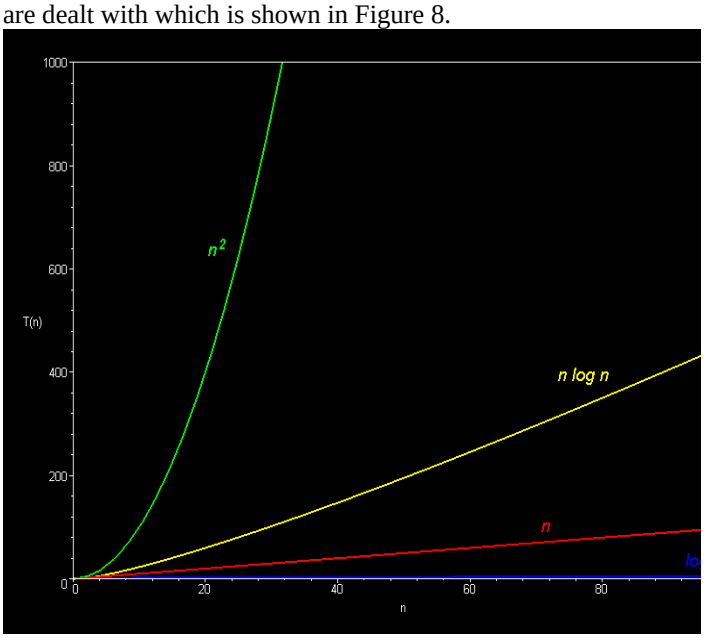

Figure 8- comparison between existing system and current system based on accuracy

V. CONCLUSION

The Inquiry management application for Hospital will feed the needs for many people who are seeking for treatment abroad. The facilities in their own country might not be available. This application will help one to fix appointments and contact Doctors in different countries. As the need for internet has been increasing, the cost factor is will help the clients from his pocket being emptied. Apart from cost efficiency, the time is also saved a lot. One does not have the need to wait for the Doctor's approval sitting in the hospital.

VI. FUTURE ENHANCEMENTS

With the future advancements and improvements it can said that there are lots of ways that this can be improved in many more ways. For instance it can get better by introducing methods like making the system automatic by introducing Knowledge engineering techniques. The appointment alone is given high priority in the proposed system. All the queries can be mined and a result can be produced. With this result, several other enquiries can be given priority.

VII. REFERENCES

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