**Data Mart:**

A data mart is a subset of data warehouse which contains a data of specific domain or information specific to an organization’s business unit. It is short in size as data warehouse. To keep a homogeneous set of data in one place is called data mart. It only focuses on single subject. It is a decentralized system. It has two types:

* 1. Dependent Data Mart: It is dependent on data warehouse whenever we need data mart each time, we need to run query on data warehouse.
  2. Independent Data Mart: It is directly connected with data sources. No data warehouse is connected in between source and data mart.

**Data Lakehouse**:

It is a modern architecture that combines the features of data lakes and data warehouse. It is designed to provide a scalable and flexible platform for storing, processing, and analyzing large volumes of structured and unstructured data.

**Data Mesh:**

It is a decentralized approach to data management that distributes data ownership and governance across business units or domains.

**Online Transactional Processing aka OLTP:**

It is a database which is serving your main business, and your customers. OLTP databases are typically used in applications that requires fast and frequent data access and modification, it should not be slow down. These databases often use a row-based storage format which is optimized for transactional processing.

**Online Analytical Processing aka OLAP:**

It is a database which is not serving your customers you need it for inhouse solutions. You need it for performing analytics and extract business insights from business. These databases are typically used in applications such as financial reporting, budgeting, forecasting, and data mining. They can store large volume of historical and current data and allow BI officer to perform complex queries and analysis on data

**For Example:**

Consider an example of super mart, we have POS which using for billing purposes and, we have a customer satisfactory form which user is filling manually. The super mart team store both of the data in data base. For instance if they want to check which region’s super mart is working great or where we have customer satisfactory rate high they will definitely apply some analytics but for that they only have a database where they have both of the data. If they apply analytics to find the insights on the main database it will slow down and won’t be able to serve customer properly. Now we need another database which will solve our problem. We first check which features are necessary to answer the questions, we will aggregate them and then normalize them (if necessary) Now we are ready to shift our data from database to data warehouse. Now the ETL process has been done so its time to extract insights so the analyst will run queries and prepare dashboards or reports to solve the business problem. The main database of the super mart was the OLTP database because it was serving the customer and keep time to time record while the data warehouse was the OLAP database because by which we generated reports and dashboards.