WORKSHEET 1 SQL

Q1. A), D)   Q2. A), B)   Q3. B)   Q4. B)   Q5. A)   Q6. C)   Q7. B)
Q8. B)   Q9. B)   Q10. A)

Q11. A Data Warehouse (DW) is a relational database that is designed for query and analysis rather than transaction processing. It includes historical data derived from transaction data from single and multiple sources. A Data Warehouse provides integrated, enterprise-wide, historical data and focuses on providing support for decision-makers for data modeling and analysis. A Data Warehouse is a group of data specific to the entire organization, not only to a particular group of users. It is not used for daily operations and transaction processing but used for making decisions.

Q12. 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. Spotify analyzed songs by users to come up with a personalized homepage of their songs and playlist. Netflix movie recommendation system.

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. 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.

Q13. Data warehouse can be controlled when the user has a shared way of explaining the trends that are introduced as specific subject. Below are major characteristics of data warehouse:

1. Subject-oriented   –
    A data warehouse is always a subject oriented as it delivers information about a theme instead of organization's current operations. It can be achieved on specific theme. That means the data warehousing process is proposed to handle with a specific theme which is more defined. These themes can be sales, distributions, marketing etc.
2. Integrated   –
    It is somewhere same as subject orientation which is made in a reliable format. Integration means founding a shared entity to scale the all similar data from the different databases. The data also required to be resided into various data warehouse in shared and generally granted manner.

3. Time-Variant –
   In this data is maintained via different intervals of time such as weekly, monthly, or annually etc. It founds various time limit which are structured between the large datasets and are held in online transaction process (OLTP). The time limits for data warehouse is wide-ranged than that of operational systems. The data resided in data warehouse is predictable with a specific interval of time and delivers information from the historical perspective.
4. Non-Volatile –
   As the name defines the data resided in data warehouse is permanent. It also means that data is not erased or deleted when new data is inserted. It includes the mammoth quantity of data that is inserted into modification between the selected quantity on logical business. It evaluates the analysis within the technologies of warehouse.

Q14. A star schema is the elementary form of a dimensional model, in which data are organized into facts and dimensions. A fact is an event that is counted or measured, such as a sale or log in. A dimension includes reference data about the fact, such as date, item, or customer. A star schema is a relational schema where a relational schema whose design represents a multidimensional data model. The star schema is the explicit data warehouse schema. It is known as star schema because the entity-relationship diagram of this schemas simulates a star, with points, diverge from a central table. The center of the schema consists of a large fact table, and the points of the star are the dimension tables.

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.