FLIP ROBO

WORKSHEET-1 SQL

Q1 and Q2 have one or more correct answer. Choose all the correct option to answer your question.

1. Which of the following is/are DDL commands in SQL?

Ans. A) Create

D) ALTER

2. Which of the following is/are DML commands in SQL?

Ans. A) Update

B) Delete

Q3 to Q10 have only one correct answer. Choose the correct option to answer your question.

3. Full form of SQL is:

Ans. B) Structured Query Language

4. Full form of DDL is:

Ans. B) Data Definition Language

5. DML is:

Ans. A) Data Manipulation Language

6. Which of the following statements can be used to create a table with column B int type and C float type?

Ans. C) Create Table A (B int, C float)

7. Which of the following statements can be used to add a column D (float type) to the table A created above?

Ans. B) Alter Table A ADD COLUMN D float

8. Which of the following statements can be used to drop the column added in the above question?

Ans. B) Alter Table A Drop Column D

9. Which of the following statements can be used to change the data type (from float to int) of the column D of table A created in above questions?

Ans B) Alter Table A Alter Column D int

10. Suppose we want to make Column B of Table A as primary key of the table. By which of the following statements we can do it?

Ans. C) Alter Table A Add Primary key B

Q11 to Q15 are subjective answer type questions, Answer them briefly.

11. What is data-warehouse?

Ans. A data warehouse is a type of data management system which is used to collects and managing large amount of relational or multidimensional business data which is used to help organization make better business decisions. The large amount of data in data warehouses comes from different places such as internal applications such as marketing, sales, finance, customer-facing apps and external partner systems, among other sources.

12. What is the difference between OLTP VS OLAP?

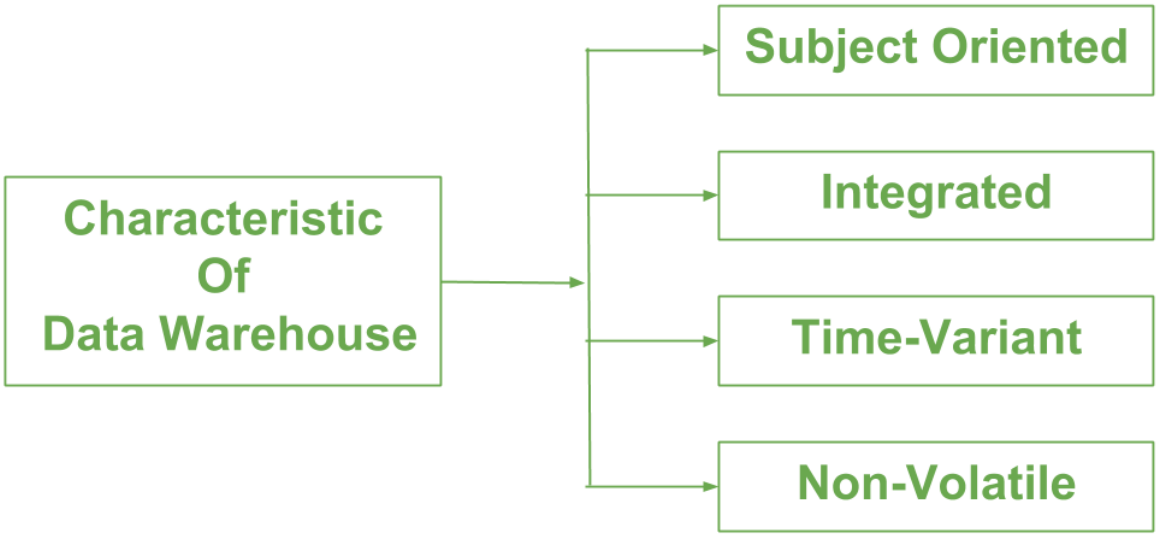
Ans.

Parameters	*OLTP System* *Online Transaction Processing* *(Operational System)*	*OLAP System* *Online Analytical Processing* *(Data Warehouse)*
Characteristics	Handles a large number of small transactions	Handles large volumes of data with complex queries
Process	It is an online transactional system It manages database modification	OLAP is an online analysis and data retrieving process
Functionality	OLTP is an online database modifying system	OLAP is an online database query management system
Purpose of data	To control and run fundamental business tasks	To help with planning, problem solving, and decision support
Inserts and Updates	Short and fast inserts and updates initiated by end users	Periodic long-running batch jobs refresh the data
Processing Speed	Typically very fast	Depends on the amount of data involved; batch data refreshes and complex queries may take many hours; query speed can be improved by creating indexes
Queries	Insert, Update, and Delete information from the database	Mostly select operations
Data quality	The data in the OLTP database is always detailed and organized	The data in OLAP process might not be organized
Operation	Allow read/write operations	Only read and rarely write
Back-up	Complete backup of the data combined with incremental backups	OLAP only need a backup from time to time Backup is not important compared to OLTP
Purpose	Designed for real time business operations	Designed for analysis of business measures by category and attributes
User type	It is used by Data critical users like clerk, DBA & Data Base professionals	Used by Data knowledge users like workers, managers, and CEO

13. What are the various characteristics of data-warehouse?

Ans. The characteristics of data-warehouse are as follows:

1. ***Subject Oriented*** - A data warehouse is subject-oriented, as it provides information on a topic rather than the ongoing operations of organizations. Such issues may be inventory, promotion, storage, etc. Never does a data warehouse concentrate on the current processes. Instead, it emphasized modeling and analyzing decision-making data. It also provides a simple and succinct description of the particular subject by excluding details that would not be useful in helping the decision process.



