**Things learnt from DAY-1 Training**

**An introduction to Data Warehousing:**

A Data-WareHouse is a large space to store data from various data sources(like OLTP). It does not store data that's used daily, instead it stores previous data called historical data that's used for business operations. It stores data that are been cleaned and neatly organized. So that by using this data the company can analyze and understand the data. It is mainly used for report generation,analytics and visualization. We can compare this with the Library where the books are neatly arranged and organized so that readers can easily find the book they want.

**Purpose of Data Warehouse**

It basically does analysis and reporting of historical data for business understanding and forecasting - this is the basic purpose of Data Warehouse. By the use of Data WareHouse businesses make smart decisions because of its clean & organized storage and easy search.

**Data Warehouse Architecture**

1. Source Layer (where raw data comes from)
2. Staging Layer (data is cleaned here)
3. Data Storage Layer - Data WareHouse (organized and stored in warehouse)
4. Presentation Layer (final form for users or analysts).

**Operational Data Store**

An ODS is a place where data from multiple sources is kept temporarily, mostly for quick lookups or reports. It's like a mini-storage space used in between the source and the warehouse. It’s not used for deep analysis, just short-term operational needs. Its a kind of bridge between Data source and Data Warehouse

**OLTP Vs Warehouse Applications**

OLTP (Online Transaction Processing) is used for day-to-day tasks like ATM transactions, online orders, etc. It handles many small operations quickly.

OLAP (Online Analytical Processing) is used for analysis, reports, and insights. It works on large chunks of historical data. This is one of the method thats used in the warehouse application. It helps doing multi dimensional analysis and report generation.

**Data Marts**

The data marts are the sub parts of the Data Warehouse , They are the segregated and cleaned parts of Data Warehouse. If we consider the data warehouse as a library then the data marts can be understood as departments. This makes the users to easily recognise the department/part in which they want the data from.

**Data marts Vs Data Warehouses**

**Datamart:** It is the sub product of the data ware house. It does not have any mixed data. Its been separated and segregated based on its nature. Similar data of a particular nature or category is being stored in a data mart. Which is connected with the data warehouse.

**Data Warehouse:** It is the vast storage space that stores historical data for business purposes. Unlike Data mart it has a mixture of categories of multidimensional data in it.

**Data Warehouse Life cycle**

**The DW Life Cycle includes all the stages from planning to using the data warehouse:**

1. Planning - why and what data is needed.

2. Data Collection - getting data from sources.

3. Data Cleaning & ETL - preparing and transforming the data.

4. Storage - storing it properly.

5. Access & Analysis - using it for reports and business decisions.

6.Maintanence - updating and improving regularly.