**Data Warehouse and OLAP Technology**

**Data warehouse :-** a relational database that is designed for query and analysis rather than transaction processing.

* A Data Warehouse provides integrated, enterprise-wide, historical data and focuses on providing support for decision-makers for data modeling and analysis**.**
* it is a group of data specific to entire organization, not only to a particular group of users.
* it is not used for daily operations and transaction processing but used for making decisions.
* it is usage is read-intensive.
* it includes current and historical data to provide historical perspective of information.
* it is a database designed for investigative tasks, using data from various applications.
* Data Warehouse is integrated generally at the organization level, by combining data from different databases.
* The Constructing a Data Warehouse can be expensive.

Component of Data warehouse:

* **Operational Source :–**
* An operational Source is a data source consists of Operational Data and External Data..
* Data can come from Relational DBMS like Informix, Oracle..
* **Load Manager :–**
* The Load Manager performs all operations associated with the extraction of loading data in the data warehouse..
* These tasks include the simple transformation of data to prepare data for entry into the warehouse..
* **Warehouse Manage :–**
* The warehouse manager is responsible for the warehouse management process.
* The operations performed by the warehouse manager are the analysis, aggregation, backup and collection of data, de-normalization of the data.
* **Query Manager :–**
* Query Manager performs all the tasks associated with the management of user queries.
* The complexity of the query manager is determined by the end-user access operations tool and the features provided by the database.
* **Detailed Data :–**
* It is used to store all the detailed data in the database schema.
* Detailed data is loaded into the data warehouse to complement the data collected.
* **Summarized Data :–**
* Summarized Data is a part of the data warehouse that stores predefined aggregations.
* These aggregations are generated by the warehouse manager.
* **Archive and Backup Data :–**
* The Detailed and Summarized Data are stored for the purpose of archiving and backup.
* The data is relocated to storage archives such as magnetic tapes or optical disks.
* **End User Access Tools :–**
* End-User Access Tools consist of Analysis, Reporting, and mining.