**Big Data:** Big data refers to **large** and **complex sets of data** that traditional data processing tools and techniques are unable to manage. It typically involves a massive volume of both structured and unstructured data.

Examples: Social Media Data (e.g., tweets, posts, comments, likes), Sensor data from (IoT) devices (e.g., temperature, humidity, motion) or Financial transaction data (e.g., stock trades, credit card transactions and etc.

**Data Lake**: A data lake is a **centralized repository** that allows organizations to store all their structured and unstructured data (Big Data) at any scale. Unlike a traditional database, a data lake doesn't enforce a specific schema or structure and can store data in its raw form. The data can be processed and analyzed using a variety of tools and technologies, enabling users to gain insights and create value from their data.

Examples of databases include:

An online store's database containing customer information, order history, and inventory data

A hospital's electronic medical records database containing patient information, diagnoses, and treatment plans

**Database**: A database is a **structured collection of data** that is stored and managed on a computer system. It typically consists of tables, fields, and relationships between tables, and can be queried using a structured query language (SQL).

Examples of databases include:

An online store's database containing customer information, order history, and inventory data

A hospital's electronic medical records database containing patient information, diagnoses, and treatment plans

**Data Warehouse**: A data warehouse is a **large, centralized repositor**y of data that is used for reporting and analysis. It typically contains data from multiple sources that have been cleaned, transformed, and organized to support business intelligence and decision-making. Data warehouses are designed to handle structured data and are optimized for querying and reporting

Example:

A healthcare organization's data warehouse containing patient data, hospital admissions data, and medical treatment data for analysis and research

A retail company's data warehouse containing sales data, inventory data, and customer demographic data for business analysis and forecasting