**What are Data Marts?**

A **Data Mart** is a **subset** of a **Data Warehouse (DW)** that is tailored for a specific **department** or **business unit** (e.g., sales, finance, marketing). It provides a **focused view** of data for efficient querying and reporting.

**Dependent Data Marts**: Extracted from a **central data warehouse** after integration and cleaning.

**Independent Data Marts**: Created separately, functioning as **small individual data warehouses** for specific purposes

**Benefits of Data Marts Compared to Data Cubes**

1. **Faster Query Performance** – Since data marts contain only a portion of the data warehouse, queries execute more quickly than on a full data cube.
2. **Improved Usability** – They provide a more focused dataset tailored to specific user needs.
3. **Lower Storage and Maintenance Costs** – They require less storage than a full data warehouse and reduce complexity.
4. **Greater Autonomy** – Departments can manage their own data marts independently, ensuring data relevance and privacy.
5. **Load Balancing** – Reduces strain on the central data warehouse by distributing queries across multiple data marts.

**Dependent vs. Independent Data Marts**

**Dependent Data Marts**

* Built directly from a centralized data warehouse after data integration and cleansing.
* Follow the "Hub and Spoke" architecture.
* Ensure consistency with the main data warehouse.
* Easier to implement using replication or view mechanisms of database management systems.

**Independent Data Marts**

* Created separately without relying on a central data warehouse.
* Require subsequent integration and transformation if combined later.
* Can lead to inconsistencies in analysis due to different data views.
* Often used when an organization lacks a full data warehouse.

**When to Use Which?**

* **Use Dependent Data Marts** when you need centralized control, consistency, and an integrated approach across different business units.
* **Use Independent Data Marts** when different departments need quick, isolated solutions or when the organization does not yet have a full data warehouse.