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On-Line Analytical Processing For Business Intelligence Using 3-D Architecture

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***ABSTRACT*:** Data mining is an important field of research work for researchers. In proposed work we are implementing OLAP.OLAP can be used in data mining for the discovery of previously undiscovered relationships between data items. OLAP is part of business intelligence in the field of mining as it can answer complex business queries easily. Data warehouses bring data from operational sources into a single warehouse for OLAP analysis.
Next Generation Greedy Dynamic Mix Based OLAP algorithm (NGGDM-OLAP) Provide an interface for several related OLAP Queries simultaneously using the mix approach of the Greedy & Dynamic algorithm in two separate steps. NGGDM–OLAP constructs the execution plan in a top-down manner by identifying at each step the most beneficial view instead of finding the most promising query. In this research paper we have developed the mix of Dynamic & Greedy algorithm for better efficiency of Data Cube Modeling and better multidimensional query results.

***KEYWORDS*:** OLAP,NGGDM-OLAP,Data Model, Analysis Model

I INTRODUCTION

Now-a-days technology has been emerged to manage large data sets efficiently and due to rapid growth of data, large scale data processing is also an issue. OLAP can be used in data mining for the discovery of previously undiscovered relationships between data items. An OLAP database does not need to be as large as a data mining since not all transactional data is needed for trend analysis. OLAP is part of the of business intelligence in the field of mining as it can answer complex business queries easily. Data warehouses bring data from operational sources into a single warehouse for OLAP analysis. A successful company today has many decisions to make. The better those decisions are made, the more successful, and profitable, the company is. To many chief decision makers, the ability to analyze faster and better than the competition means better decisions, higher profitability, and more success. OLAP also allows users to access summary data faster and easier.

OLAP SYSTEM ARCHITECTURE: On-Line Analytical Processing (OLAP) allows users to perform quick and effective analysis on large amounts of data.
An OLAP system is comprised of multiple components. A top-level view of the system includes a data source, an OLAP server, and a client. The data source is the source of data to be analyzed. Data from the source are transferred or copied into the OLAP server, where it is organized and prepared to provide short query times. The client is the user interface to the OLAP server. In this section, the function of each component and the significance in the overall system is described.
The source in an OLAP system is the server that supplies the data to be analyzed.

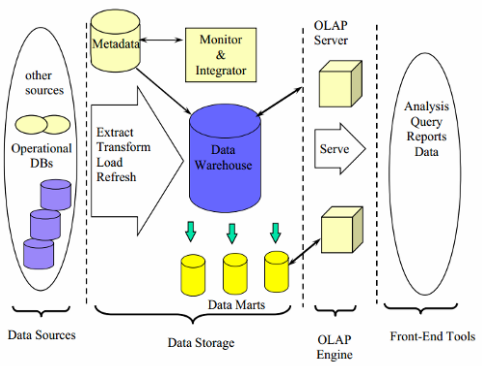


Fig 1: OLAP system Architecture

II MULTIDIMENSIONAL DATA MODEL:

The **multidimensional data model** is important because it enforces simplicity. The multidimensional data model is an integral part of On-Line Analytical Processing. A data warehouse is based on a multidimensional data model which views data in the form of a data cube. This is not a 3-dimensional cube: it is n-dimensional cube. Dimensions of the cube are the equivalent of entities in a database, e.g., how records are kept in an organization.

The multidimensional data model is comprises logical cubes, dimensions, hierarchies, levels, measures and attributes. The simplicity of the model is inherent because it defines objects that represent real-world business entities. Business measures which have to be undertaken are known by analyst and are interested in finding, which dimensions and attributes make the data meaningful, and how their business dimensions are organized into levels and hierarchies.

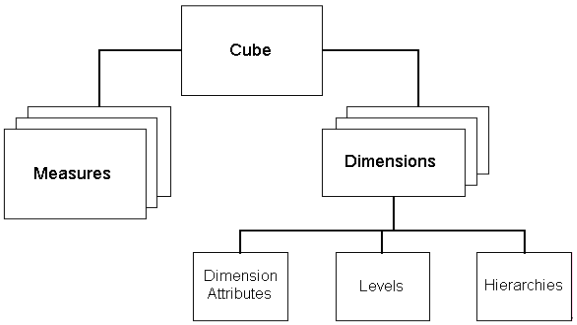
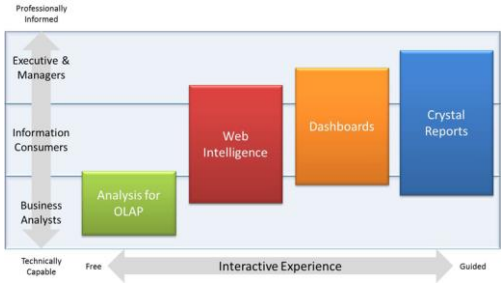


Fig2Logical Multidimensional Model

In case of Complex analysis and visualization the data in a data warehouse is typically modeled in multidimensional view. In the proposed work the domains inventory is shown. It shows the best performance when queries involve aggregation. The problem of building this multidimensional cube can be represented as cube.

III OLAP ANALYSIS MODELS

OLAP is for analysis, thus it should support various different models for analysis. Examples of analysis models are static reports, reports that allowing paging, rotation, and drilling, what-if analyses, and models for budgeting and performance issues. Some OLAP products are by nature better for particular analysis models, though all products produce static reports and also allow other analysis models to some extent. Typically, OLAP vendors who focus on the front end or client are able to provide a greater number of analysis models, and the models tend to be more flexible as well.



ALGORITHM: The proposed algorithm is as follows:

Next Gen Greedy Dynamic Mix based OLAP Algorithm (NGGDM-OLAP)

This Algorithm uses the Greedy & Dynamic Mix approach for the effective OLAP.

Step1: Initialize the parameter Z for processing on the population P.

Step2: Initialize the Counter for initial processing using the Greedy Approach
Set Count=1
Do
Process each table From Dim table1, Dim table2….Dim table-n
Process Data & update fact Table
Set Count =Count +1
While Count < =P

Step 3: Optimize each Result from Step2 using Dynamic approach
Select the data D, from Each Dimension Table
Process the data D for best data according to condition C
Store the D in data Cube DC.

Step:4 Repeat Step 3 till the data created in Step2 in fully Optimize using Dynamic approach.

This algorithm is using a mix of both dynamic and greedy approach for most efficient query analysis from database. this algorithm also aims at providing the result in the least possible time.This mix approach can be used to generate result in more accurate and precise way for data analysis in an organization to as improve decision support.

IV CONCLUSION

OLAP is used to extract knowledge from the data warehouse. Another kind of tool used with this purpose are data mining tools. Data mining came into being to solve these sorts of problem. It is a process to find the hidden information in a database. The both research communities have been evolving separately. The former must be interactive, while the latter presents computational complexity problems.However, it seems promising to integrate both kinds of tools so that ones can benefit from the others.The algorithm proposed as a mix of greedy and Dynamics can get more accurate results for analysis.

FUTURE SCOPE: Currently this research of focuses on OLAP System ,future research may Cover OLAP for Distributed environments where there may exist multiple replicas of a view . The problem becomes more Complex because we don't only need to decide which view will execute the quarry. Another direction of future work is the efficient Cooperation of multi-quarry optimization technique with cache control algorithm The thought in that we can go for replacement algorithmic to fetch the Cached results based not only an the Frequency of the question but also an Combinations that are Posed Simultaneously

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