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**Questions:** Explain Data Warehousing Concept ?

**Solution:**

Data warehousing is a concept in the field of data management and analytics that involves the collection, storage, and management of large volumes of structured and sometimes unstructured data from various sources within an organization. The goal of a data warehouse is to provide a centralized repository of data that can be easily accessed and analysed to support business intelligence and decision-making processes.

**Key concepts in data warehousing include:**

1. **Data Integration:** Data warehouses combine data from several sources, including operational databases, spreadsheets, flat files, and external data sources. This integration enables data consistency and detailed analysis.
2. **Data Transformation**: Data from source systems often needs to be transformed and cleansed to ensure uniformity and accuracy. Transformation processes may include data normalization, aggregation, and the creation of data structures suitable for analysis.
3. **Centralized Repository:** A data warehouse serves as a central repository for historical and current data. This centralized storage facilitates reporting and analysis across the organization.
4. **OLAP (Online Analytical Processing):** Data warehouses are designed to support OLAP, which allows users to interactively analyze multidimensional data from different perspectives. OLAP tools enable users to drill down into details, slice and dice data, and perform complex analyses.
5. **Data Quality:** Maintaining high data quality is crucial in data warehousing. Data quality processes involve cleaning, validating, and ensuring the accuracy of the data to provide reliable information for decision-making.
6. **Security:** Given the sensitive nature of the data stored in a data warehouse, security measures are essential to protect against unauthorized access and ensure data privacy and compliance with regulations.

**Features of Data Warehousing are:**

* Subject-oriented
* Integrated
* Time-variant
* Nonvolatile