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Reconciliation Management System

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ABSTRACT

Reconciliation refers to the process of comparing two organizational transaction accounts to ensure that the two records are in agreement. Accounting Reconciliation process is used to ensure that the money withdrawn from an account matches the actual money deposited. This is handled by making sure the balances match at the end of a particular accounting period. Reconciliation must be performed for all the balance sheet to display the financial records reliability. This paper discusses the Reconciliation using RTGS transaction and on comparing the two records the odd transactions will be highlighted and displayed out with the help of the GHIC (Greedy Hierarchical Item Set-Based Clustering) algorithm.

Keywords: Transaction, Reconciliation, Algorithm-GHIC (Greedy Hierarchical Item Set-Based Clustering).

I. INTRODUCTION

In banking sector the manual calculations between the transactions are really a heavy work and also very difficult to maintain the accuracy of the project. The process of finding the status of the required transaction from the huge large amount of transaction is really impossible. In section II, we are discussing about the today's management criteria of transactions with the clear explanation of the difficulties that are faced by them along with the reason for the actual enhancement of the process. In section III, the advantages of the new enhancement and the usage of the GHIC clustering algorithm and the beneficial of its usage are discussed deeply. It also defines the structure, behaviour, and more views of a system transaction process and it also gives the formal description and representations. In section IV, the results that are obtained from our discussion are explained deeply with the help of our enhanced algorithm and survey.

II. METHODS AND MATERIAL

A. Existing Transaction Process

In banking sector there exists two kinds of inter-bank transactions such as NEFT (National Electronic Fund Transfer) and RTGS (Real Time Gross Settlement) where both the systems are maintained by RBI (Reserve Bank of India).In NEFT, operations are on a Deferred Net Settlement (DNS) basis which settles transactions in batches only at a particular transaction timing. If any transaction occurs after the limited time then the fund transfer process should wait till the start of next transaction slot [1]. In NEFT there is a maximum limit for the amount to be transferred. The RTGS are primarily meant for large value transactions where the transactions are settled individually. It is defined as the continuous (real-time) settlement of funds transfers individually on an order by order basis (without netting). Existing transaction the returning of funds need to wait till the next transaction slot starts [2]. So to avoid the waiting time of the transaction and to enhance the accuracy of the process we go for the advanced method which is the reconciliation mechanism using the RTGS system.

B. Reconciliation on RTGS

This paper includes the concept of Reconciliation using RTGS system. This method guarantees the accuracy of the final report which is obtained as the output of comparing two different transactions of two different organizations. The report which is used for comparison will contain various fields and among that field one of them will be a primary key i.e., they can be user id which is unique for all users [3]. On comparing the

transaction for the same user based on their balance we can easily find out reconcile statement among that id.

a) Greedy Hierarchical Item Set-Based Clustering (GHIC) Algorithm

The best clustering algorithm is used for the process of grouping the transactions which will be easy for the process of reconciling the required data [4]. After obtaining the FIS, set of frequent access item sets we are creating a variable C0 which contain all the transactions. These two variables C0 and FIS are obtained as inputs and finally the output is obtained on the variable C which symbolically represents the cluster [5], [6], and [7].

Algorithm:

Inputs: $C_0=\{T_1,T_2,\ldots\ldots T_n\}$

$FIS=\{is_1,is_2,\ldots\ldots is_m\}$

Output: Cluster $C=\{C_1,C_2,\ldots\ldots C_j\}$

$C=\{C_0\}$
Repeat{
Choose any $X=\{T_1,T_2,\ldots\ldots T_n\}$
For each isr in FIS{
Let $C_a=\{T_k|T_k \in X \text{ and } is_r \subseteq T_k\}$;
Let $C_b=X-C_a$
Calculate Mr=M(ca,cb)
}
C=(C-X)U {Ca}U{Cb} ;
}

Then the required specific transaction is stored on the variable X then the specified function is carried on and as the final output the clustered data are obtained. Which is used for the further process? Figure 1 explains the algorithm that is carried on GHIC.

b) Elucidation of System Architecture

As the critical reconciliation process between the two organizational accounts are explained clearly with the help of the Figure 2. In this diagram the input from the organization is obtained and then then are taken for the reconciliation process and here the data are extracted using the GHIC algorithm and they are separated based on their transaction system such as NEFT or RTGS. After considering the required transaction scheme the pattern visualization is carried on. In the pattern visualization process they will display the kind of transaction which is considered for the process.

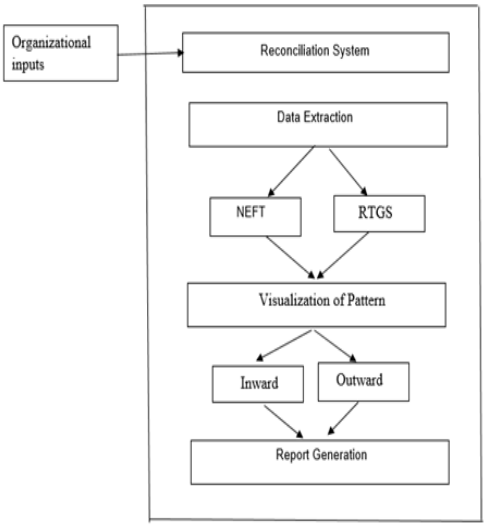

Figure 2: System Architecture

In further process they will check the type on transaction such as Inward (amount obtained from other organization) or Outward (amount withdrawn by other organization) which are carried out and also they will compare the status of the two files using the primary key [8],[9]. If the amount present in the two organizational accounts are same then they will not display the transaction id else if there is a difference between the amount deposited and the amount withdrawn then they will highlight the transaction id indicating that the transaction have not completed properly[10]. Thus the status of the transaction is highlighted as the final result.

III. RESULTS AND DISCUSSION

In the final display screen the result will be displayed. In the result the transaction which doesn't have the proper reconciliation will be highlighted indicating that there is an occurrence of improper transaction [11]. From this we can easy find the odd transactions from the huge number of available transactions of the particular organization. The major advantage is that they can easily collect the transactions information by the clustering order and thus they can be grouped easily under the required criteria. As the future enhancement of the subject we can have a reconciliation checking for time to time and thus we can reduce the waiting time of the result and increase the accuracy of the project.

IV. CONCLUSION

As discussed in this paper, the existence of the multiple transactions reconciliation result can be obtained quickly and accurately. We suggest that the Hierarchical Clustering technique will be suitable for the process of grouping the transaction according to the requirements. In this paper, we presented a new approach, GHIC (Greedy Hierarchical Item Set-Based Clustering) for pattern-based clustering of organizational transactions and demonstrated that the technique performs effectively, compared to some traditional techniques. Further enhancement can also create great advantages to this current process.

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