Database Characteristics:-

A variety of database types have emerged over several decades. Each database have their own characteristics. Relational databases stores data in tables with fixed rows and columns. NON-RDBS - store data in a variety of models including JSON, BSON etc

Characteristics

→ Security feature to ensure the data only be accessed by authorized users

→ ACID (Atomicity, Consistent, isolation, durability) transaction to ensure data integrity

→ Query language and API's to easily interact with data

→ Indexes to optimize query performance

→ Full-text search

→ optimizations for mobile devices

Why we use a database:-

Our application needs to store data, thats why we need a database. Major industries are basically built on databases. Many types of data can be stored, including:-

→ Patient medical records
→ Items of an online store
→ Articles & blog entries
→ Financial records.
→ Sports scores & statistics
→ online gaming information
→ Student grades & scores.
→ IoT device

OLAP + datawarehouse & lakes :-

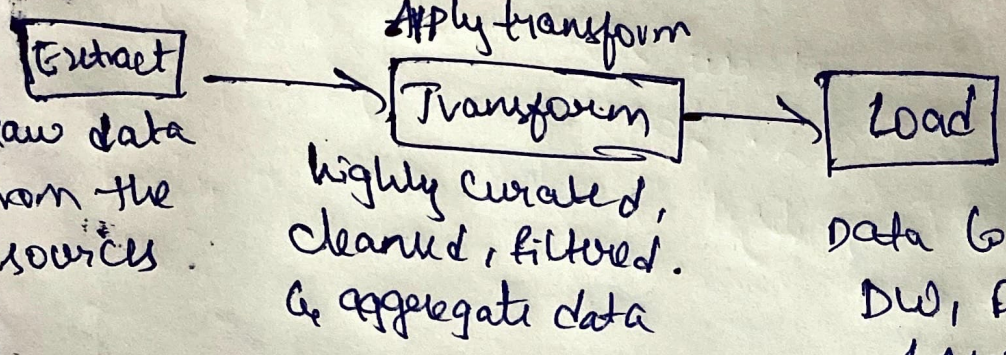
Data warehouses & lakes are mean to support online Analytical Processing (OLAP). They are typically used to collect data from various sources. The data is then used to power a range of analytical use cases ranging from business & reporting to forecasting

Datawarehouse :-

It is a system that stores highly structured information from various sources. It stores current & historical data from one or more systems. The goal is to combine disparate data sources in order to analyze the data, look for insights & create business intelligence in the form of

reports and dash boards.

Data warehouse is a giant database that is optimized for analysis



	Database	Data Lake	Data warehouse
workload	operational & transactional	Analytical	Analytical
Data type	Structured (or) semi	Structure, semi (or) unstructured	Structured & semi
Schema	Rigid (or) flexible schema depend on db type	No schema definition required	Pre-defined & fixed schema definition
Users	Application developers	Business Analytical & data scientist	Business analysis & data scientist