

WORKSHEET-1 SQL

1. A) and D)
2. A) and B)
3. B)
4. B)
5. A)
6. C)
7. B)
8. B)
9. B)
10. C)
11. A data warehouse is a centralized repository of data and all the information that is collected from varied sources to be analysed and to provide with useful business insights. Data warehousing is important to make more informed decisions. Data flows into the warehouse from varied sources like relational databases, transactional systems and other sources on a regular basis. Data scientists and data analysts analyse this data through different BI tools and comes up with a decision. All the data in the warehouse is organized into tables and columns. Data warehousing has several benefits like it helps in making better informed decisions, data from different sources is consolidated at one place. It ensures data quality, accuracy and consistency.
12. OLTP (Online Transaction Processing) captures, stores and processes data from transactions in real time whereas OLAP (Online Analytical Processing) uses

compound queries to analyse aggregated data from OLTP systems. OLTP usually handles a large quantity of small transactions and on the other hand OLAP handles large number of data with complex queries. In OLTP operations are based on commands such as INSERT, DELETE and UPDATE whereas operations in OLAP are based on SELECT commands to aggregate data. The main purpose of OLTP is to control as well as run essential business operations in real time for which it lists day to day business transactions. On the other hand the main purpose of OLAP is to plan, solve the queries, support choices and also discover hidden understandings for which it works on multi-dimensional views of enterprise data.

13. Some of the main features of data warehouse includes-

- Subject Oriented- Data warehouse is quite subject oriented which makes the understanding and analysis of the data very to the point and concise excluding all the unwanted information that is not required for decision making.
- Integrated- Data warehouse includes data from varied sources which is all integrated under one platform. The data which is extracted is then transformed maintaining the uniformity without depending on the source from which it was obtained from. This unique feature of Data warehouse is stated as Integrated.

- Time Variant- Another feature of data warehouse is time variant which means that data is maintained in time intervals such as weekly, monthly or annually. It keeps the huge amount of data from all databases stored in accordance of time.
- Non-Volatile- As the name defines the data which is stored in data warehouse is permanent. It means that when the new data is inserted in the warehouse the already stored data is not deleted. In this stage the data is in read-only access and is refreshed at particular intervals. This feature is very beneficial in analysing historical data. It does not need transaction process, recapture and concurrency control mechanism. Data loading and data access operations are conducted in the warehouse.

14. Star schema is a multi-dimensional model of data which organizes data in the database which makes it easy to understand and analyse. Star schema is applied to data warehouse, data marts, databases and other tools as well. It is called the star schema because it consists a fact table at the center of the logical diagram and each star schema database only has a single fact table. The fact table stores numeric and dimension attribute values. For example, the employee dimension table use the employee ID as a key value and also contains information like the name, gender, address and phone number of the employee and the product

dimension table consists of product based information like name, manufacturing cost, first date on market, etc.

15. SETL or Set Theory Language is a programming language originated by Jack Schwartz. This programming language is used for mathematical and telecommunications applications. This language introduced a completely new paradigm in programming which takes sets, ordered sets and maps as the principal data structures and the programs are expressed in terms of set constructors, set operations, and predicates on sets. The very name SETL is an abbreviation of 'SET Language'. The primitive datatypes of SETL include integer, floating point, Boolean, string and atom.