SQL WORKSHEET -1

Answer of Q1 - (A) Create **(D)** Alter

Answer of Q2 - (A) Update **(B)** Delete

Answer of Q3 - (B) Structured Query Language

Answer of Q4 - (B) Data Definition Language

Answer of Q5 - (A) Data Manipulation Language

Answer of Q6 - (C) Create Table A (B int, C float)

Answer of Q7 – (B) Alter Table A ADD COLUMN D float

Answer of Q8 - **(B)** Alter Table A Drop Column D

Answer of Q9 - **(B)** Alter Table A Alter Column D int

Answer of Q10 - **(C)** Alter Table A Add Primary key B.

Answer of Q11 -

A Data Warehouse (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.

Types of Data Warehouse

1. Enterprise Data Warehouse (EDW)
2. Operational Data Store
3. Data Mart

Answer of Q12 –

Difference between OLTP VS OLAP

Sr. No.	Category	OLAP	OLTP
1.	Definition	It is well-known as an online database query management system.	It is well-known as an online database modifying system.
2.	Data source	Consists of historical data from various Databases.	Consists of only of operational current data
3.	Method used	It makes use of a data warehouse.	It makes use of a standard database management system (DBMS).
4.	Application	It is subject-oriented. Used for Data Mining, Analytics, Decisions making, etc.	It is application-oriented. Used for business tasks.
5.	Normalized	In an OLAP database, tables are not normalized.	In an OLTP database, tables are normalized (3NF).
6.	Usage of data	The data is used in planning, problem-solving, and decision-making.	The data is used to perform day-to-day fundamental operations.
7.	Task	It provides a multi-dimensional view of different business tasks.	It reveals a snapshot of present business tasks.
8.	Purpose	It serves the purpose to extract information for analysis and decision-making.	It serves the purpose to Insert, Update, and Delete information from the database.
9.	Volume of data	A large amount of data is stored typically in TB, PB	The size of the data is relatively small as the historical data is archived. For ex MB, GB
10.	Queries	Relatively slow as the amount of data involved is large. Queries may take hours.	Very Fast as the queries operate on 5% of the data.

Answer of Q13 –

1 : A Data Warehouse is Subject-Oriented

A data warehouse provides information on the topic rather than the current operations of organizations. It is subject-oriented and does not mainly concentrate on ongoing processes. A

data warehouse aids in creating emphasized models and analytical reports. This is in turn used in decision-making processes. It provides a brief description of the concerned subject and filters all information that does not contribute to the decision-making processes.
Subject-oriented data warehouse (SODW) is a type of data warehouse that is designed to support complex event processing (CEP) and similar applications. The subject-oriented data warehouse is designed to deliver information based on user-defined topics. The information in a subject-oriented data warehouse is structured based on user-defined topics, where a topic is a set of related data that is of interest to a specific business user. This is in contrast to a traditional data warehouse which is designed to support online analytical processing (OLAP) queries.

2 : Data Warehouses Support Integration
Integration goes hand in hand with the previous characteristics; subject orientation. A data warehouse is capable of combining data from various sources such as a mainframe, relational databases, flat files, etc.
These warehouses are designed to store and organize data from both transactional and analytical data sources of various types. A data warehouse is typically built for and by the business users in an organization. These users are usually more concerned with how data is used rather than how it is stored. An integrated data warehouse is a central place for reporting, analysis, and business intelligence. This involves a multidimensional data model and a metadata repository. It is also called an enterprise data warehouse or knowledge data warehouse.

3 : Data Warehouses are Non-Volatile
Data is a company's wealth as it can be manipulated in several ways to gain insights on many aspects. We never know when a dataset that is ignored and deleted would come in handy for a crucial analytics report. To support this cause, data warehouses are non-volatile, which means that any prior data will not be erased upon the entry of new data in the warehouse. This is done by omitting functions of an operational application environment such as deleting, updating, and inserting.

4 : Data in Warehouses are Predictable with Time Intervals
In the previous characteristics of data warehouses, we read that all data is to be retained for better analytical purposes, but wouldn't it bombard the system? To answer this question, data warehouses have another special feature. The data in a warehouse is maintained via different intervals of time such as hourly, weekly, monthly, annually, etc.

Answer of Q14 –

A star schema is a conference for constructing the data into dimension tables, fact tables, and materialized views. All data is saved in columns, and metadata is needed to identify the columns that function as multidimensional objects.
A star schema is a relational schema where a relational schema whose design defines a multidimensional data model. The star schema is the explicit data warehouse schema. It is referred to as star schema because the entity-relationship diagram of this schemas reproduces a star, with points, diverge from the main table. The middle of the schema includes a high fact table, and the star is the dimension table.
Dimension Tables − A star schema saves all of the data about a dimension in a single table. Each level of a hierarchy is defined by a column or column set in the dimension table. A dimension object can be used to describe the hierarchical relationship between two columns (or column sets) that defines two levels of a hierarchy; without a dimension object, the hierarchical

relationships are represented only in metadata. Attributes are saved in columns of the dimension tables.
Fact Tables − Measures are saved in fact tables. Fact tables include a composite primary key, which is composed of multiple foreign keys (one for each dimension table) and a column for each measure that uses these dimensions.
Materialized Views − Aggregate data is computed based on the hierarchical relationships represented in the dimension tables. These aggregates are saved in independent tables, known as summary tables or materialized views. Oracle offers extensive support for materialized views, containing automatic refresh and query rewrite.
Queries can be written either opposite to a fact table or opposite to a materialized view. If a query is written against the fact table that needed aggregate data for its result set, the query is either redirected by query rewrite to a current materialized view, or the data is aggregated on the circle.

Answer of Q15 –

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.
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 iterates to produce a variety of loops over aggregate data structures.