**WORKSHEET-1**

**SQL ( SOLUTIONS)**

**ANS 1)** A (create), D (ALTER)

**ANS 2)** A (Update), B (Delete)

**ANS 3)** ­B (Structured Query Language)

**ANS 4)** B (Data Definition Language)

**ANS 5)** A (Data Manipulation Language)

**ANS 6)** C (Create Table A (B int, C float))

**ANS 7)** B (ALTER Table A ADD COLUMN D float)

**ANS 8)** B (Alter Table A Drop Column D)

**ANS 9)** B (Alter Table A Alter Column D int)

**ANS 10)** A (Alter Table A Add Constraint Primary Key B)

**ANS 11)**

1. A ***data warehouse*** is a type of [data management](https://www.oracle.com/database/what-is-data-management/) system that is designed to enable and support business intelligence activities, especially analytics. Data warehouses are solely intended to perform queries and analysis and often contain large amounts of historical data. Data flows into a data warehouse from the transactional system and other relational databases.
2. A data warehouse centralizes and consolidates large amounts of data from multiple sources.
3. It allow organizations to derive valuable business insights from their data to improve **decision-making.** Because of this, a data warehouse can be considered an organization’s “single source of truth.”

**ANS 12)**

**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.
* Consists of historical data from various Databases.
* It is subject oriented.
* The data is used in planning, problem solving and decision making.
* Relatively slow as the amount of data involved is large. Queries may take hours.
* It only need backup from time to time as compared to OLTP.

**Example –**

* Any type of Data warehouse system is an OLAP system.
* Netflix movie recommendation system.

**Online transaction processing (OLTP) –**

* Online transaction processing provides transaction-oriented applications in a 3-tier architecture. OLTP administers day to day transaction of an organization.
* Consists only operational current data.
* It is application oriented. Used for business tasks.
* The data is used to perform day to day fundamental operations.
* Very fast as the queries operate on 5% of the data.
* Backup and recovery process is maintained religiously.

**Uses of OLTP are as follows:**

* ATM centre is an OLTP application.
* It’s also used for Online banking, Online airline ticket booking, sending a text message, add a book to the shopping cart.

**ANS 13)** Characteristics of Data Warehouse:

**1) Subject Oriented:**

* A data warehouse is subject oriented because it provides information around a subject rather than the organization's ongoing operations.
* These subjects can be product, customers, suppliers, sales, revenue, etc. A data warehouse does not focus on the ongoing operations, rather it focuses on modelling and analysis of data for decision making.

**2) Integrated**:

* A data warehouse is constructed by integrating data from heterogeneous sources such as relational databases, flat files, etc.
* This integration enhances the effective analysis of data.

**3) Time Variant:**

* The data collected in a data warehouse is identified with a particular time period.
* The data in a data warehouse provides information from the historical point of view.

**4) Non-volatile**:

* Non-volatile means the previous data is not erased when new data is added to it.
* A data warehouse is kept separate from the operational database and therefore frequent changes in operational database is not reflected in the data warehouse.

**ANS 14)**

A Star Schema is a schema Architectural structure used for creation and implementation of the Data Warehouse systems, where there is only one fact table and multiple dimension tables connected to it. It is structured like a star in shape of appearance. This is one of the efficient data warehouse schema types, which can use simple querying for accessing the data from the system, in order to derive logical contents for analytical and report generation purposes.

**ANS 15)**

* In order to create better decisions for business analytics, organizations increasingly use external structured, semi-structured, and unstructured data in addition to the (mostly structured) internal data. Current Extract-Transform-Load **(ETL) tools** are not suitable for this “open world scenario” because they do not consider semantic issues in the integration processing.
* Current ETL tools neither support processing semantic data nor create a semantic Data Warehouse, a repository of semantically integrated data. Here comes **SETL** in function.
* **SETL** builds on Semantic Web (SW) standards and tools and supports developers by offering a number of powerful modules, classes, and methods for (dimensional and semantic) DW constructs and tasks. Thus it supports semantic data sources in addition to traditional data sources, semantic integration, and creating or publishing a semantic (multidimensional) DW in terms of a knowledge base.