2. ***Integrated*** - It is somewhere same as subject orientation which is made in a reliable format. Integration means founding a shared entity to scale the all similar data from the different databases. The data also required to be resided into various data warehouse in shared and generally granted manner.
   A data warehouse is built by integrating data from various sources of data such that a mainframe and a relational database. In addition, it must have reliable naming conventions, format and codes. Integration of data warehouse benefits in effective analysis of data. Reliability in naming conventions, column scaling, encoding structure etc. should be confirmed. Integration of data warehouse handles various subject related warehouse.

3. ***Time-variant –*** Compared to operating systems, the time horizon for the data warehouse is quite extensive. The data collected in a data warehouse is acknowledged over a given period and provides historical information. It contains a temporal element, either explicitly or implicitly.

   One such location in the record key system where Data Warehouse data shows time variation is. Each primary key contained with the DW should have an element of time either implicitly or explicitly. Just like the day, the month of the week, etc.

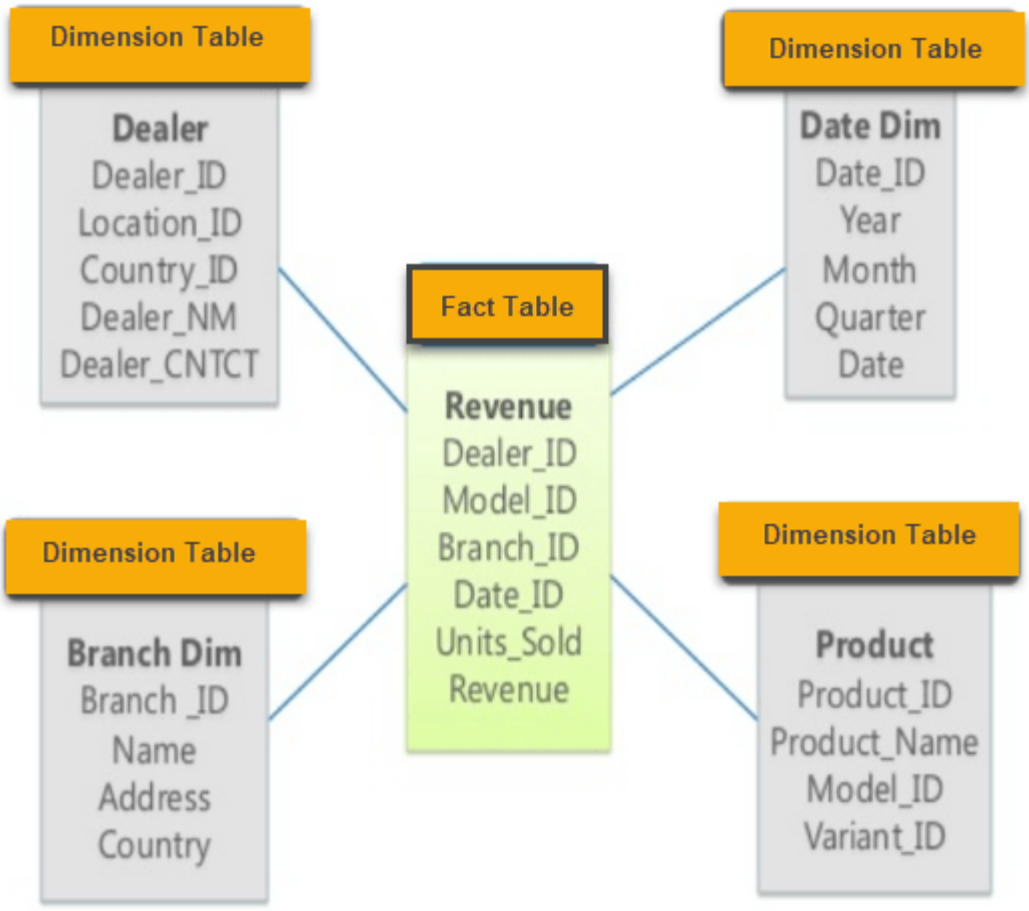
4. ***Non-volatile*** - As the name defines the data resided in data warehouse is permanent. It also means that data is not erased or deleted when new data is inserted. It includes the mammoth quantity of data that is inserted into modification between the selected quantity on logical business. It evaluates the analysis within the technologies of warehouse.
   In this, data is read-only and refreshed at particular intervals. This is beneficial in analysing historical data and in comprehension the functionality. It does not need transaction process, recapture and concurrency control mechanism. Functionalities such as delete, update, and insert that are done in an operational application are lost in data warehouse environment. Two types of data operations done in the data warehouse are:
   - Data Loading
   - Data Access

14. What is Star-Schema?

Ans. A star schema is the elementary form of a dimensional model, in which data are organized into facts and dimensions. A fact is an event that is counted or measured, such as a sale or log in. A dimension includes reference data about the fact, such as date, item, or customer.

A star schema is a relational schema where a relational schema whose design represents a multidimensional data model. The star schema is the explicit data warehouse schema. It is known as star schema because the entity-relationship diagram of this schema simulates a star, with points, diverge from a central table. The centre of the schema consists of a large fact table, and the points of the star are the dimension tables.

In the following Star Schema example, the fact table is at the centre which contains keys to every dimension table like Dealer_ID, Model ID, Date_ID, Product_ID, Branch_ID & other attributes like Units sold and revenue.



15. What do you mean by SETL?

Ans. SET Language is a very high-level programming language developed by Jacob T. Schwartz in the late 1960s. It is based on set theory and used for mathematical and telecommunications applications. It is a type of data integration that refers to the three steps (extract, transform, load) used to blend data from multiple sources. It's often used to build a data warehouse. During this process, data is extracted from a source system, converted transformed) into a format that can be analysed, and stored into a data warehouse or other system. Extract, load, transform (LT) is an alternate but related approach designed push processing down to the database for improved performance.