DATA MART

- Data mart is a data store, which is designed for particular department of an organization or data mart is a subset of data warehouse that is usually oriented to a specific purpose.
- Easy access of frequent data.
- Improve end-user response time.
- Easy to access the data with high speed as compare to data warehouse.
- There are two types of data mart:
    - Independent data mart
    - Dependent data mart

- Independent data mart is built by drawing data from operational or external resources of data or both.
- Dependent data mart is built by drawing data from central data warehouse that already exist.

DATA LAKEHOUSE

- Data lakehouse is a combination of data lake and data warehouse.
- Data can be in structured, semi-structured, and unstructured format.
- Data lakehouses ensure that teams have the most complete and up-to-date data available for data science, machine learning, and business analytics projects.

DATAMESH

- Data mesh is a data platform architecture that allows end-users to easily access important data without transporting it to a data lake or data warehouse and without needing expert data teams to intervene.
- A data mesh is a decentralized data architecture that organizes data by a specific business domain.
- Data mesh makes your data discoverable, widely accessible, secure, and interoperable.

DWH vs DATA LAKE

Data Warehouse	Data Lake
A data warehouse contains structured data that has been cleaned and processed, ready for strategic analysis based on predefined business needs.	A data lake contains all an organization's data in a raw, unstructured form, and can store the data indefinitely for immediate or future use.
Data from a data warehouse is typically accessed by	Data from a data lake with its large volume of

managers and business-end users looking to gain insights from business KPIs, as the data has already been structured to provide answers to pre-determined questions for analysis.	unstructured data is typically used by data scientists and engineers who prefer to study data in its raw form to gain new, unique business insights.
ETL (Extract, Transform, Load). In this process, data is extracted from its source(s), scrubbed, then structured so it's ready for business-end analysis.	ELT (Extract, Load, Transform). In this process, the data is extracted from its source for storage in the data lake, and structured only when needed.

OLTP vs OLAP

- Online Analytical Processing (OLAP) is a category of software tools that analyze data stored in a database, whereas Online transaction processing (OLTP) supports transaction-oriented applications in a 3-tier architecture.
- OLAP creates a single platform for all types of business analysis needs which includes planning, budgeting, forecasting, and analysis, while OLTP is useful for administering day-to-day transactions of an organization.
- OLAP is characterized by a large volume of data, while OLTP is characterized by large numbers of short online transactions.
- In OLAP, a data warehouse is created uniquely so that it can integrate different data sources for building a consolidated database, whereas OLTP uses traditional DBMS.