

Parth Makwana (DS0722)

ANSWERED_WORKSHEET 1 SQL

Q1 and Q2

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

D) ALTER

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

Update, Delete, Select

Q3 to Q10

3. Full form of SQL is:

B) Structured Query Language

4. Full form of DDL is:

B) Data Definition Language

5. DML is:

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?

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?

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?

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?

D) Alter table A Column D float to 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?

C) Alter Table A Add Primary key B

Q11 to Q15

11. What is data-warehouse?

A Data Warehousing (DW) is process for collecting and managing data from varied sources to provide meaningful business insights. A Data warehouse is typically used to connect and analyze business data from heterogeneous sources. The data warehouse is the core of the BI system which is built for data analysis and reporting.

It is a blend of technologies and components which aids the strategic use of data. It is electronic storage of a large amount of information by a business which is designed for query and analysis instead of transaction processing. It is a process of transforming data into information and making it available to users in a timely manner to make a difference.

12. What is the difference between OLTP VS OLAP?

	OLTP	OLAP
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Characteristics	Handles a large number of small transactions	Handles large volumes of data with complex queries
Query types	Simple standardized	Complex queries
Operations	Based on INSERT, UPDATE, DELETE commands	Based on SELECT commands to aggregate data for reporting
Response time	Milliseconds	Seconds, minutes, or hours depending on the amount of data to process
Design	Industry-specific, such as retail, manufacturing, or banking	Subject-specific, such as sales, inventory, or marketing
Source	Transactions	Aggregated data from transactions
Purpose	Control and run essential business operations in real time	Plan, solve problems, support decisions, discover hidden insights
Data updates	Short, fast updates initiated by user	Data periodically refreshed with scheduled, long-running batch jobs
Space requirements	Generally small if historical data is archived	Generally large due to aggregating large datasets
Backup and recovery	Regular backups required to ensure business continuity and meet legal and governance requirements	Lost data can be reloaded from OLTP database as needed in lieu of regular backups
Productivity	Increases productivity of end users	Increases productivity of business managers, data analysts, and executives
Data view	Lists day-to-day business transactions	Multi-dimensional view of enterprise data
User examples	Customer-facing personnel, clerks, online shoppers	Knowledge workers such as data analysts, business analysts, and executives
Database design	Normalized databases for efficiency	Denormalized databases for analysis

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

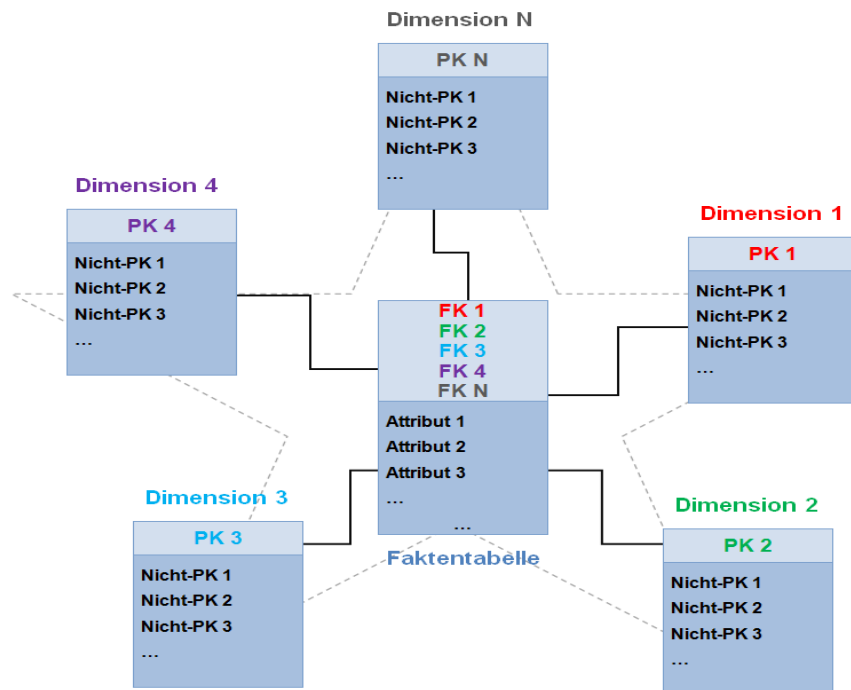
- Subject-oriented: A data warehouse typically provides information on a topic (such as a sales inventory or supply chain) rather than company operations.
- Time-variant: Time variant keys (e.g., for the date, month, time) are typically present.
- Integrated: A data warehouse combines data from various sources. These may include a cloud, relational databases, flat files, structured and semi-structured data, metadata, and master data. The sources are combined in a manner that's consistent, relatable, and ideally certifiable, providing a business with confidence in the data's quality.
- Persistent and non-volatile: Prior data isn't deleted when new data is added. Historical data is preserved for comparisons, trends, and analytics.

14. What is Star-Schema?

A star schema is a data warehousing architecture model where one fact table references multiple dimension tables, which, when viewed as a diagram, looks like a star with the fact table in the center and the dimension tables radiating from it. It is the simplest among the data warehousing schemas and is currently in wide use.

The star schema is the simplest form of a dimensional model used in business intelligence and data warehousing wherein data is arranged in dimensions and facts. In the star schema, there is a single fact table, which is usually expressed in the third normal form (3NF), and multiple de-normalized dimension tables

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connected to it, radiating out like the points of a star. The star schema has been optimized for querying large data sets and is generally used in data marts and warehouses in order to support OLAP cubes, ad hoc queries, analytic applications and business intelligence.

The fact tables in a star schema usually have two columns: the first is for the foreign keys pointing to the dimension tables, and the second is for the measures that contain numeric facts, hence, the name fact table. The dimension tables are actually structures that are usually composed of multiple hierarchies that categorize data.

15. What do you mean by SETL?

SETL provides two basic aggregate data types: unordered sets, and sequences (the latter also called tuples). The elements of sets and tuples can be of any arbitrary type, including sets and tuples themselves. Maps are provided as sets of pairs (i.e., tuples of length 2) and can have arbitrary domain and range types. Primitive operations in SETL include set membership, union, intersection, and power set construction, among others.

SETL provides quantified boolean expressions constructed using the universal and existential quantifiers of first-order predicate logic.

SETL provides several iterators to produce a variety of loops over aggregate data structures.