

1. A) create and D) delete are DDL commands in sequel
2. A) update B) delete and C) select are DML commands in SQL
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. D) None of them
11. A Data Warehouse is a type of data management system that supports Business Intelligence and other analytics activities. Data warehouses usually contain vast amounts of historical data.

OLAP is an Online application process while OLTP is an Online Transaction Process. The table below summarizes this(*Difference between OLAP and OLTP in DBMS (2022) GeeksforGeeks*. GeeksforGeeks. Available at: <https://www.geeksforgeeks.org/difference-between-olap-and-oltp-in-dbms/> (Accessed: January 18, 2023).

12.):

Sr. No.	Category	OLAP (Online analytical processing)	OLTP (Online transaction processing)
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.

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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.
11.	Update	The OLAP database is not often updated. As a result, data integrity is unaffected.	The data integrity constraint must be maintained in an OLTP database.
12.	Backup and Recovery	It only need backup from time to time as compared to OLTP.	Backup and recovery process is maintained rigorously
13.	Processing time	The processing of complex queries can take a lengthy time.	It is comparatively fast in processing because of

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			simple and straightforward queries.
14.	Types of users	This data is generally managed by CEO, MD, GM.	This data is managed by clerks, managers.
15.	Operations	Only read and rarely write operation.	Both read and write operations.
16.	Updates	With lengthy, scheduled batch operations, data is refreshed on a regular basis.	The user initiates data updates, which are brief and quick.
17.	Nature of audience	Process that is focused on the customer.	Process that is focused on the market.
18.	Database Design	Design with a focus on the subject.	Design that is focused on the application.
19.	Productivity	Improves the efficiency of business analysts.	Enhances the user's productivity.

13. The characteristics of a data warehouse are as follows; designed to perform analysis and queries, contain a large amount of historical data from many sources, incorporates business intelligence and builds up additional historical data(derived data), they are subject oriented, non-volatile.
14. Star Schema is a way of creating models based on tables contained in relational data warehouses. This requires tables to be classified as either Fact or Dimension tables.
15. SETL stands for SET Language and is a complex programming language based on the mathematical theory of sets and was developed by Jacob T. Schwartz at the New York University in the late 1960s.