1.9.3 Data Warehouse Models:

There are three data warehouse models.

1. Enterprise warehouse:

- An enterprise warehouse collects all of the information about subjects spanning the entire organization.
- It provides corporate-wide data integration, usually from one or more operational systems or external information providers, and is cross-functional in scope.
- It typically contains detailed data aswell as summarized data, and can range in size from a few gigabytes to hundreds of gigabytes, terabytes, or beyond.
- An enterprise data warehouse may be implemented on traditional mainframes, computer superservers, or parallel architecture platforms. It requires extensive business modeling and may take years to design and build.

2. Data mart:

- A data mart contains a subset of corporate-wide data that is of value to aspecific group of users. The scope is confined to specific selected subjects. For example,a marketing data mart may confine its subjects to customer, item, and sales. Thedata contained in data marts tend to be summarized.

- Data marts are usually implemented on low-cost departmental servers that areUNIX/LINUX- or Windows-based. The implementation cycle of a data mart ismore likely to be measured in weeks rather than months or years. However, itmay involve complex integration in the long run if its design and planning werenot enterprise-wide.

- Depending on the source of data, data marts can be categorized as independent ordependent. Independent data marts are sourced fromdata captured fromone or moreoperational systems or external information providers, or fromdata generated locallywithin a particular department or geographic area. Dependent data marts are sourceddirectly from enterprise data warehouses.

3. Virtual warehouse:

- A virtual warehouse is a set of views over operational databases. Forefficient query processing, only some of the possible summary views may be materialized.
- A virtual warehouse is easy to build but requires excess capacity on operational database servers.

1.9.4 Meta Data Repository:

Metadata are data about data.When used in a data warehouse, metadata are the data thatdefine warehouse objects. Metadata are created for the data names anddefinitions of the given warehouse. Additional metadata are created and captured fortimestamping any extracted data, the source of the extracted data, and missing fieldsthat have been added by data cleaning or integration processes.

A metadata repository should contain the following:

- A description of the structure of the data warehouse, which includes the warehouse schema, view, dimensions, hierarchies, and derived data definitions, as well as data mart locations and contents.

- Operational metadata, which include data lineage (history of migrated data and the sequence of transformations applied to it), currency of data (active, archived, or purged), and monitoring information (warehouse usage statistics, error reports, and audit trails).