Exhausting Network Model Represent Metadata in Data Warehouse

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***Abstract*- Exhausting network model metadata representation have becomes a need not only for well knowledge, but also to handle the whole database of a vast numbers of information This work is aimed at represent metadata using network model. A model network is organized using the object which is present in the database.**

Index Terms- Data Warehouse, Metadata, Online Transaction Processing, Online Analytical Processing.

I. INTRODUCTION

Metadata plays a key role in converting raw data into knowledge as it helps to provide valuable description about the data so data it can be understood and converted into meaningful information. Metadata is simply defined as data about data. The knowledge that's wont to represent alternative data is thought as data. For example, the index of a book is a data for the contents within the book. In alternative words, we will say that data is that the summarized knowledge that leads United States of America to elaborate knowledge. In terms of knowledge warehouse, we will outline data as follows.

- Metadata is the road-map to a data warehouse.
- Metadata during a information warehouse defines the warehouse objects.
- Metadata acts as a directory. This directory helps the choice network to find the contents of a data warehouse.

A metadata does not give you just the explanation of the entity but also gives other details explaining the syntax and semantic of data elements. Metadata defines all the pertinent aspects of the data in the data warehouse fully and precisely to help the users and the developers of the data warehouse. A typical metadata contains information about the following:

- Structure of data from the programmer's perspective.
- Structure of data from the end-user's perspective
- Source systems that feed the data warehouse.
- Revolution process that was applied before the data from the source system could pass into the data warehouse.
- Data model.
- History of data extraction process.[1]

Metadata defines the details about the data in a data warehouse. Such a description may be in terms of the contents and source of data flows into the data warehouse.

Metadata warehouse is an integral part of a data warehouse system. It contains the following metadata:

Business metadata - It contains the data possession information, business definition, and changing rules.

Operational metadata - It includes currency of data and data stock. Currency of data states to the data being active, archived, or purged. Lineage of data means history of data transferred and transformation applied on it.

Data for mapping from operating environment to data warehouse - It metadata includes source databases and their contents, data extraction, data partition, cleaning, transformation rules, data refresh and purging rules.

The present paper proposes a network model inspired approach toward the evaluation of metadata. The springiness that the system allows would be limited to the domain of knowledge supported by a tree model. Currently the work is restricted only in warehouse database.

Data warehouse

Data warehouse is a collection of information; this information are copied from other systems and assembled into one place. Once accumulated it is made available to end users, who can use it to support

a plethora of different kinds of business decision support and information collection activities [15]. DWs are central depositories of integrated data from one or more disparate sources. They store current and old data and are used for creating analytical reports for knowledge workers throughout the enterprise. Data warehouse contains serious metrics of the business processes store along business dimensions.[10]

II. LITERATURE SURVEY

Several methods of managing collections of data (e.g., databases) have been developed since data was first stored in electronic form. From initial systems and applications that simply collected data in one or more flat database files to present sophisticated database management systems (DBMS), different solutions have been developed to meet different requirements. A database may be reflected distinct from a DBMS, in that a DBMS, as the name implies, includes utilities for accessing, updating and otherwise managing or operating a database. As the amount and complication of data stored in databases has increased, DBMS design and development efforts have increasingly focused upon the ability to organize, store and access data quickly and efficiently. As a result, today's database management systems can be very active in managing collections of linear information such as inventory, customer lists, etc [14].

The information practiced has spent a life dedicated to process and functional analysis, user requirements, maintenance architectures, and the like. Simply from the outlook of who needs help the most in terms of finding one's way around data and systems, It is expected that the information technology community is computer learned, and able to find his/her way around systems. it is assumed the DSS exploration community requires a much more formal and intensive level of support than the information technology community. For this reason only, the formal establishment of ongoing support of metadata becomes important in the data warehouse environment [3].

Huynh et al. [4] propose the use of metadata to chart between object oriented and relational environment within the metadata layer of an object-oriented data warehouse.

Eder et al. [5] propose the COMET model that registers all modifications to the schema and structure of data warehouses. They consider the COMET model as the origin for OLAP tools and transformation operations with the goal to reduce incorrect OLAP results.

Stohr et al. [6] have hosted a model which uses a uniform representation approach based on the Uniform Modeling Language (UML) to integrate technical and semantic meta data and their inter dependencies.

Katic et al. [7] suggest a model that covers the security relevant aspects of existing OLAP/ data warehouse solutions. They emphasise that this particular aspect of metadata has seen rather little interest from product developers and is only beginning to be discussed in the research community.

Shankaranarayanan & Even and Foshay et al. [8] deliver a good description of business metadata and associated data quality. They argue that executive decision-making stands to benefit from business metadata.

Kim et al. [9] afford a general overview of a metadata oriented methodology for building data warehouses that includes legacy, extraction, operational data store, data warehouse, data mart, application, and metadata.

Our work shields a broad range of metadata aspects. We afford a means to manage data warehouse refresh observation timestamps, capturing message logs to detect any load or data issues. We also discuss in detail how to control individual job run comportment of subsequent batch cycles runs.

III. METADATA IN DATAWAREHOUSE

Metadata is a data round data in the data warehouse. Metadata in a data warehouse is like to the data dictionary. In the data dictionary hold the information about records and addresses, information about the indexes, information about the logical data structure. Similarly metadata constituents are the same as data dictionary. Metadata in a data warehouse descent into three major categories:

- Operational metadata
- Extraction and transformation metadata
- End-user metadata

Operational metadata comprehends all of the information about the operational data source.

Extraction and Transformation metadata comprehends information about all the data transformations that take place in the data staging area.

The last-user metadata allows the end-users to use their own business terminology. [10]

Mainly, a metadata dictionary describes the following:

1. common metadata meanings (semantics),
2. common grammar and rules for communicating data (syntax),
3. commonly defined metadata dictionary element properties (attributes)[1]

Some metadata models or schemas are established on a logical, hierarchical arrangement of their metadata elements, not only in the way they are conceptually presented, but also in how they are functional in actual metadata and asset management systems.

IV. NETWORK MODEL

The network model is a database model considered as a flexible way of representing objects and their relationships. Its differentiating feature is that the schema, viewed as a graph in which object types are nodes and relationship types are arcs, is not restricted to being a hierarchy or lattice.

The network model arranges data using two fundamental concepts, called records and sets. Records contain fields (which may be organized hierarchically). Sets define one-to-many relations between records: one owner, many members. A record may be an holder in any number of sets, and a member in any number of sets.[11]

A set contains of circular linked lists where one record type, the set owner or parent, appears once in each circle, and a second record type, the subordinate or child, may appear multiple times in each circle. In this way a grading may be established between any two record types, e.g., type A is the owner of B. At the similar time another set may be defined where B is the owner of A. Thus all the sets encompass a general directed graph (ownership defines a direction), or network construct. Access to proceedings is either sequential (usually in each record type) or by navigation in the circular linked lists.[11]

The processes of the network model are navigational in style: a program maintains a current position, and navigates from one record to another by following the relationships in which the record participates. Records can also be located by providing key values.

Although it is not an needed feature of the model, network databases generally implement the set relationships by means of pointers that directly address the location of a record on disk. This gives exceptional retrieval performance, at the expense of operations such as database loading and reorganization.

V. CONCLUSION

In this paper provides the awareness about metadata, data quality is increase if metadata is properly managed in data warehouse. We also explain metadata using network model, so that reason it is easy to understand how to manage all the data and how to all the data are related each other in the data warehouse. Users simply can find the answer to the question regarding the data. It gives the inner view of the data warehouse.

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