



QUESTION 1: Match Each Definition With The Correct Concept. [10 POINTS]

Concepts: Data mart, Star Schema, Data warehouse, Fact table, Dimension, Data granularity, Factless table, OLTP, ETL, Measure, Snowflake.

1. It stands for Extraction, Transformation, and Loading. The movement of data from one area to another.
2. It is a segment of a data warehouse that can provide data for reporting and analysis on a section, unit, and department in the company.
3. It is a subject-oriented, integrated, time-variant and non-volatile collection of data in support of management's decision making process
4. A type of data modeling suited for data warehousing. In this model, there are two types of tables: dimensional tables and fact tables.
5. Table that records foreign keys of dimensions but no measures are stored in this table.
6. It refers to the same category of information. For example, year, month, day.
7. the level of detail for the measurements or metrics
8. Table that stores records about statistics for different dimensions.
9. It is aggregated data in fact table. It is the data which end users are interested in.
10. It is an expanded version of a star schema in which dimension tables are normalized into several related tables.

QUESTION 2: Mark True or False And Correct The Wrong Statement
[15 POINTS]

1. The initial load process applies ongoing changes in a periodic manner.
2. Capture through database triggers is a type of deferred data extraction.
3. Old values of attribute are preserved as the status every time a change occurs in periodic statues.
4. Star schema is suited to online transaction processing, and therefore is generally used in operational systems, operational data store.
5. Data in the data warehouse may be loaded and refreshed from OLTP.
6. The role of the extraction process is to identify erroneous data and to fix them.
7. The data warehouse is nonvolatile.

8. Sorting and merging of data takes place in the data staging area.
9. Data in data warehouse are typically summarized and de-normalized.
10. Data transformation involves many forms of combining pieces of data from the different sources.
11. A star schema has a one-to one- relationship between a dimension and fact table.
12. The data in file-oriented systems can be captured through transaction logs
13. OLTP is used to support decision making and is based on historical data.
14. Data integration includes moving data from different sources to the warehouse.
15. Data extraction includes change data from a detailed level to a summary level.

QUESTION 3: Compare In Table Between The Following: [12 POINTS]

1. OLTP Systems and Data Warehousing.
2. Destructive merge and constructive merge.
3. Initial load, incremental load, and full refresh.

QUESTION 4: Write Short Notes About The Following: [15 POINTS]

1. Draw the components of data warehouse.
2. Give three reasons why ETL functions are most complexity in a data warehouse environment.
3. Name four types of the major transformation tasks.
4. List the features of data in data warehouse
5. List the three Methods of immediate data capture.

QUESTION 5: *You are the data design specialist on the data warehouse project team for car sales company. Read Company Information, then Answer required questions.*

(1) Design information package and then (2) Draw a STAR schema to track the sales Quantities. [8 POINTS]

The company offers many cars for sale, these cars are from different categories, and each car has a specific “id”, model, and price, category. Customer can buy many cars by many types of selling methods such as cash or by a loan. If the customer bought the car by loan we must record the payment start date, payment end date, and monthly payment. The customer can buy car directly from company or from dealers. Regions of customers and dealers are recorded. The system tracks information about how many cars are sold daily, monthly, yearly for different car categories, regions, customers and dealers.

انتهت الأسئلة

Dr. Sameh Abd El-Ghany