

WORKSHEET 1 SQL

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

- a) Create
- b) Update
- c) Delete
- d) Alter

Answer: a) Create, d) Alter

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

- a) Update
- b) Delete
- c) Select
- d) Drop

Answer: a) Update, b) Delete

3. Full form of SQL is:

- a) Strut querying language
- b) Structured Query Language
- c) Simple Query Language
- d) None of them

Answer: b) Structured Query Language

4. Full form of DDL is:

- a) Descriptive Designed Language
- b) Data Definition Language
- c) Data Descriptive Language
- d) None of the above.

Answer: b) Data Definition Language

5. DML is:

- a) Data Manipulation Language
- b) Data Management Language
- c) Data Modeling Language
- d) None of these

Answer: 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?

- a) Table A (B int, C float)
 - b) Create A (b int, C float)
 - c) Create Table A (B int, C float)
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d) All of them

Answer: 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?

- a) Table A (D float)
- b) Alter Table A ADD COLUMN D float
- c) Table A (B int, C float, D float)
- d) None of them

Answer: d) None of them

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

- a) Table A Drop D
- b) Alter Table A Drop Column D
- c) Delete D from A
- d) None of them

Answer: 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?

- a) Table A (D float int)
- b) Alter Table A Alter Column D int
- c) Alter Table A D float int
- d) Alter table A Column D float to int

Answer: 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?

- a) Alter Table A Add Constraint Primary Key B
- b) Alter table (B primary key)
- c) Alter Table A Add Primary key B
- d) None of them

Answer: c) Alter Table A Add Primary key B

11. What is data-warehouse?

A data warehouse is a relational database that is designed for query and analysis rather than for transaction processing. It usually contains historical data derived from transaction data, but it can include data from other sources. It separates analysis workload from transaction workload and enables an organization to consolidate data from several sources.

A data warehouse consolidates, standardizes, and organizes data in order to support business decisions that are made through analysis and reporting.

In addition to a relational database, a data warehouse environment includes an extraction, transportation, transformation, and loading (ETL) solution, an online analytical processing (OLAP) engine, client analysis tools, and other applications that manage the process of gathering data and delivering it to business users.

12. What is the difference between OLTP VS OLAP?

Basis for comparison	OLTP	OLAP
Definition	It is an online transactional system and manages database modification.	It is an online data retrieving and data analysis system.
Focus	Insert, Update, Delete information from the database.	Extract data for analyzing that helps in decision making.
Data	OLTP and its transactions are the original source of data.	Different OLTPs database becomes the source of data for OLAP.
Transaction	OLTP has short transactions.	OLAP has long transactions.
Time	The processing time of a transaction is comparatively less in OLTP.	The processing time of a transaction is comparatively more in OLAP.
Queries	Simpler queries.	Complex queries.
Normalization	Tables in OLTP database are normalized (3NF).	Tables in OLAP database are not normalized.
Integrity	OLTP database must maintain data integrity constraint.	OLAP database does not get frequently modified. Hence, data integrity is not affected.

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

Characteristics of data warehouse:

- 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.

- ii. **Integrated:** Integration in Data Warehouse means establishing a standard unit of measurement from different databases for all the similar data. The data must also get stored in a simple and universally acceptable manner within the Data Warehouse. Through combining data from various sources such as a mainframe, relational databases, flat files, etc., a data warehouse is created. It must also keep the naming conventions, format, and coding consistent. Such an application assists in robust data analysis. Consistency must be maintained in naming conventions, measurements of characteristics, specification of encoding, etc.
- iii. **Time-variant:** In this data is maintained via different intervals of time such as weekly, monthly, or annually etc. It finds various time limit which are structured between the large datasets and are held in online transaction process (OLTP). The time limits for data warehouse is wide-ranged than that of operational systems. The data resided in data warehouse is predictable with a specific interval of time and delivers information from the historical perspective. It comprises elements of time explicitly or implicitly. Another feature of time-variance is that once data is stored in the data warehouse then it cannot be modified, alter, or updated.
- iv. **Non-volatile:** The data warehouse is non-volatile, meaning that prior data will not be erased when new data are entered into it. Data is read-only, only updated regularly. It also assists in analyzing historical data and in understanding what and when it happened. The transaction process, recovery, and competitiveness control mechanisms are not required. In the Data Warehouse environment, activities such as deleting, updating, and inserting that are performed in an operational application environment are omitted.

14. What is Star-Schema?

Star Schema in data warehouse is a schema to represent the warehouse structure, in which the center of the star can have one fact table and a number of associated dimension tables. It is known as star schema as its structure resembles a star. The Star Schema data model is the simplest type of Data Warehouse schema. It is also known as Star Join Schema and is optimized for querying large data sets.

Characteristics of Star Schema:

- Every dimension in a star schema is represented with the only one-dimension table.
 - The dimension table should contain the set of attributes.
 - The dimension table is joined to the fact table using a foreign key
 - The dimension table are not joined to each other
 - Fact table would contain key and measure
 - The Star schema is easy to understand and provides optimal disk usage.
 - The dimension tables are not normalized
 - The schema is widely supported by BI Tools
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15. What do you mean by SETL?

SETL is short for Set Theory as a Language (or Set Language). SETL is a high-level programming language that's based on the mathematical theory of sets. SETL is an interpreted language with a syntax that resembles C and in many cases similar to Perl. In SETL every statement is terminated by a semicolon. Variable names are case-insensitive and are automatically determined by their last assignment.