**SQL**

## **WORKSHEET – 1**

## **Solutions**

1. A) Create D) ALTER
2. A) Update B) Delete C) Select
3. B) Structured Query Language
4. B) Data Definition Language
5. A) Data Manipulation Language
6. C) Create Table A (B int,C float)
7. B) Alter Table A ADD COLUMN D float
8. B) Alter Table A Drop Column D
9. B) Alter Table A Alter Column D int
10. A) Alter Table A Add Constraint Primary Key B
11. **Data Warehouse** :

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.

1. **Online Analytical Processing (OLAP):-**
2. 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.
3. Consists of historical data from various Databases.
4. It is subject oriented. Used for Data Mining, Analytics, Decision making ,etc.
5. Relatively slow as the amount of data involved is large. Queries may take hours and large amount of data is stored typically in TB, PB
6. **Example: -** Netflix movie recommendation system.

**Online transaction processing (OLTP) –**

1. Online transaction processing provides transaction-oriented applications in a 3-tier architecture. OLTP administers day to day transaction of an organization.
2. Consists only operational current data.
3. It is application oriented. Used for business tasks.
4. Very Fast as the queries operate on 5% of the data and the size of the data is relatively small as the historical data is archived. For ex MB, GB
5. **Examples : -** It’s also used for Online banking, Online airline ticket booking, sending a text message, add a book to the shopping cart.
6. Characteristics of a data warehouse are:

* Subject Oriented
* Integrated
* Non-volatile
* Time Variant
* **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.
* **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.
* **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.
* **Non-volatile**
  + Non-volatile means the previous data is not erased when new data is added to it.

**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.

**15)** SETL (SET Language) is a very high-level programming language based on the mathematical theory of sets. 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.