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**MIT WORLD PEACE
UNIVERSITY** | PUNE

TECHNOLOGY, RESEARCH, SOCIAL INNOVATION & PARTNERSHIPS

T.Y.B.Tech (CSE)

Data Warehousing And Data Mining

Lab Assignment No – 2

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Subject:- Data Warehousing & Data Mining

DWDM

Lab Assignment - 2.

Aim :- Data warehouse schema generation & olap (OLAP) operations using OLAPCube tool.

Objectives:-

- To build cube & different reports in OLAP Cube Tool.
- To perform different OLAP operations

Problem Statement :- Download & setup OLAP tool & perform various operations after importing the dataset.

In this experiment I have downloaded the movie.sql file.

Case Study :

A music company maintains the following database :-

- Customers : stores customer's data.
- Orders : stores sales orders placed by customer.
- OrderDetails: stores sales order line items for each sales order.



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Album : stores album's data.

Employees : stores all employee information as well as the organization structure such as who reports to whom.

Create different type of dimensions like simple, Hierarchical, relational & time.

Identify & create few measures.

Build cube

Generate few reports based on different dimension & measures.

Perform OLAP operations on it.

* Theory :-

Explain:-

① Data Warehouse :

→ A data warehouse is a type of data management system that is designed to enable & support business intelligence (BI) activities, especially analytics.

② Star, Snowflake , Fact constellation schema .

→ Star schema:- It is a type of schema in which the center of the star can have one fact table & a no. of associated dimension table.

Snowflake Schema:- It is a logical arrangement of tables in a multi-dimensional database such that the ER Diagram resembles snowflake shape.



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Constellation Schema:- It is a schema for representing multi-dimensional model. It is a collection of multiple fact tables having common dimensional tables. It is also known as galaxy schema.

③ Different OLAP operations:

→ The different OLAP operations are:-

① Roll up:- Roll up performs aggregation on a data cube in any of the following ways-

① By climbing up a concept hierarchy for a dimension.

② By dimension reduction

③ Drill down:- Drill down is the reverse operation of roll-up.

④ Slice:- The slice operation selects one particular dimension from a given cube & provides a new sub-cube.

⑤ Dice :- Dice selects two or more dimensions from a given cube & provides a new sub-cube.

- Input : Database

- Output : Multi-dimensional cube

- Platform : Windows

- Conclusion: Thus we learned to build multi-dimensional cube & OLAP operations.



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FAQ's:-

Q) What are dimensions & Measures? Explain different types of measures in data warehouse.

Ans) Dimensions are descriptive details about various objects allowing for their detailed analysis. In data warehouse, measure is a quantity on which calculations can be made.

① Additive measures :-

Additive measures are measures that can be added across all dimensions.

② Semi-additive measures :-

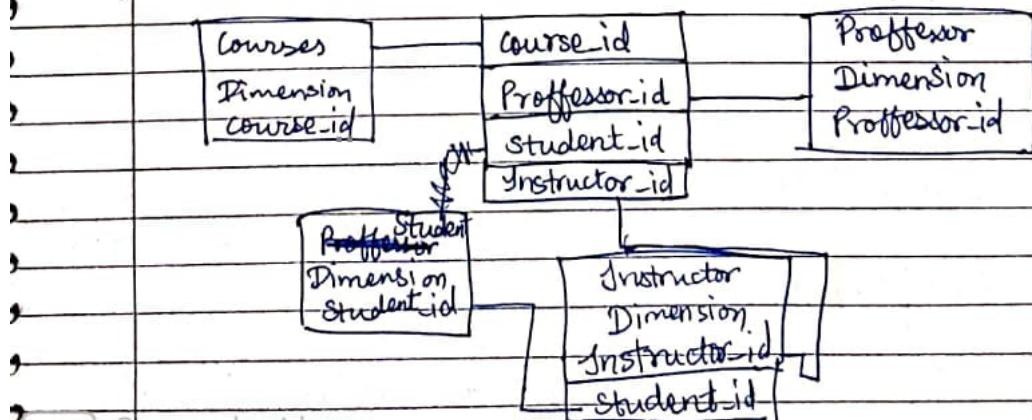
Semi-additive measures are measures that can be added across some, but not all dimensions.

③ Non-additive measures :-

Non-additive measures are measures that cannot be added across any dimensions.

Q) Create a simple "star schema" with information on students, professors, courses, & students who are taking courses from # instructors.

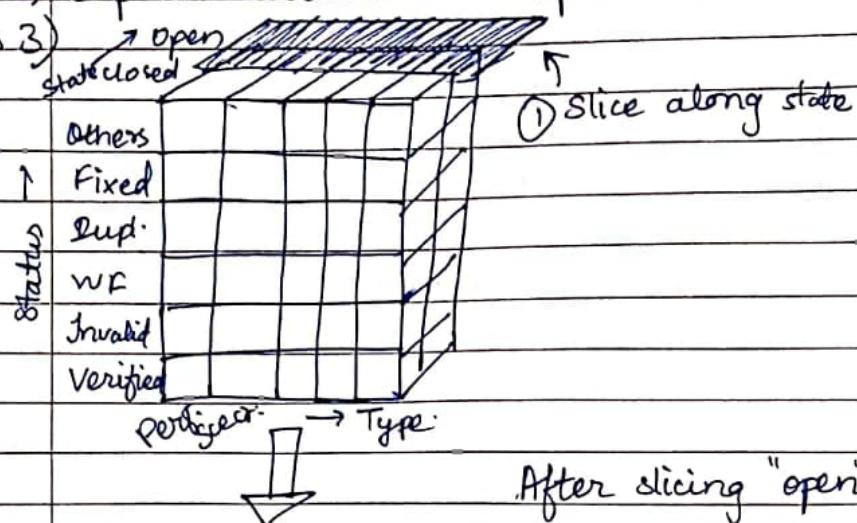
Ans).



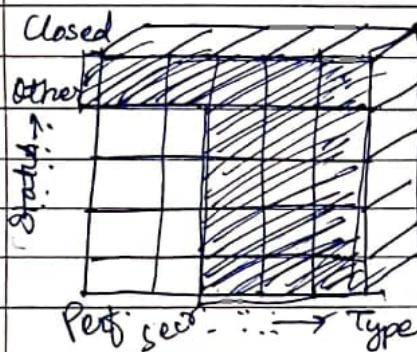
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3) Explain all OLAP operations with example.

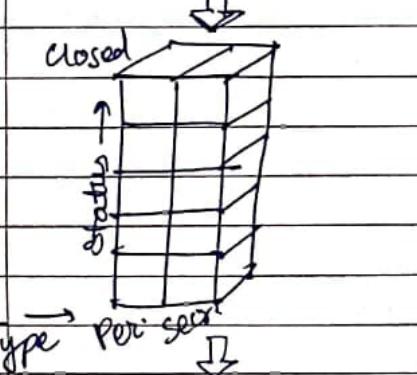
Ans 3)



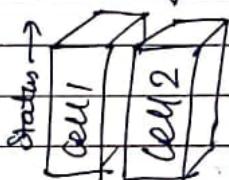
After slicing "open" is removed



② Dice along status & type.



③ Roll Up along status



④ Compare two process cells.

Type → for. Sec

Similarly we can also do drill down operation.



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Screenshots while implementing OLAP Cube :

