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 D) ALTER

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

Q3 TO Q10 HAVE ONLY ONE CORRECT ANSWER. CHOOSE THE CORRECT OPTION TO ANSWER YOUR QUESTION.

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?
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?

C) Alter Table A Add Primary key B

Q11 TO Q15 ARE SUBJECTIVE ANSWER TYPE QUESTIONS, ANSWER THEM BRIEFLY.

11) What is data-warehouse?

a. A **Data Warehousing** (DW) is process for collecting and managing data from varied sources to provide meaningful business insights
b. A **data warehouse** is a type of data management system that is designed to enable and support business intelligence (BI) activities, especially analytics.
c. Data warehouses are solely intended to perform queries and analysis and often contain large amounts of historical data. The data within a data warehouse is usually derived from a wide range of sources such as application log files and transaction applications.

12) What is the difference between OLTP VS OLAP?

a. **Online Analytical Processing (OLAP):** Online Analytical Processing consists of a type of software tools that are used for data analysis for business decisions. OLAP provides an environment to get insights from the database retrieved from multiple database systems at one time. **Examples –** Any type of Data warehouse system is an OLAP system. The uses of OLAP are as follows:

Spotify analyzed songs by users to come up with a personalized homepage of their songs and playlist.
Netflix movie recommendation system.

b. **Online transaction processing (OLTP):** Online transaction processing provides transaction-oriented applications in a 3-tier architecture. OLTP administers the day-to-day transactions of an organization.
c. **Examples:** Uses of OLTP are as follows:

ATM center is an OLTP application.
OLTP handles the ACID properties during data transactions via the application.
It's also used for Online banking, Online airline ticket booking, sending a text message, add a book to the shopping cart.

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

a. Data warehouses are characterized by being:

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 the fundamental schema among the data mart schema and it is simplest. This schema is widely used to develop or build a data warehouse and dimensional data marts. It includes one or more fact tables indexing any number of dimensional tables. The star schema is a necessary cause of the snowflake schema. It is also efficient for handling basic queries.

b. **Advantages of Star Schema :**

Simpler Queries –
Join logic of star schema is quite cinch in comparison to other join logic which are needed to fetch data from a transactional schema that is highly normalized.
Simplified Business Reporting Logic –
In comparison to a transactional schema that is highly normalized, the star schema makes simpler common business reporting logic, such as of reporting and period-over-period.
Feeding Cubes –
Star schema is widely used by all OLAP systems to design OLAP cubes efficiently. In fact, major OLAP systems deliver a ROLAP mode of operation which can use a star schema as a source without designing a cube structure.

c. **Disadvantages of Star Schema –**

Data integrity is not enforced well since in a highly de-normalized schema state.
Not flexible in terms if analytical needs as a normalized data model.
Star schemas don't reinforce many-to-many relationships within business entities – at least not frequently.

15) What do you mean by SETL?

a. **SETL** (SET Language) is a very high-level programming language based on the mathematical theory of sets. It was originally developed by (Jack) Jacob T. Schwartz at the New York University (NYU) Courant Institute of Mathematical Sciences in the late 1960s.

b. 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.

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

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