HOMEWORK-7

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Q1. What is a data warehouse? List the types of Data warehouse architectures.

Data Warehouse (DWH), is also known as an Enterprise Data Warehouse (EDW). A Data Warehouse is defined as a central repository where information is coming from one or more data sources. Three main types of Data warehouses are Enterprise Data Warehouse (EDW), Operational Data Store, and Data Mart.

Q2. What does OLAP stand for?

Online analytical processing (OLAP) is a technology that organizes large business databases and supports complex analysis. It can be used to perform complex analytical queries without negatively affecting transactional systems.

Q3. What does OLTP stand for?

OLTP (online transaction processing) is a class of software programs capable of supporting transaction-oriented applications. In computing, a transaction is a sequence of discrete information exchanges that are treated as a unit. Many everyday acts involve OLTP, including online banking, online shopping and even in-store shopping when the point of sale (POS) terminal is tied to inventory management software.

Two important characteristics of an OLTP system are concurrency and atomicity.

Q4. What is a star schema?

A star schema is a database organizational structure optimized for use in a data warehouse or business intelligence that uses a single large fact table to store

transactional or measured data, and one or more smaller dimensional tables that store attributes about the data

Q5. What is a snow flake schema?

A snowflake schema is a multi-dimensional data model that is an extension of a star schema, where dimension tables are broken down into subdimensions. Snowflake schemas are commonly used for business intelligence and reporting in OLAP data warehouses, data marts, and relational databases.

Q6. Define fact-less fact.

Factless facts are those fact tables that have no measures associated with the transaction. Factless facts are a simple collection of dimensional keys which define the transactions or describing condition for the time period of the fact.

For example, if you are modelling product sales, you can have a Sales fact table that will contain the dimension keys and, for example, the “amount” value/measure, to record the amount.

Q7. What do you understand by dimensional modeling?

Data Dimensional Modelling (DDM) is a technique that uses Dimensions and Facts to store the data in a Data Warehouse efficiently. It optimises the database for faster retrieval of the data. Dimensional Models have a specific structure and organise the data to generate reports that improve performance.

Q8. What is a data mart?

A data mart is a simple form of data warehouse focused on a single subject or line of business. With a data mart, teams can access data and gain insights faster, because they don't have to spend time searching within a more complex data warehouse or manually aggregating data from different sources.