Database Administrator [DBA]

Definition

Centralized control of the database is exerted by a person or group of persons under the supervision of a high-level administrator. This person or group is referred to as the database administrator (DBA). They are the users who are most familiar with the database and are responsible for creating, modifying, and maintaining its three levels.

Database Administrator is responsible to manage the DBMS's use and ensure that the database is functioning properly.

Database Administrator [DBA]

Definition…

DBA administers the three levels of database and consultation with the overall user community, sets up the definition of the global view of the various users and applications and is responsible the definition and implementation of the internal level, including the storage structure and access methods to be used for the optimum performance of the DBMS.

DBA is responsible for granting permission to the users of the database and stores the profile of each user in the database.

Responsibilities of DBA

Deciding the information content of the database

It is the DBA's job to decide exactly what information is to be held in the database - in other words, to identify the entities of interest to the enterprise and to identify the information to be recorded about those entities. Having done this, the DBA must then define the content of the database by writing the conceptual schema.

Responsibilities of DBA…

Deciding the storage structure and access strategy

The DBA must also decide how the data is to be represented in the database, and must specify the representation by writing the storage structure definition. In addition, the associated mapping between storage structure definition and the conceptual schema must also be specified.

Responsibilities of DBA…

Liaising with the users

It is the business of the DBA to liaise with users, to ensure that the data they require is available, and to write the necessary external schemas. In addition, the mapping between any given external schema and the conceptual schema must also be specified. In practice the external DDL will probably include the means for specifying the mapping, but the schema and the mapping should be clearly distinguishable.

Responsibilities of DBA...

Defining authorization checks and validation procedures

Authorization checks and validation procedures may be considered as logical extensions of the conceptual schema. The conceptual DDL will include facilities for specifying such checks and procedures.

Responsibilities of DBA…

Defining a strategy for backup and recovery

Once an enterprise is committed to a database, it become critically dependent on the successful operation of that system. In the event of damage to any portion of the database – caused by human error, say, or a failure in the hardware or supporting operating system – it is essential to be able to repair the data concerned with a minimum of delay and with as little effect as possible on the rest of the system.

Responsibilities of DBA…

Monitoring performance and responsibilities to changes in requirements

The DBA is responsible for so organizing the system as to get the performance that is "best for the enterprise" and for making the appropriate adjustments change. Any change to details of storage and access must be accompanied by a corresponding change to the definition of the mapping to storage, so that the conceptual schema may remain constant.