**Reference Architecture of Distributed DBMSs**

Data is distributed system are usually fragmented and replicated. Considering this fragmentation and replication issue the reference architecture of DBMS consist of the following schemas: -

●A set of global external schema.

●A global conceptual schema.

●A fragmentation schema and allocation schema.

●A set of schemas for each local DBMS.

**Global external schema-** In a distributed system, user applications and user access to the distributed database are represented by a number of global external schemas. This is the topmost level in the reference architecture of DBMS. This level describes the part of the distributed database that is relevant to different users.

**Global conceptual schema-** The GCS represents the logical description of entire database as if it is not distributed. This level contains definitions of all entities, relationships among entities and security and integrity information of whole databases stored at all sites in a distributed system.

**Fragmentation schema and allocation schema-** The fragmentation schema describes how the data is to be logically partitioned in a distributed database. The GCS consists of a set of global relations, and the mapping between the global relations and fragments is defined in the fragmentation schema.

The allocation schema is a description of where the data(fragments)are to be located, taking account of any replication. The type of mapping in the allocation schema determined whether the distributed database is redundant or non-redundant. In case of redundant data distribution, the mapping is one to many, whereas in case of non-redundant data distribution is one to one.

**Local schemas-** In a distributed database system, the physical data organization at each machine is probably different, and therefore it requires an individual internal schema definition at each site, called **local internal schema.**

To handle fragmentation and replication issues, the logical organization of data at each site is described by a third layer in the architecture called **local conceptual schema.**

The GCS is the union of all local conceptual schemas thus the local conceptual schemas are mappings of the global schema onto each site. This mapping is done by **local mapping schemas.**

This architecture provides a very general conceptual framework for understanding distributed database