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?
   A) Create B) Update
   C) Delete D) ALTER
2. Which of the following is/are DML commands in SQL?
   A) Update B) Delete
   C) Select D) Drop

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

3. Full form of SQL is:
   A) Strut querying language B) Structured Query Language
   C) Simple Query Language D) None of them
4. Full form of DDL is:
   A) Descriptive Designed Language B) Data Definition Language
   C) Data Descriptive Language D) None of the above.
5. DML is:
   A) Data Manipulation Language B) Data Management Language
   C) Data Modeling Language D) None of these
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) D) All of them
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
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
9. Which of the following statements can be used to change the data type (from float to int) of the column Dof 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
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

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

11. What is data-warehouse?

Answer: A data warehouse (DW) is a large, centralized repository of data that is specifically designed for reporting and analysis. Data warehouses are typically used to store historical data from various operational systems, such as transactional databases and ERP systems, in a format that is optimized for reporting and analysis.

Data warehouses typically include a variety of data from different sources, such as transactional data, master data, and reference data, and are designed to support a wide range of reporting and analysis needs, including ad-hoc queries, reporting, and business intelligence.

Data warehouses are usually implemented on powerful, high-performance servers, and use specialized software, such as a relational database management system (RDBMS) or a specialized data warehouse management system, to manage the data. Data is often extracted from operational systems, transformed and loaded into the data warehouse on a regular schedule, this process is called ETL(Extract, Transform, Load)

Data warehousing enables organizations to gain insights into their business operations by providing a single, consolidated view of all their data. This can help organizations make better decisions, improve operations, and identify new business opportunities.

12. What is the difference between OLTP VS OLAP?

Answer: OLTP (Online Transactional Processing) and OLAP (Online Analytical Processing) are two different types of data processing systems. The main difference between them is the way they are designed and the types of tasks they are used for.
OLTP systems are designed for transaction processing and are optimized for inserting, updating, and retrieving small amounts of data in real-time. They are typically used to manage and process large amounts of data from operational systems, such as point-of-sale systems, inventory management systems, and customer relationship management systems.
OLAP systems, on the other hand, are designed for analytical processing and are optimized for querying large amounts of data in order to support business intelligence, reporting, and data mining. They are typically used to store and manage historical data from various operational systems, such as transactional databases and ERP systems, in a format that is optimized for reporting and analysis.
In summary, OLTP systems are designed for transactional processing and handle a large number of short transactions, while OLAP systems are designed for analytical processing and handle a smaller number of complex queries.

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

Answer: A data warehouse (DW) has several characteristics that set it apart from traditional transactional systems:

1. Subject-oriented: Data in a DW is organized around specific subjects, such as customers, products, and sales, rather than around specific applications or transactions.
2. Integrated: Data in a DW is consolidated from multiple, disparate sources and is made consistent through a process known as data integration.
3. Time-variant: Data in a DW is stored with a specific time frame in mind, such as the last quarter or last year, and is optimized for reporting and analysis of historical data.
4. Non-volatile: Data in a DW is not updated in real-time, but is instead updated on a regular schedule, such as daily or weekly.
5. Read-only: Data in a DW is typically read-only, and is not intended for transactional processing.
6. Summarized: Data in a DW is often summarized, using techniques such as aggregation, to make it more manageable and to speed up query performance.
7. Multi-dimensional: Data in a DW is organized into a multi-dimensional model, such as a star schema or a snowflake schema, which makes it easy to navigate and analyze.
8. Scalable: Data warehouses are designed to handle very large amounts of data and can be scaled horizontally by adding more servers or vertically by adding more storage and computing power.
9. Flexible: Data warehouses can be designed to support a wide range of reporting and analysis needs, including ad-hoc queries, reporting, and business intelligence.
10. Secure: Data in a DW is usually protected by a robust security system that controls access to the data and ensures the data is kept confidential.

14. What is Star-Schema??

Answer: A star schema is a type of database schema where one central table, called the "fact table," is connected to one or more dimension tables. The fact table contains the quantitative data, while the dimension tables contain the descriptive attributes of the data. This design allows for easy aggregation and fast query performance. Star schema is widely used in Data Warehousing.

15. What do you mean by SETL?

Answer: SETL (SET Language) is a programming language which stands for "SET Language" and it is based on the mathematical theory of sets. It was designed in the late 1960s by Jack Schwartz at the New York University (NYU) and was first implemented in the early 1970s. SETL is intended to be used as a high-level language for large-scale numerical and symbolic computation, and its design is influenced by the mathematical theory of sets. SETL's high-level, abstract nature and its ability to handle large sets of data in a relatively short amount of time makes it well-suited for use in a variety of applications, including database management, artificial intelligence, and numerical analysis.